NATIONAL GEOGRAPHICAL JOURNAL OF INDIA

ISSN : 0027-9374/2018/1664-1686, Vol. 64, No. 3-4, September-December, 2018

Editor **Prof. R. S. Yadava**

1664 **Contributions of Shanti Lal Kayastha to the Development of Geography : An appraisal**
P. Nag 1-7

1665 **Urbanization in South and South West Asia Characteristics and Consequences**
Ram Bali Singh 8-22

1666 **Scheduled Caste Population in an Indian Hill State : A Case of Himachal Pradesh**
Surya Kant 23-40

1667 **Access to Basic Urban Amenities in India**
M. B. Singh and Nitin Kumar Mishra 41-53

1668 **Spatial Distribution of Education Facilities in Haveri District**
H Nagaraj and S. L. Karlawad 54-61

1669 **Population and Sustainable Development A Contextual Debate**
Arun Kumar Singh 62-72

1670 **People at the Centre Development, Resource, and Displacement**
Ravi S. Singh 73-89

1671 **Characteristics of Population in the Valley Districts of Manipur, India**
Ningthoujam Golson and Kh. Pradipkumar Singh 90-104

1672 **Demographic Trends and Transition in Odisha: Emerging Patterns and Implications**
Sibabrata Das 105-124

1673 **The Demographic Consequences of Partition of India (1947) in Punjab**
Awadh Narayan Choubey and Taruna Bansal 125-134

1674 **Socio-spatial Paterns of Age Disparity Between Widow and Widower in North-East India**
Sriparna Das and Bimal K. Kar 135-145

1675 **Linkages between Population Growth and Land holdings in Hathras District, Uttar Pradesh**
Shamsul Haque Siddiqui, Mumtaj Ahmad and Pasarul Islam 146-154

1676	**Age Specific Population Projection of India using Bayesian Methodology** Abhinav Singh, P. S. Pundir, Anurag Verma and Gyan Prakash Singh	155-168
1677	**A Study in Population Growth and Characteristics of Patna Urban Agglomeration** Anjani Kumar and R. S. Yadava	169-179
1678	**Adverse Impact of Canal Irrigation on the Environment in Hyper Arid Parts of the Indian Desert** Dr. Sahila Salahuddin	180-187
1679	**Tourism Supply as a Catalyst of Tourism Development in Bishnupur District, Manipur** Shabina Hussain andAteeque Ahmad	188-200
1680	**Livelihood Crisis and Distress Seasonal Migration: A Study of Beed District in Maharashtra** Abdul Jaleed C. P. and Aparajita Chattopadhyay	201-214
1681	**Meaning the Quality of Life in Jabalpur city : An Integrated Approach** Rambooshan Tiwari and Jagadish Singh	215-228
1682	**A Comparative Study of Health, Quality of Life and Social Well-Being in Slums of Kanpur City** Rohit Singh and V. K. Kumra	229-240
1683	**Culture, Creativity and Tourism: A Study of Sikkim** Sanjukta Sattar	241-248
1684	**Resource Linkages to Poverty among Scheduled Castes in District Ghazipur, UP: A Geographical Perspective** Ajay Raj Mridul and Anand Prasad Mishra	249-260
1685	**Assessment of the Efficiency and Student Flow at Elementary Education in West Bengal** Sabyasachi Sarkar and D. Gownamani	261-272
1686	**Comparative Study of Sex Ratio among Hindu and Muslim Population and their Spatial Distribution in Uttar Pradesh: A Geographical Analysis** Tariq M Usmani and Shamshul Haque Siddiqui	273-281

***

NGJI, An International Refereed Journal
(NGSI-BHU, ISSN: 0027-9374/2017/1664)
Vol. 64, No. 3-4, July-December, 2018

Contributions of Shanti Lal Kayastha to the Development of Geography : An appraisal

P. Nag[1]

I had the privilege of bringing out two felicitation volumes in honour of Prof S.L. Kayastha, first one in 1986 and the second one 2001. Both were edited volumes with a group of co-editors who were either his colleagues or students or admirers. For the former one, Prof Hari Har Singh, Prof V.K. Kumra, Prof Jagdish Singh, Prof Haushila Prasad and Prof S.K. Singh were in the team. Regarding the latter one, Dr Smita Sengupta and Dr Chandra Shekhar Kumar were the co-authors. Both the volumes were published by the Concept Publishing Company, New Delhi. Additional groups of his enthusiasts joined us as contributors by writing research papers.

Needless to say, Professor Kayastha has a long list of associates who came closer to him over the years for various reasons. Anybody who had met once never drifted away. I took up Geography at post graduate level due to his encouragement. When I was a final year PG student, Prof Kayastha happened to visit my home town, Mathura. He made a point to meet my father there. It was a great honour for me. Later I had several occasion to be with him abroad, particularly for IGU conferences. As a result, we were together in Nigeria (1979), Japan (1980), Brazil (1982), United Kingdom (1982), Nepal (1983), France (1984), Spain (1986) and Australia (1988). We had several academic and scientific programmes together, such as co-edited book entitled, Population and Disaster, published by Basil Blackwell, Oxford which was favorably reviewed in the scientific journal, Nature. We have also written an article on Bhopal Tragedy. For me it was also important that he became Chairman of the Advisory Committee of National Atlas & Thematic Mapping Organisation (NATMO), Kolkata. He suggested to bring out the Indian Ocean Atlas which I had the privilege to initiate and complete it as well. He had a special inclination for cartography as well. He participate in the Commission of Population Cartography of the International Cartographic Association (ICA) meeting on Population Mapping Technology which was held as a part of the IUSSP Congress in 1989 in Delhi. His in depth knowledge on the Indian population maps were highly appreciated. On the other hand, he actively participate in the IGU Commission on Population Geography and attended its several conferences abroad. He was also full member of the IGU Commission on Environmental Problems.

1. Vice-Chancellor, Mahatama Gandhi Kashi Vidyapith, Varanasi Former Surveyor General of India & Former Director, National Atlas & Thematic Mapping Organisation

Environment cannot be viewed in isolation. Population and development vitally affect the state of environment. Therefore, it would be necessary to consider population, environment and development as interacting aspects of the global phenomena. Development, to be meaningful, has to be sustainable developments. This is the opening paragraph of the first chapter of the book of Professor Kayastha entitled Geography of Population. The model proposed by him involves the issues related to environment, population and development (EPD). Such approaches have a greater acceptability in geography from very early stage. In fact this disciple has been considered as the study of human-environment relationship. Professor Kayastha's main focus was on environment, population and development. In his Presidential Address in the 16th Indian Geography Congress of the National Association of Geographers of India (NAGI) in Bhubaneshwar in November 1993 he remarked (Kayastha, 1993) :

"Environment, development and quality of like are interrelated. There is a need to have a perspective on environment and development, and thereby help improve the quality of life. In spite of numerous platitudes in professions, it is not so. The world is faced with environmental problems of mounting nature, situations over development and overdevelopment, affluence and poverty, all of which detract from the quality of life."

From the above observation it is apparent that he use to consider environment, population and development together. In his work, such integrated approach has been reflected. The hidden factor is the resources. According to him, development has strained the environment. The profligate use of resources of energy, water, land and forest by the rich, and to meet the needs of the poor, whose numbers are ever-increasing, is making environmental and developmental sustainability difficult (Kayastha, 2002). The concept of development has undergone drastic changes. Its reincarnation as 'sustainable development' has close links with population, environment and resources. Professor Kayastha has highlighted the changing equation very effectively while dealing with issues at any level. While there is general agreement on the need for the protection and optimization of 'sustainable', according to Kuhnen (1992) means survival, that is keeping the community alive. 'Sustainability' also means 'an ecologically acceptable production', where everything removed is the replaced so as not to harm the ecological system. Sustainability can also be understood in a social structures are relationships which ensure a fair distribution of income, power and opportunities, thus providing basis of social peace.

Sustainability finally environment, there is repeated emphasis on sustainable development. The term stands to mean long-term carrying capacity of a region or regions, where there is no negative impact on environment and sustainable development (Kayastha, 1998). Though, 'sustainable' has been considered as a comprehensive expression of acceptable balance between EPD issues, there are several terms now in currency, such as 'sustainable development', 'sustainable economy', 'sustainable society' and 'sustainable use'. The World Commission on Environment and Development (WCED) defined sustainable development as development that means the needs of the present without compromising the ability of future generations to meet their own needs. Further, the term has been criticized as ambiguous and open to a wide range of interpretations, many of which are contradictory. The confusion has been caused because of using these terms interchangeably, as if their meanings were considered almost the same. They are not. 'Sustainable growth' is a contradiction in terms : nothing physical can

grow indefinitely. 'Sustainable use' is applicable only to renewable resources : it means using them at rates within their capacity for renewal.

In addition, 'sustainable development' is used in this strategy to mean : improving the quality of human life while living within the carrying capacity of supporting ecosystems. A 'sustainable economy' is the product of sustainable development. It maintains its natural resource base. It can continue to develop by adapting, and through improvements in knowledge, organization, technical efficiency, and wisdom. Furthermore, a 'sustainable society' lives by the nine principles outlined below (IUCN/UNEP/WWF, 1991).

- Respect and care for the community of life
- Improve the quality of human life
- Conserve the earth's vitality and diversity
- Minimize the depletion of non-renewable resources
- Keep within the earth's carrying capacity
- Change personal attitudes and practices
- Enable communities to care for their own environments
- Provide a national framework for integrating development and conservation
- Create a global alliance

After scanning the contributions on EPD, it appears that he was able to understand the significance of studying in integrated manner from the very beginning of his career and that too at regional level Geographers have always considered oregano as a handy tool for spatial analysis. In his case it was the Himalayan Beas Basin. His early contributions including his Ph.D. and the first important publication entitled The Himalayan Beas Basin: A Study in Habitat, Economy and Society (1964) highlighted the significance of a river basin concept which now has been so widely accepted approach for development. Nevertheless, he did not confined to regional level for dealing with EPD issues. He was one of the foremost geographers to deal with policies, legislation and philosophy. This forced him to operate at the global and national levels. On the other hand, he mostly engaged his students and research scholars to deal with EPD issues at local level. Perhaps the mechanism such developed allowed him to have first hand information in this process which in turn could be generalized and tested at regional level; and that again in turn contributed to policy oriented research. Such feedback mechanism worked very efficiently for the benefit of not only the professor but his students as well.

Professor Kayastha's Model

A close study of the work will indicate that Professor Kayastha had implicitly put the environment, population and development at the vertex of an equilateral triangle with resources at the centre. His in- depth study of Indian philosophy and frequent reference to Mahatama Gandhi's views were meant to support this model. His studies and contributions at different levels were suppose to revalidate this model, partly or wholly. The best part of his model is that it is based on qualitative statements. He was able to shrug off the so-called quantitative revolution in geography when it was at its peak, which incidentally coincided with the peak of the contributions of this professor. As a result, his contributions are easily understood without traversing through the associated juggler. In fact he was able to swim against the tide.

Another important aspect of his contribution was to give due importance on social issues instead of economic aspects. This was due to his inclination on population related issues. With the award to Nobel Prize to Dr. Amartya Sen, social issues gained importance recently, but Professor Kayastha has been discussing these

aspects from the very beginning of his academic life. In fact, again he was able to push aside the much-accepted economic models in geography in preference to social and behavioral models that too at the peak of the former.

Professor Kayastha at National Level

Geographers have hardly made contributions to work at global and national levels. Further there are rarer contributions in policy oriented researches particularly on EPD issues. His earliest contributions on water, forest and food security are testimony of strong views that were to come later in his career. In 1986 he made an appraisal of water resources of the country and pleaded for national water policy. In the following year he studies forests of the country and the impact of economic development (1982). In 1986 he analyzed the environmental policies of India. Recently, he made a valuable contribution on the water resources, their conservation and management (1998d). His attention was also on environmental problems such as floods, their occurrence, forecasting and control (1983). He was not only sensitive to environmental problems but also their mitigation strategies and relationship with human being (1998c). Population aspects have been closely studied in an integrated manner. These issues were sustainability of metropolitan centres, fertility and migration (1988a, 1991a; with Mukherjee, 1979). In fact, in his recent book entitled, Geography of Population, he has discussed several spatial aspects of population and that too in relation to environmental and developmental issues (1998a). Though, Professor Kayastha has written several times latter issues (1989, 1990), but at conceptual level his views on environment, development and quality of life has broken new grounds (1993). While writing the foreword for our earlier book he raised a very pertinent question: What kind of world shall the coming generation inherit? The answer largely depends on the actions taken now by the governments and the individuals all over the world. It is of prime importance that sincere efforts are made towards conservation of environment and development of a conscience for sanctity in life (1993). Regarding the latter aspect, he has widely quoted from Gita and contributions of Mahatama Gandhi. Perhaps, he wanted to evolve an oriental view of conservation and way of life that revolves around the concept of limited wants and universal welfare deeply imbedded into Indian philosophy and culture.

Professor Kayastha at Regional Level

As mentioned earlier, Professor Kayastha's earlier contributions have been on Himalayan Beas basin. He has extensively written on the issues related to population, tourism, horticulture, forest and ecology (1956, 1983a, 1990b, 1992). In fact, the study of Himalaya was very close to his heart, but tourism in this region was closest (1975, 1983a, 1998; with S.N. Singh, 1983). According to him, tourism for various purposes is largely based on the use of environment. The state of environment depends on the manner of use of environment. Tourism on large scale makes heavy demand on environmental resource and hence the need for greater concern for necessary measures for its protection and conservation (Kayastha, 1997). He has also studied forestry at regional level, particularly concerning this mountainous region. Regional studies were also made concerning environmental problems such as floods (with Yadav, 1985, 1990). Further in the researches conducted under his guidance during the early period were also on regional issues related to EPD. This trend continued till later period of his life. His contribution has also been valuable in the volume India: A Regional Geography, particularly the chapter on Himachal Region (Kayastha & Mishra, 1971). According to him, the high pressure of population on agricultural land, lack of secondary and tertiary sectors and inadequate transport systems are the main features of the regional

economy. The strategy for development will have to be guided by the physio-economic conditions of the region. This calls for change in the land use pattern on scientifically and economically more remunerative lines and provision of electricity and adequate transport system.

Professor Kayastha at Local Level

During the later part of the researches conducted under his influence, the local issues caught his attention. This was due to the nature of problems faced by the people at large. Most of the issues were urban in nature like slums, air, noise, water and solid waste problems. Kumra conducted an extensive survey on urban environmental problems of Kanpur city (1978, 1979, 1980, 1983). Attempts were also made to study urban ecosystems and quality of human environment of selected cities. Other studies on Varanasi was also carried out based on perception studies (with S.N. Singh, 1977). He was able to make one of the earliest study on Bhopal disaster with Nag (1989). Nevertheless, the study at the local level was not limited to urban areas only. Aspects related to energy resources and technology transfer in rural scene were given due importance (with R.B. Singh, 1983). He feels that environmental degradation and bad planning have lead to poor, lopsided development. All these need proper planning, environmental protection and sustainable development. Location-specific planning and co-operation of voluntary agencies and the people will help to remove the perception gaps between the people and the policy-makers (Kayastha, 1988a).

Conclusion

Professor Kayastha has very coordinated way of studying EPD issues at all the three levels. The studies were complimentary to each other. Migration, tourism, hazards and similar issues were discussed at a greater length. Though maps and tables were used to support the qualitative statements, mathematical equations and analysis at decimal levels were omitted. This made reading extremely lucid. Perception studies have widely used for studying EDP issues, which made analysis more humane. The contributions at the later part of his life were more delightful in reading as they reviewed different aspects of environment, population and development in more integrated fashion. They also include national reports submitted to the International Geographical Congresses or presidential addresses of important scientific events (1998b, 1998c; with Raza, 1984). As mentioned earlier he falls back on meta-philosophical considerations to deal with the EDP issues. According to him, the Indian traditions of peace and harmony are very comprehensive, and extend to all living and non-living matter. We must evolve the concept of not only living in harmony amongst ourselves, but also in harmony with our environment. Through much harmony alone peace and progress are possible.

References

Clarke, John I., 1997, *The Future of Population*, Predictions, Phcenix.

IUCN, UNEP and WWF, 1991, Caring for the Earth, The World Conservation *Union*, United Nations Environmental Programme and World Wide Fund for Nature, Gland, Switzerland.

Kayastha, S.L., 1956, Tourist industry of Kangra, Kullu and Mandi in the Himalayan Beas basin, *The National Geographical Journal of India*, vol. II, pt. 3, pp. 128-48.

Kayastha, S.L. and S.N. Mishra, 1971, Himachal region, in R.L. Singh et al (eds), *India: A Regional Geography*, National Geographical Society of India, Varanasi.

Kayastha, S.L., 1975, Tourism, in Walter Imber and Hans Boesch (eds), *India, Kiminerly and Frey*.

Kayastha, S.L., 1981, An appraisal of water resources of India and need for national water policy, *Geo-Journal*, vol. 5, pp. 563-74.

Kayastha, S.L., 1982, Forest in India and the impact of economic developments, in the Proceedings of the *IGU Commission on Environmental Prob-*

lems, VI Symposium, Sao Paulo, Brazil, pp. 1-12.

Kayastha, S.L.,1983a, Impact of tourism in the Himalayan region, in the Proceedings of the *IGU Symposium of Commission on Environmental Problems*, No. VII, Palma de Mallorca, Spain, December 20-28, pp. 1-110.

Kayastha, S.L.,1983b, Floods in India : A study of their occurrence, forecasting and control, *The National Geographical Journal of India*, vol. 29, pp. 1211-4 1.

Kayastha, S.L. , 1986, Environmental policies in India, in C.C. Park (ed), *Environmental Policies: An International Review*, Croom Helm, London, pp. 223-58.

Kayastha, S.L., 1988a, Sustainability of metropolitan centres in Third World countries, in *Population in Transition in India*, vol. II, B.R. Publishing Corporation, Delhi, pp. 327-34.

Kayastha, S.L., 1988b, Environment and rural development, *Rural System*, vol. VI, Pt. 1.

Kayastha, S.L., 1989, Environment and development, in Hempriya Devi (ed), *Development and Environment*, Varanasi, pp. 1-7.

Kayastha, S.L., 1990a, Environment and development, in R.S. Doroa et al (eds), Man, Development and Environment, Ashish Publications, New Delhi, pp. 67-76.

Kayastha, S.L., 1990b, Population pressure in the Himachal Himalaya: Characteristics and Problems, *Vikas Publishing House*, New Delhi, pp. 27- 55.

Kayastha, S.L., 1991a, Some aspects of fertility in India, in J. Bahr and P. Gans (eds), Geographical Approach to Fertility, *Geographical Institute, Kiel University*, Keil, pp. 369-77.

Kayastha, S.L., 1991b, Review article on Kullu valley: Impact of tourism in mountain areas, *Indian Journal of Social Sciences*, vol. 4, No. 3, pp. 466- 71.

Kayastha, S.L., 1991c, Foreword, in Onkar Singh, P. Nag, V.K. Kumra and J. Singh (eds), *Frontiers in Environmental Geography*, Concept Publishing Company, New Delhi, pp. 5-7.

Kayastha, S.L., 1992a, Forest and ecology in the Himalaya, in R.B. Singh (ed), *Dynamics of Mountain Geosystems*, New Delhi, pp. 2-30.

Kayastha, S.L., 1992b, Forests and ecology in the Himalaya, in *Dynamics of Mountain Geosystems*, Ashish Publishing House, New Delhi, pp 26-39.

Kayastha, S.L., 1993, Environment, development and quality of life, Annals of NAGI, vol. 12(2), pp. 54-75.

Kayastha, S.L., 1998a, Geography of Population: Selected Essays, *Rawat Publications*, Jaipur and New Delhi,

Kayastha, S.L., 1998b, Frontiers on Environment : Reappraisal of Environmental Problems and Policies, Presidential Address, Geology *Sc Geography* Section, Indian Science Congress (Pune), Indian Science Congress Association, Calcutta, pp. 1-36.

Kayastha, S.L., 1998c, Population, disaster and disaster-reduction strategies, *Geographical Review of India*, vol. 53, pp. 206-18.

Kayastha, S.L., 1998d, Water resources of India : Their appraisal, conservation and management, *Acquatic Biology*, Nainital, pp. 20-5.

Kayastha, S.L., 1998e, Tourism and environment in the Himalayan region, in P. Nag, V.K. Kumra and J. Singh (eds), *Geography and Environment*: Regional Issues, Concept Publishing Company, New Delhi, pp. 31-45.

Kayastha, S.L. and V.K. Kumra, 1978, Air pollution problem in Kanpur City, *Indian Journal of Air Pollution Control*, vol. 1, No, 1, pp. 38-42.

Kayastha, S.L. and V.K. Kumra, 1979, Scientific study and control of ecological deterioration in urban ecosystem: A case study of Kanpur city, in the *Proceedings of the IGU Commission on Environmental Problems*, Study and Control of Anthropogenic Transformation of Natural Ecosystems, Moscow, pp. 234-63.

Kayastha, S. L. and V.K. Kumra, 1980, Noise as a factor in environment, *Philippine Geographical Journal*, vol. XXIV, No. 3, pp. 127-42.

Kayastha, S. L. and V.K. Kumra, 1985, Quality of human environment : A case study of Kanpur city, in *Spectrum of Modem Geography*, Concept Publishing Company, New Delhi, pp. 447-59.

Kayastha, S. L. and S. Mukherjee, 1979, Spatial disorganization and internal migration in India:

Some strategies for restructuring the space economy and development, *Canadian Studies in Geography*, vol. 6, pp. 45-61.

Kayastha, S. L. and P. Nag, 1989, The Bhopal disaster, in John I. Clarke, P. Curson, S.L, Kayastha and P. Nag (eds), *Population and Disaster*, Basil Blackwell, Oxford and Massachusetts, pp. 206-18.

Kayastha, S. L. and Mehdi Raza, 1984, *Environmental Studies in India, in Country Report*: Trends in Geographical Research in India, 1980-83, Presented to the 25th IGC Paris, Indian National Science Academy, New Delhi, pp. 47- 55.

Kayastha, S.L, and R.B. Singh, 1983, Energy resources and technology transfer in the management of rural environment, in *Environmental Management*, Allahabad Geographical Society, Allahabad, pp. 379-89.

Kayastha, S.L. and S.N. Singh, 1977, A study of preferences and behaviour pattern of tourists in Varanasi: A geographical analysis, *The National Geographical Journal of India*, Vol. XXIII, pts. 3 and 4, pp. 143-50.

Kayastha, S.L. A S.N. Singh, 1983, Tourism in the U.P. Himalaya, in O.P. Singh (ed), *The Himalaya: Nature, Man and Culture*, Rajesh Publications, New Delhi, pp. 205-11.

Kayastha, S.L. A R.P. Yadav, 1985, Flood induced population migration in India: A case study of Ghaghara Zone, in L.A. Kosinski and K.M. Elahi (eds), *Population Redistribution and Development in South Asia*, D. Riedel Publication Company, Dordrecht, pp. 79-88.

Kayastha, S.L. and R.P. Yadav, 1990, Flood Hazard in Lower Ghaghara Plain: A study in perception and impact on socio-economic development, *National Geographical Journal of India*, vol. 26, pts. 2 and 3, pp. 19-28.

Kayastha, S.L., 2002, Environment, development and quality of life, in Annu Kapur (ed), *Voice of Concern*, Concept Publishing Company, New Delhi, pp. 292-312.

Kuhnen, Frithlof, 1992, Sustainability, regional development and marginal locations, *Applied Geography and Development*, vol. 39, Tubingen, pp. 101- 5.

Nag, P, Chandra Shekhar Kumar and Smita Sengupta, 2001, *Environment, Population and Development; Felicitation Volume in Honour of Professor S.L. Kayastha*, Concept Publishing Company, New Delhi.

Singh, H.H., P. Nag, V.K. Kumra, J. Singh, H. Prasad A S.K. Singh, 1986, Professor S.L. Kayastha : A profile, in H.H. Singh et al. (eds), *Geography and Environment : Issues and Challenges*, Professor S.L. Kayastha Felicitation volume. Concept Publishing Company, New Delhi, pp. v-vii.

●●●

NGJI, An International Refereed Journal
(NGSI-BHU, ISSN: 0027-9374/2017/1683)
Vol. 64, No. 3-4, Sept.-December, 2018

Culture, Creativity and Tourism: A Study of Sikkim

Sanjukta Sattar[1]

Abstract

Culture, creativity and tourism bear a symbiotic relationship as they mutually benefit each other. Culture in fact is one of important elements of tourism product which contributes to the uniqueness of the destination, adds to its attractiveness and gives the destination an identity of its own. On the other hand, tourism offers an important way for promoting, and preserving culture and cultural heritage and at the same time is functional in creating jobs and income as well as sustenance of the cultural heritage, cultural production and creativity. This communion of culture and tourism catalyse the flourishing of the creative potential of the host as well as the visitors. Just as tourism opens the avenues for the indigenous host population to sustainably nurture their cultural heritage and cultural skills through the practice of 'creative tourism'. This is 'creative tourism' which is an activity that is meant for providing the tourists an authentic experience by giving them an opportunity to cultivate their creative talents throughtheir participative learning in the arts, heritage and culture of the destination.

Against this background, an attempt has been made to examine the relationship between culture, creativity and tourism using evidences from Sikkim in this paper. The small Himalayan state of Sikkim since last twenty five years is one of the popular destinations among the tourists mainly because of its natural beauty although it is a storehouse of rich cultural heritage. The Sikkimese culture find expression in beautiful art and crafts , its rich tradition of performing arts and diverse eco-cultural heritage Recognition of the state's rich heritage and culture and associating them with tourism activity will provide this destination with a different identity. This paper examines the prospect of 'Cultural and Creative Tourism' in Sikkim.

Keywords: *tourism, culture, heritage, creativity, employment, conservation, sustainability*

Introduction

Culture, creativity and tourism are intrinsically related with each other. Beyond the traditional factors of tourism production like sun, sea, sand, mountain, forest and static mode of consumption, culture has also become an important source of attraction. Many of the tourism destinations in order to distinguish themselves from other competitors have turned to culture not only as a means of distinction but also as a means of generating income and jobs (Richards and Wilson, 2007). Even World Tourism Organization 2005 and European Travel Commission also sees

1. Associate Professor, Department of Geography, University of Mumbai, Mumbai,

'cultural tourism' as one of the major trends in global tourism in the past three decades and has been identified as one of the major growth areas. According to the OECD report on the Impact of Culture on Tourism(2009:21) cultural tourism accounted for almost 359 million international tourism trips in 2007 or 40 per cent global tourism. Moreover in value terms, the contribution of cultural tourism is even greater, since cultural tourists are estimated to spend as one third more on average than other tourists (Richard, 2009: 1).With the apparent success of the culture-led or cultural development strategiesa number of the destinations started banking upon their cultural resources and combined it with tourism.As a result the supply of cultural attractions grew faster than the demand and though each destination desperately claimed of their uniqueness had to face stiff competition. Many of the destinations to survive such competitions were "in the search of new forms of articulation between culture and tourism which can help to strengthen the local culture"as well as"can raise the value accruing to local communities and improve the link between local creativity and tourism"(Richard, 2009:1).This also led to the efforts towards replacement or supplementing cultural development strategies with creative development thus opening the way for creative tourism.This new form of tourism is "travel directed towards an engaged and authentic experience with participative learning in the art, heritage, or special character of a place and it provides a connection with those who reside in this place and create this living culture" UNESCO (2006:2). It has also been emphasized that creative tourism includes more access to culture or history and involves doing something experientially and having an authentic engagement in the real cultural life of the city. Therefore creative tourism is very much linked to cultureand the particular cultural expressions will be unique to each place.

In this paper I have attempted to trace the linkage and the symbiotic relationship between culture and tourism and how it can help in conservation of heritage and culture against the background of tourism development in Sikkim. I have also tried to explore how an innovative communion of culture and tourism can catalyse the development of the creative potential of the host as well as the visitors through which the culture and traditions can be promoted and preserved.

Culture and tourism

Initially though culture and tourism were seen as being separate spheres of social practices, but gradually as Urry (Urry, 1995as quoted in Richards, 2003:2) has noted, the barriers dissolved mainly as a result of two parallel processes of 'culturisation of society' and 'culturisation of tourist practices'. Culture now has become an essential element of the tourism system or 'culture of tourism' (Richard and Wilson 2006, 1209). The bond between culture and tourism strengthened during the 20th century when tourists searched for new experience something more than just leisure. Thus more places began to recognize the value of culture as a potential means of generating tourism. The combination of tourism and culture contributes immensely in image creation process especially in terms of 'aestheticization of landscapes' (Morgan and Pritchard 1998 as quoted by Richards and Wilson, 2006:1209). The growth of cultural tourism basically has been an outcome of a "fundamental shift in the nature of consumption, changing factors of production and changes in the nature of tourism itself" (Richards, 2009:1). This happened with the shiftingof the trajectory of consumption from basic needs to creative needs. With the fulfillment of the basic needs for food and shelter,cravings for "higher order" needs such as status and self-fulfillment arise. This according to Scitovsky (1976), (as quoted by Richards, 2009:1) is a shift from unskilled to

skilled consumption. People just do not want to accumulate goods but also develop their potentials and build their own skills. Moreover as pointed out by Pine and Gilmore(1998:97) the stages of economy based on production of goods and services has been replaced by the economy specialized in the production of experiences. In the experience economy the product is a unique experience for the consumer, which cannot be replicated (Richards, 2009: 2).Along with this change towards skilled consumption and the growing importance of experience economy the trajectory of tourism has also demonstrated a shift from mass tourism to cultural tourism followed by a further move towards creative tourism. Cultural tourism, in contrast to mass tourism which had several negative impacts like overcrowding, environmental degradation, ruining of local culture, is considered to be "a good form of tourism, which was small-scale, high spend and low impact. Perhaps the cultural tourists themselves were perceived as desirable visitors, because they were usually wealthy, well-heeled and well-behaved" (Richards, 2009:2).

The number of people actually visiting cultural attractions has also grown with the growth of cultural consumption (of art,food, fashion, music, tourism) and the industries that cater to it has fueled the 'symbolic economy' of cities and regions (Ray, 1988; Zukin,1995). As pointed out by WTO Cultural tourism is one of the fastest and the largest growing segments of global tourism (WTO, 2004). According to the European Commission, 1998 record the attendance at museum, historical monuments and archaeological sites has doubled and attendance at the museums and monuments across Europe grew by about 25% (Richards, 2003:2). It is also argued that the number of tourists visiting cultural attractions has increased not only because they generally are culturally interested but also because that the levels of 'cultural capital' or cultural competence have increased in society as education levels have risen. Thus more and more people are in a position to interpret and appreciate the culture presented by high cultural attractions such as museums, theatres and the opera (Richard, 2003:3). Another reason cited was that with rise in number of tourists and their ever-rising demand for newer experiences, additional sources of attractions has to be identified and created.Thus the image of the destinations has to be created so that it is not only based on the physical assets but also linked to the cultural heritage and assets. Thus culture has become one of the basic resource from which the themes and narratives essential to 'placemaking' can be derived (Gottdiener1997 as quoted in Richards and Wilson, 2006 and1209) and often in associationwith the physical assets. A number of areas both rural and urban have been found to re-define themselves as consumption spaces in which history,cultural heritage and traditionsact as the key elements of identification.The possible cultural heritage assets which may be source of attraction to the tourists are extremely diverse. The tangible heritage assets includes buildings and historic places, monuments, artefacts, etc. which are considered worthy of preservation for the future (UNESCO, 2015). Intangible heritage represents traditions and culture of communities. According to UNESCO the intangible cultural heritage includes but not limited to traditional festivals, oral traditions, oral epics, customs, ways of life, traditional crafts etc. (UNESCO, 2015).

Another striking cultural trend that has a close relation with the growth of heritage industry has been the importance given to the feeling of nostalgia. In the contemporary period of globalization,cultural homogenization, high mobility and increasing pace of life, many experience the associated feeling of detachment from one's roots and loss of one's culture. Hence, preservation of the cultural heritage has become the priority for many and cultural tourism is

thought to be one of the ways for achieving that. The growth of nostalgia for the past heritage, the urge to reassert national and local identities and the perceived economic benefits of cultural development all in combination significantly affected the supply of cultural attractions. "Culture is increasingly used by cities and regions as a means of preserving their cultural identity and developing their 'socio-economic vibrancy" (Ray, 1998: 5). The aim is to preserve its cultural identity and to use cultural heritage as the driving force for sustainable economic development.The policy-makers also attempt to (re)valorize place through its cultural identity in the face of increasing globalization and economic integration and this is what according to Ray (1998: 3) is the cultural economy approach to development. "Culture has become a crucial resource in the post-industrial economy, as reflected in the use of cultural heritage in the development strategies of European Union and other bodies (Richard and Wilson, 2006: 1210).Hence cultural tourism can be considered to be a useful development tool for many regions as every region is endowed with their own cultural characteristics which can be developed as source of cultural attractions to the tourists irrespective of the presence or absence of natural attractions in those places.

But the irony is that in spite of the close linkage between tourism and culture and cultural tourism being a major part of global tourism is now the victim of its own success. Many of the tourist destinations suffer or may suffer from a 'vicious cycle' of cultural tourism development, in which famous sites attract large numbers of tourists beyond the carrying capacity of the place. This leads to degrading the quality of experience as a result the serious cultural tourists avoid those destinations. The falling appeal of the destination forces suppliers to concentrate on new, lower value markets, chiefly consisting of the day visitors who leaves behind far less money and much more mess than their predecessors (Richards, 2009:2). The tourist destinations also face the "threat of locally distinct products becoming 'commoditized' and 'indistinct.'Another problem is that in the process of adding or retaining distinctiveness to the destinations many places adopt similar strategies which often ends up in "homogenization of tourist spaces" as expressed by Edensor (1998) and Judd (2004).Many tourism destinations though "claim distinctiveness but reproduce the same facilities in any number of places, echoing industrial globalization with its geographically widespread production but concentrated consumption" (Zukin 2004:8). This "leads towards the 'serial reproduction' of culture (Harvey 1989), 'placelessness' (Relph1976) or McDonaldisation (Ritzer & Liska 1997).These strategies of developing iconic structures, arranging mega events, thematization have become quite common in a number of cities and regions thus actually causing loss of distinctiveness. As a result of this 'McCulturization' (Richards 2009:3) the repulsion is replacing attraction among the targeted tourists.In fact the experiences enjoyed by most cultural tourists tend to be those small-scale, less visited places that offer a taste of 'local' culture or 'authentic' culture. This quest for originality, authenticityamong the tourists led "the reorientation of cultural models of cultural tourism, towards new modes of creativity-led tourism" (Richard &Wilson 2006:1210) or creative tourism. This new category of tourist are the ones who themselves are the producers of the tourist products and their own experiences, who avoid buying the packaged excursions but creatively shape their own experiences andthese experiences usually emphasizes active involvement in local culture.Therefore to cope with the changes in the nature of experience production and consumption the destinations also need to offer the new form of tourism, may be simultaneously along with mass cultural tourism. This

move for the destinations from the mass cultural tourism to creative tourism is undoubtedly going to be difficult, but as mentioned by Richard (2009: 3)there are major opportunities in working with rather than ignoring creative tourism.

Role of creative tourism

Tourism which offers visitors the opportunity to develop their creative potential through active participation in courses and learning experiences which are characteristic of the holiday destination where they are undertaken (Richards and Raymonds,2000:18 as quoted in Richards and Wilson, 2006:1215)is creative tourism. It is a form of tourism activity in which the tourists get the chance to explore their own creative potential and as mentioned by Richards (2009:3) therefore they can return home with something more than souvenirs with them. The tourists are actively involved in the creative processes and this sort of involvement leads to genuine exchange and engagement with local people and local culture. Such an endeavor will only be successful when creative process can be linked to the destinations and rooted in local culture, creativity and identity. Through this form of tourism the creative potential of not just the tourists but also of the destination can be explored and nurtured.This form of tourism helps the people to "enjoy being creative and making a living from their 'hobby'" (Ray and Anderson, 2000 as quoted in as quoted in Richards and Wilson, 2006:1215).The use of local crafts as a basis for creative tourism experiences also helps in bringing innovation in the production of souvenirs. This form of tourism implies a level of co-creation and co-makership between visitors and local. Co-creation covers an emerging body of knowledge about the way in which products, services and experiences are made jointly by producers and consumers (Richards, 2009).The basic strategy of cultural tourism depends on the reproduction of culture into fairly static products for tourists, on the other hand creative tourism is seen as a process which can stimulate further change. Creative tourism must be developed to link local creativity with the inventive, imaginative people who travel in search of more engaging, interactive experience and this combined creativity of local people and the tourists can help to maximize the distinctiveness of the place. The distinctiveness is about those factors that make the place stand out from others and this is just not about the tangible assets that places have, but also about their intangible resources related to culture like atmosphere, ambiance, skills,creativity etc. Through creative tourism the destinations can refit cultural tourism in fascinating and pioneering ways. This enables the destinations not only to increase their potential to attract creative tourists, but also to develop and nurture their creative potential and cultural skill inherited from their predecessors, thus helping to address broader, cultural, social and economic problems. This also helps in "giving recognition to the minority cultures as a source of creativity and skills" rather than just exhibits of tradition or cultural objects "which places them in a new position vis-a-vis the mainstream economy, the tourism industry, the tourists and the society as a whole" (Richards, 2009:7). This according to Richards(2009:7) also involves reversal of 'normal power relationships' in host-guest relationshipas it turns the locals into the source of expertise that the tourists seek, for e.g local women instead of just serving tourists at bars and restaurants or selling them small craft items,souvenirs or eatable in the market, now also become their teachers and co-workers in the craft workshops for tourists.The issue of retaining attractiveness of the destinations by adding touch off uniqueness to the tourism productscan also be addressed by creative tourism as "creativity essentially involves adding something new to existing cultural products" (Richards and Wilson, 2006: 1221)which is mainly

through the introduction of innovationand improvisation in the conventional tourism products. This also opens a new way for preserving the cultural heritage especially for the sustenance of the intangible heritage like traditional crafts, performing art, oral traditions etc. In creative tourism, creativity, which characterizes the production as well as the consumption process, being developed endogenously makes creative use of the inherited, created or creative assets of the destination to provide creative experiences for tourists. In order to harness the benefit of creative tourism a harmonic relationship must exist between cultural manager and tourism manager as the former should use their creative skills to innovate new sources of tourist experiences and the later can introduce the economic and marketing skills necessary to make the tourism product viable. Thus this form of tourism helps in preserving the cultural heritage in a sustainable fashion, bytaking care of the fact that local residents are economically and culturally benefitted from it.Through this innovative form of tourism the diminishing resources of public space can be utilized most effectively for self-development of the local residents and tourists alike (Richards and Wilson 2006: 1216).

The need for the use of creative resources of a particular location places onus on the destination to stimulate creative processes and production. Creative tourism being more dependent on the intangible resources incurs less production cost and increases flexibility for the destination. The responsibility lies with the destination to invest in creative capital and social capital of the inhabitants. This in turn gives the local residents more of a stake in tourism, becoming active producers of tourism experiences and at the same time help them to nurture their creativity traditionally inherited from their forefathers. This paves the way for sustainably preserving the cultural heritage.

Against this background in the following section the symbiotic relationship between culture, creativity and tourism development with special reference to Sikkim will be discussed.

Culture, creativity and tourism development in Sikkim

The state of Sikkim has been since last twenty years one of the popular destination among the tourists mainly because of its natural beauty. In addition to its natural diversity this small Himalayan state is also blessed with very rich cultural heritage both tangible and intangible. The primary sources of tourist attraction include the panoramic view of snow-capped Himalayan ranges, exquisite varieties of flora and fauna, the turbulent Teesta and Rangit which are the main rivers of Sikkim, the lakes, hot-springs and waterfalls and the ancient monasteries and gompas.This is a land of diverse eco-cultural heritage with a rich base of traditional ecological knowledge. The Sikkimese culture finds expression in various forms of beautiful art and crafts and its rich tradition of performing arts.The handicraft and handloom products like carpets, curtains , bags, belts etc. with traditional design and different colours demonstrate the very distinctive marks of Sikkimese culture representing the artistic sense and creativity of the Sikkimese people.The art of wood carving, wooden and clay mask making, making of cane and bamboo craft objects and hand-made papermaking are some other artistic skills which local population has inherited from their forefathers.These forms of art will be nurtured and continued by the future generations only when they are economically sustainable. One way of making it possible is by associating tourism with the art and culture of the state.Also Sikkim's near about 200 monasteries or Gompas have not only been influencing the cultural heritage and lifestyle of the people, but also demonstrates the ancient rituals in practice.So the state is endowed with a rich cultural heritage. Yet as

source of tourist attraction in general natural attractions overshadows the cultural attractions and that too only a few selected cultural sites have been conventionally visited by all the tourists visiting the Stateand often leading to overcrowdingbeyond the carrying capacity.In fact the use of cultural resources as source of tourist attraction is still in a very nascent stage. Only recently, efforts are being made to make the tourists aware of the rich cultural traditions and help them to experience it by coordinating the tourist itineraries with the local fairs and festivals e.g Jorethang Maghey Mela, Losar cum Tourist Festival at Anden Woolung Gumpa, Daramdin. Special tourism festivals e.g Hee Bermiok Kalej Valley Heritage Festival, are also being arranged where the local residents get an opportunity to showcase their art, craft, cultural heritage and traditional cuisines. Home-stay facilities arranged for the tourists as a part of village tourism festivals e.g. Maniram Village tourism festival,makes it possible for the tourists to get an experience of traditional customs, local cuisines and other local activities often linked to the daily life of the inhabitants.Some other festivals which have been linked with the tourist itinerary are Yakten - Bojeytar Village Tourism Festival, Pakyong,Bhadauria Purnima Festival - Tsomgo Lake, Loosong,Pelling Tourism Festival, Sikkim-Winter Carnival, Gangtok, where cultural programmes performed by Lamas from the monasteries or by different ethnic groups portraying their cultural uniqueness, sale of local handlooms and handicrafts , local food festival, exhibition and sale ofagricultural and horticultural products are arranged.

Traditional Cuisine of Sikkim is also becoming increasingly popular and has much potential in the world market. This offers an opportunity to preserve the ancient culinary traditions through further research as well as creating highly skilled workforce of culinary professionals who can help in adding Sikkimese cuisines as another feather to the various other attractions of Sikkim as a popular tourist destination. Also as a part of the village tourism the interested touristwill get an opportunity to learn local culinary skills. All this will help in, not only ingenerating job opportunities for the indigenous population but as well asin further popularising and preserving the traditional cuisines of Sikkim in this era of cultural globalisation when burgers and pizzas tend to conquer the Indian taste buds.

Shopping which is considered as an integral part of the tourism experience is also a valuable contributor to employment,income and revenue. Especially when tourists are encouraged to shop traditional handicrafts and other locally produced products the local craftsmen, and entrepreneurs are benefitted. In Sikkim the souvenirs popular among the tourists include canvas paintings and scrolls with local motifs, the 'Tashi Tagey' or the eight lucky signs, wooden dragon wall hangings, cloth bags, handmade paper products, jewellery of gold and silver intricately carved and inlayed with precious stones, woven items, Buddhist religious items and a host of other things. Designing shopping centres for traditional crafts, jewellery etc. on the lines of craft village or "shilpabusty" where not only sell of the products can be facilitated but also craft workshops can be organised and the interested tourists can even participate.There they will also get a chance of exploring their creative potential through active participation in the hands-on training programmes where the local craftsmen will be their teachers. This is 'creative tourism' which is "travel directed towards an engaged and authentic experience with participative learning in the arts, heritage or special character of a place, and it provides a connection with those who reside in this place and create this living culture"(UNESCO, 2006). In Sikkim such efforts has been already introduced but is still at a very infant stage.

Conclusion

Sikkim has unique cultural heritage, but till now, it was not significantly projected as a tourism product. Recognition of the State's unique heritage and culture and associating them with tourism activity will provide this destination with a different identity. A new form of tourism i.e 'Cultural and Creative Tourism' can be promoted which depends on the mutually beneficial relationship between culture and tourism. Such linkages will not only add new dimensions to the existing factors of tourist attraction but will also enable the promotion and preservation of local culture both tangible and intangible. This will provide an important means of enhancing culture and generating income.This can support and strengthen cultural heritage, cultural production and creativity of the local population and at same time will be providing a unique and authentic experience of the distinctive culture and heritage of the destination to the visitors. In a state which is the home of three ethnic communities Lepchas, Bhutias and Nepalese and blessed with rich cultural diversity, the problem of 'serial reproduction of the cultural product can be avoided by focusing on creative culture, skills and their expressions unique to each of these communities and those areas where they dominantly inhabit.Keeping this in mind the tourism activities should be planned involving all the stake holders.Well-defined, professional events and programmes can be arranged so that the tourists come to know about it, experience it and return culturally enriched and simultaneously the resident population are also benefitted from it.By linking culture, creativity and tourism through networks of interaction and economic exchanges guided by the principles of sustainability and involving all the stakeholders will not only lead to conservation of cultural heritage but also will usher in regional development.

References

Edensor,T., 1998, Tourists at Taj: *Performance and Meaning at a Symbolic Site*. London: Routledge

Harvey, D., 1990, The Condition of Postmodernity: *An Enquiry into the Origins of Cultural Change*. Oxford: Blackwell.

Judd, D.R., 2004, Visitors and the Spatial Ecology of the City. In M.Sheller and J.Urry (Eds.) Cities and Visitors: Regulating People, Markets and City Space. Oxford: Blackwell.

OECD, 2009, Impact of Culture on Tourism http://fasos.maastrichtuniversity.nl/profiles/Evans/OECD_Tourism_Culture.pdf (Retireved on 7.4.2015)

Pine II, B.J. and Gilmore, J.H., 1998, 'Welcome to the Experience Economy', *Harvard Business Review*, July-August. Pp.97-105.

Ray,C., 1998, Culture, Intellectual Property and Territorial Rural Development. *Sociologia Ruralis*. 38,3-20.

Relph, E., 1976, *Place and Placelessness*. London: Pion.

Richard, G., 2003, What is *Cultural* Tourism. https://www.academia.edu/1869136/What_is_Cultural_Tourism(Retrieved on 18.8.2015)

Richards, G., 2009, Tourism Development Trajectories-From Culture to Creativity http://www.tram-research.com/atlas/APC%20Paper%20Greg%20Richards.PDF (Retrieved on 18.8.2015)

Richards, G. and Wilson, J., 2006, Developing creativity in tourist experience: A solution to the serial reproduction of culture? *In In Tourism Management* 27 (2006).

Ritzer, G.,and Liska,A., 1997, McDisneyization and 'Post - Tourism': Complementary Perspectives on Contemporary Tourism. In C.Rojek, and J.Urry (Ed) *Touring cultures: Transformations in Travel and Theory*. London: Routledge.

UNESCO, 2006, *Towards Sustainable Strategies for Creative Tourism* Discussion Report of the Planning Meeting for 2008 International Conference on Creative Tourism Santa Fe, New Mexico, U.S.A. October 25-27: UNESCO.

http://unesdoc.unesco.org/images/0015/001598/159811E.pdf (retrieved on 15.08.2015)

UNESCO, 2015, Tangible Cultural Heritage. Cairo:UNESCO

http://www.unesco.org/new/en/cairo/culture/tangible-cultural-heritage/

(retrieved on 15.08.2015)

UNESCO, 2015, *Intangible Cultural Heritage*. Cairo:UNESCO

http://www.unesco.org/new/en/cairo/culture/intangible-cultural-heritage/

(retrieved on 15.08.2015)

Zukin, S., 1995, The *Culture of Cities*. Oxford: Blackwell.

●●●

NGJI, An International Refereed Journal
(NGSI-BHU, ISSN: 0027-9374/2017/1674)
Vol. 64, No. 3-4, Sept.-December, 2018

Socio-spatial Paterns of Age Disparity Between Widow and Widower in North-East India

Sriparna Das[1] and Bimal K. Kar[2]

Abstract

Widowhood continues to be a social stigma even in 21st century. In fact, the widows constitute 7.36% of female population in the country. However, there exists a considerable spatial variation in the proportion of widows in different parts of the country depending on variation in population composition and associated socio-cultural practices. The scenario of widowhood is no less different in North-East India inhabited by a population of a diverse ethno-religious composition. The phenomenon of considerably high incidence of widowhood in the region is largely the result of the prevalence of higher life expectancy among females, age differential between husband and wife, restrictions in widow remarriage and polygamy. With this background an attempt has been made in this paper to investigate the patterns of widowhood in different parts of North-East India as compared to India as a whole during 2001-2011 with respect to age, inter-religion, rural-urban and caste-tribe variations. The study is primarily based on secondary data obtained from various Census of India publications and partly based on primary data collected from selected localities in and around Guwahati city. The data so obtained have been analysed and presented using meaningful statistical and cartographic techniques.

Keywords: *Widow, widower, widowhood, socio-spatial, life expectancy, age disparity*

Introduction

Widows constitute the most marginalised and deprived segment of population in male-dominant societies. The widowhood is considered to be a social stigma even in many parts of India in 21st century. Growing industrialisation, globalisation, technological advancement and scientific thinking has brought about many changes in the contemporary society, but it has failed to penetrate into some areas like our social belief system, prejudices, customs, religions, ethnicity and especially marriages. The people's mind-set towards widows has also not changed considerably. Besides, the prohibition of widow remarriages persists in society and their security for future is still a question (Malik, 2013).

In India, there is little information about the actual living condition of the widows. A study by Chen (1997) discovers the image and every-

1. Research Scholar, Department of Geography, Gauhati University, Gauhati Assam.
2. Professor, Department of Geography, Gauhati University Gauhati Assam.
Email: bimalkar@yahoo.com

day reality of widowhood along with their needs and demands based on selected 550 widows in seven states of India, viz. West Bengal, Bihar, Karnataka, Andhra Pradesh, Rajasthan, Uttar Pradesh and Kerala. Using standard poverty indices Dreze and Srinivasan (1996) find out that there is a close relationship between widowhood and poverty, especially in rural India and find out that the incidence of poverty is higher among the female-headed single widows who are living with unmarried children as compared to the male-headed households. According to 2011 Census, widow population of India is 43 million, which accounts for 7.36% of the total female population of the country. They are often treated as 'excluded' not only in family but also in society. To comprehend their social and psychological condition Kivett (1978) explores three levels of loneliness among mainly rural widows from out of 16 variables. Even government attitude towards these 'invisible' groups has been absent. In India, the status of women is equal only in Preamble, but in reality the circumstances are far behind. In Indian society women are significantly suppressed, and if somebody is widow, her sufferings become doubled. So, it can be said that there is no group more affected by the sin of omission than widows (Sandys, 2000). Throughout the country, the presence of widow and widower is not uniform and it varies from one area to the other. Surprisingly, the proportion of widows is found to high in southern states like Pondicherry (11.58 per cent), followed by Kerala and Goa, even though they do not experience higher male mortality (Chandrasekhar and Ghosh, 2017). On the contrary, states like Nagaland (4.14 per cent), Bihar (4.49 per cent) and Arunachal Pradesh (4.75 per cent) record lower proportions of widows.

It is interesting to note that the north Indian states like Punjab, Uttar Pradesh and Chhattisgarh witness considerably high proportion of widowers. Characterised by marked heterogeneity in ethno-religious composition of population, the situation of widow and widower in North-East India is no less different from the rest of the country. For this heterogeneous nature of Indian society, widowhood is more vulnerable, painful, humiliating and harmful as compared to widower, because discrimination and ritual sanctions of the society against widow continue to be very high (Johnson and Shyamala, 2010; Reddy, 2004). The picture in this respect would become more clear when the urban and rural areas are separately considered. Accordingly, the widow and widower population together constitute 4.53 per cent and 4.22 per cent respectively in the urban and rural areas of North-East India as against the corresponding national averages of 4.49 per cent and 4.63 per cent. But, the proportions of widows and widowers are, however, more strikingly varied. Due to the prevalence of lower proportions of widow (5.16 per cent) and widower (1.51 per cent) in North-East India as compared to the country (widow: 7.36 per cent and widower: 1.97 per cent), the position of north-east region is slightly better than the nation as a whole. Interestingly, there exists preponderance of widowhood in north-east India after above 40 years of age, although the picture is not uniform across the country.

With the above background, an attempt has been made in this paper to investigate the patterns of age disparity between widow and widower in different parts of North-East India and India as a whole during 2001-2011 with respect to religion, rural-urban and caste-tribe variation.

Study area

The seven states of North-East India (Arunachal Pradesh, Assam, Meghalaya, Nagaland, Tripura, Mizoram and Manipur), being located between 21°59´N and 29°40´N latitudes, and 89°51´E and 97°25´E longitudes (Fig. 1), and covering an area of 2,55,036 sq. km, shelter 45,161,611 population as per 2011 Census. This region is almost girdled from all sides by foreign countries - Bhutan and China on the north and north-east, Myanmar on the south-east, Bangladesh on the south and south-west and Bengal Duar on the west, which connects

the region with Bengal and rest of the country. The region has a remarkably well-recognised entity because of its unique physical, racial and socio-cultural diversities including the historical and politico-administrative ones (Kar, 2002).

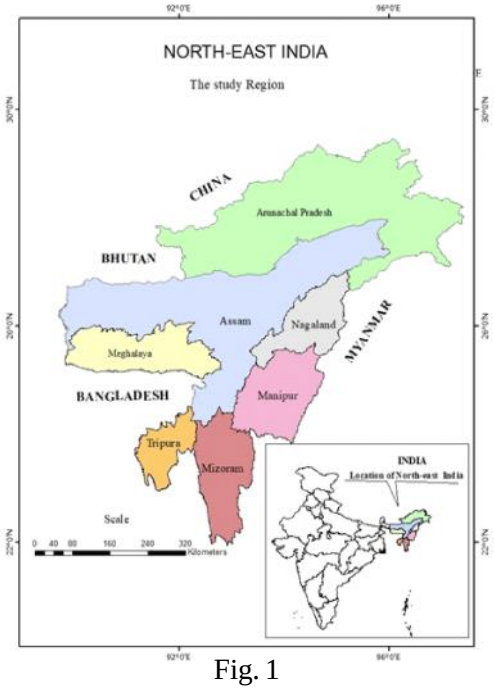


Fig. 1

Data base and methodology

The study is primarily based on secondary data drawn mainly from various Census of India publications for the period 1991-2011. Besides, journals, books, newspapers, reports, etc have been consulted for proper understanding of the problem. Further, to explore the prevailing realities of the widow and widower population primary data have been collected from 100 respondents of Guwahati Municipal Corporation through random sampling technique using a well-designed interview schedule in both individual houses and old age home ('Amar Ghar'). The data so obtained have been processed and analysed using simple but meaningful statistical measures like ratios or percentages, the median age of widow and widower, etc. The results of the analysis are depicted in the form of maps and graphs using suitable cartographic techniques.

Observation and discussion

Trend of male-female widowed population

The proportion of male-female widowed population in North-East India has not remained the same during 1991-2011. So far widow population is concerned, it decreased from 5.53 per cent to 5.16 per cent, while the proportion of widower population increased from 1.38 per cent to 1.51 per cent (Table 1). But the picture is somewhat contrasting in the case of country as a whole. Unlike in the north-east, the proportion of widow population in the country as a whole increased considerably from 6.50 per cent to 7.36 per cent during 1991-2011. In the case of widower population, however, the trend between the north-east and India is almost same. On the one hand, it is generally observed that the choice of polygamy is becoming less among the male population, and on the other hand, rising literacy rate, low age differential between the husband

Table 1: Proportion (%) of widow and widower population in 1991-2011

Administrative division	1991		2001		2011	
	Widower	Widow	Widower	Widow	Widower	Widow
North-East India	1.38	5.53	1.39	6.39	1.51	5.16
India	1.94	6.50	1.83	6.91	1.97	7.36

Source: Census of India, 1991, Table-C-1 Age Sex and Marital Status India and Seven States of North-East India; Census of India, 2001, Table-C-2, Marital Status by Age and Sex, India; Census of India, 2011, Table-C-2 Marital Status by Age and Sex, India.

and wife, and changing living standards may also contribute to this phenomenon.

Rural-urban variation in widowed population

The spatial variation among widow and widower population in North-East India becomes further apparent when it is viewed separately for rural and urban areas. The analysis of Census data for 2011 reveals that although the pattern of male and female widowed population is almost same in both north-east region and country as whole, the proportions are higher in the country than that of the north-east region, excepting that of urban female (Table 2). However, it striking enough to note that while the proportion of widows is lower in the rural areas than urban areas in both north-east region and country, it is higher among the widowers in rural areas than urban areas (Table 2). It is due to insufficient medical and educational facilities along with prevalence of low literacy rate, lack of proper knowledge during and after pregnancy, poverty, etc the incidence of mortality among the widows is considerably higher in the rural areas.

On the other hand, the causes behind the large concentration of widows in urban areas both in north-east region and the country are diversified job opportunities, higher accessibility of educational facilities accompanied by more educational consciousness and demand for white colour jobs (Kar and Magar, 2015).

Table 2: Proportion (%) of widow and widower population in rural and urban areas, 2011

Administrative division	(Widow)		(Widower)	
	Rural	Urban	Rural	Urban
North-East India	6.98	7.97	1.57	1.23
India	7.27	7.57	2.12	1.64

Source: Census of India, 2011,Table C-2, Marital Status by Age and Sex, India.

Age-specific variation

The variation in proportion of widowed population among different age groups throws light on the prevailing gender disparity between male and female widow population. It is quite striking to note that although the overall incidence of widow population is lower than that of the widower population in the country, the proportion of widow population is found to vary from 0.08 per cent in below 20 age group to as high as 69.01 per cent in 80+ age group as against the corresponding figures of 0.08 per cent and 70.77 per cent in north-east region as per 2011 Census (Table 3). On the other hand, the proportion of widowers is found to vary from 0.02 per cent in below 20 age group to 24.93 per cent in 80+ age group in the N.E. region as against the country's corresponding figures of 0.04 per cent and 30.11 per cent. This is clearly indicative of the fact that there has been continuance of death of married males since early age keeping a large proportion of females as widows in all ages due to societal restrictions of widow remarriage, prevalence of relatively higher life expectancy among them, polygamy and marked age difference between husband and wife.

Moreover, both North-East India and India witness a very low proportion of male-female widowed population in early age, and it continues to increase gradually towards the higher age groups. The proportion of widows in different age groups is also found to be significantly higher than male counterparts in both these areas (Table 3). So far degree of age-specific variation in proportion of widowed population in north-east India is concerned, it is found to be higher among the females than that of males (Table 3).

Age-specific variation in major religious groups

In view of religious influence on fertility patterns and socio-cultural practices, there exists inter-religion disparity in the proportion between male and female widowed population in different age groups. Among the three major religious groups, the proportion of widows is found to be the highest among the Hindus (8.27 per cent) in North-East India, followed by Muslims (6.49 per cent) and Christians (5.01 per cent) as against country's corresponding averages of 7.62 per cent, 5.65 per cent and 8.18 per cent (Table 4). This particular phenomenon is deeply rooted in the traditional and conservative attitude towards women in the societies (Kar and Sharma 1998; Das and Das 2017). The prevalence of very low proportion of widows among Christian population (5.01 per cent) might be associated with westernisation, higher literacy and gender equality in the society. Further, it is not very surprising that the proportion of widows in various age groups is continuously higher among the Hindus and Muslims all over the country including North-East India. However, the degree of variation in this respect is higher among the females than that among the males. It is also observed that widowhood is more painful in Hindu society, although 'Sati' is not seen practiced nowadays (Kitchlu 1993). Except in lower castes, Brahmins put more restrictions on widows on their lifestyles including food, clothing and social gatherings. Even a widow is not allowed to perform the rituals to welcome her daughter-in-law (Johnson, 2012).

Table 3: Age-specific widowed population (in %) in North-East India and India, 2011

Age group	North-East India		India	
	Male	Female	Male	Female
Below 20	0.02	0.08	0.04	0.08
20-40	0.56	2.25	0.6	2.05
40-60	2.84	16.31	3.02	12.79
60-80	10.9	52.98	12.82	45.07
80+	24.93	70.77	30.11	69.01
Mean	80.65	76.98	81.06	78.04
S D	13.96	14.96	13.64	14.74
CV	17.31	19.43	16.83	18.88

Source: Census of India, 2011, Table-C-2, Marital Status by Age and Sex, India.

Age-specific variation in SCs and STs

Being characterised by diverse socio-cultural practices, caste composition of an area also reflects the overall pattern of the widowed population in North-East India as well as the whole country. The data for 2011 Census reveal that scheduled castes record significantly higher proportion in both widower (1.65 per cent) and widow (9.04 per cent) as compared to the scheduled tribes (widower: 1.42 per cent and widow: 5.43 per cent). In terms of age the proportion of widows among the scheduled castes varies from 0.09 per cent in age group below 20 to 77.25 per cent in age group 80+ as against the corresponding figures among the scheduled tribes which vary from 0.07 per cent (below 20 age group) to 62.11 per cent (80+ age group). It is thus clear that the magnitude of widowhood is

Table 4: Age-specific widowed population (in %) among major religious groups, 2011

Age group	North-East India						India					
	Hindu		Muslim		Christian		Hindu		Muslim		Christian	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
Below 20	0.04	0.09	0.02	0.08	0.04	0.06	0.04	0.09	0.03	0.07	0.04	0.08
20-40	0.67	2.22	0.29	2.52	0.56	2.01	0.64	2.12	0.04	1.67	0.48	1.87
40-60	3.33	16.63	1.18	17.95	2.97	13.39	3.16	12.83	2.14	12.65	2.33	12.56
60-80	7.81	54.88	5.98	57.00	10.95	40.51	13.13	45.25	10.63	46.42	10.35	43.44
80+	27.9	73.34	16.47	71.56	25.14	60.47	30.4	69.59	25.25	64.78	30.44	71.28
All Ages	1.96	8.27	0.65	6.49	3.39	5.01	2.08	7.62	1.23	5.65	1.85	8.18
Mean	81.62	77.07	82.24	76.48	80.55	77.37	80.91	78.05	82.05	77.74	82.39	78.47
S D	14.47	14.85	12.95	15.08	14.11	15.11	13.75	14.73	12.09	14.47	12.94	14.61
CV	17.72	19.27	15.75	19.72	17.52	19.52	16.99	18.88	14.74	18.62	15.71	18.62

Source: Census of India, 2011, Table C-3, Appendix- Marital Status by Communities, Age and Sex, India.

more prominent among the scheduled castes rather than among the scheduled tribes (Table 5). It is because remarriage of widows is more commonly accepted in the tribal society. Moreover, economic burden also acts as a push factor in motivating the tribal widow to get remarried. However, the degree of variation in widowhood is almost same both among the scheduled tribes and scheduled castes (Table 5).

Table 5: Age-specific proportion of widowed population (in %) among SCs and STs, 2011

Age group	Scheduled castes		Scheduled tribes	
	Male	Female	Male	Female
Below 20	0.03	0.09	0.03	0.07
20-40	0.49	2.48	0.52	1.99
40-60	2.88	18.93	2.88	13.82
60-80	11.4	60.9	11.77	42.99
80+	25.03	77.25	26.44	62.11
All Ages	1.65	9.04	1.42	5.43
Mean	80.58	76.65	80.77	77.29
S D	13.78	14.96	13.74	15.05
CV	17.10	19.52	17.01	19.47

Source: Calculated based on data from Census of India, 2011, Table-C-2 Marital Status by Age and Sex for Scheduled Castes, India; Census of India, 2011, Table-C-2 Marital Status by Age and Sex for Scheduled Tribes, India.

Age-specific widowed population

In view of highly diversified population composition and socio-cultural systems, North-East India presents a unique entity from the rest of the country. For this heterogeneous nature, it exhibits a significant spatial variation between the widow and widower population at state level. Accordingly, the proportion of widows varies from as high as 9.17 per cent Tripura to as lows as 4.14 per cent in Nagaland as against the corresponding figures for widower, which varies from 1.12 per cent in Meghalaya to1.59 per cent in Assam (Table 6). Such a pattern is largely associated with slightly lower life expectancy of male, greater restrictions of widow remarriages and the prevailing considerable age gap between partners in the region. On the other hand, the scenario is entirely different among the widower population.

The pattern of widowed population among male and female can be better understood by analysing age-specific data. While the state of Nagaland records the lowest proportions of widows (0.04 per cent) and widowers (0.02 per cent) in age group below 20, Tripura witnesses the highest (Widow: 0.11 per cent; Widower: 0.03 per cent). This is more so in the case of age group 80+ (Table 6). It is further observed that among the north-eastern states, Nagaland occupies a better position in widowed population, followed by Arunachal Pradesh, Mizoram, Manipur and Meghalaya. However, the degree of age-specific variation is found to be more in Meghalaya in the case of widows, and Assam in the case of widowers (Table 6). Prevalence of higher literacy rate, low level of gender inequality, decision making power of women, women empowerment, a dominance of Christianity, low level of social discrimination, etc keeps the situation slightly better in most parts of the region. On the other hand, in Tripura and Assam due to lower women employment, low literacy level and more incidence of social discrimination among the Hindus and Muslims, the proportion of widows is considerably higher than other parts of the region.

Table 6: Age-specific variation (in % cent) in widowed of states of North-East India, 2011

Age group	Arunachal Pradesh		Assam		Manipur		Mizoram		Meghalaya		Tripura		Nagaland	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
Below 20	0.04	0.07	0.03	0.09	0.03	0.07	0.02	0.05	0.03	0.07	0.03	0.11	0.02	0.04
20-40	0.52	1.95	0.61	2.31	0.38	1.72	0.51	1.95	0.46	2.4	0.42	2.48	0.56	1.63
40-60	2.93	8.58	3.05	17.21	1.95	10.67	2.5	11.88	2.87	17.41	2.14	17.2	2.45	10.20
60-80	13.67	43.59	11.02	55.68	9.99	37.67	11.32	37.06	11.04	50.19	10.65	57.12	8.99	34.20
80+	23.55	51.69	24.24	71.76	28.26	62.25	34.13	66.43	22.87	66.81	26.91	79.59	23.50	58.60
All ages	1.38	4.75	1.59	7.57	1.35	5.50	1.47	5.27	1.12	5.75	1.55	9.17	1.23	4.14
Mean	79.56	77.37	80.21	76.75	82.54	78.53	82.60	78.61	80.19	76.49	81.88	77.30	81.19	78.60
S D	13.89	14.31	14.27	14.98	12.56	14.61	12.74	14.84	13.97	15.27	12.93	14.89	13.93	14.68
CV	17.46	18.50	17.79	19.52	15.22	18.60	15.42	18.88	17.42	19.96	15.79	19.26	17.16	18.68

Source: Census of India, 2011, Table-C-2 Marital Status by Age and Sex, India.

Median age of widowed population

The pattern of the Median age of widowed population acts as an eye-opener to the prevailing proportion of widows and widowers in different states of North-East India. The analysis of 2011 Census data reveals that the widows of north-east region as a whole record slightly lower median age (60.36 year) as compared to the widowers (61.60 year). It is almost the same in the case of India as whole (Widow: 63.55 year and Widower: 64.67 year). It is, however, worth mentioning that although the median age among the widows is lower than that of the widowers, it is found to vary quite significantly from as low as 56.65 year in Arunachal Pradesh to as high as 62.09 year in Tripura (Table 7). On the other hand, the median age of widowers is found to vary from 59.43 year in Mizoram to 65.94 year in Manipur. The degree of variation in median age is found to be slightly higher among the widowers. The prevalence of slightly lower median age among the widows as compared to the widowers is associated with early beginning of widowhood and societal restrictions in widow remarriage. But, in the case of widowers, the widower-hood starts relatively late due to the prevalence of higher life expectancy among women and less societal restrictions in widower remarriage.

Table 7: Median age of widowed population in North-East India, 2011

States	Widow	Widower
1. Arunachal Pradesh	56.65	60.15
2. Manipur	61.00	65.94
3. Mizoram	57.52	59.43
4. Meghalaya	57.40	59.89
5. Nagaland	58.38	61.30
6. Tripura	62.09	65.18
7. Assam	60.46	60.94
N.E. India	60.36	61.60
India	63.55	64.67

Source: Census of India, 2011, Table-C-2 Marital Status by Age and Sex, India.

Case study perspective

A personal interview with three selected widows and one widower has been conducted during field study in Guwahati city to understand some realities with them. A brief summary of each respondent is presented below.

Respondent 1

Malati (29 year old), the youngest daughter to her parents, was born in a small day-labourer family in Dhemaji district of Assam. She has two brothers and two sisters. Her parents had arranged her marriage to Haren when she was 19 year old. Haran, the only child of his parents lives in a rented house in Guwahati. He was working in a printing press in Guwahati. Malati (name changed) did not go to school after class III, and her husband never attended school. Suddenly, she lost her husband in an accident at the beginning of her married life. Her husband was only 31 year old at that time. Two daughters were born in seven years of her marriage. She is now living with her in-laws along with two daughters in Guwahati. Her father-in-law is a day-labourer. To give proper education to two daughters, Malati is working as a servant at neighbours' house as well as she has been paying bank loan which was borrowed by her husband. Malati's in-laws often accuse on her for her husband's death, and they called her as 'unlucky'. They are not allowing Malati to attend any social gatherings like marriage, visit to friend's house, etc. They subjugate to various kind of discrimination on food, dress and ornaments. In our society, a wife finds her happiness while living with her husband. The case of Malati is not less different. Her life has come

almost to an end at the age of twenty-nine. Moreover, she has lost not only her husband, but also a friend, guide and lover. Malati often feels lonely, depressed, grief, apathy, deprived of love and loss of sexual desire. She becomes emotional when she recalls her past. Now she struggles to begin life again to bring up her two daughters.

Respondent 2

A sixty-five year old Shanti Devi (name changed) was born in a small family in Morigoan district of Assam. She has an elder brother. Shanti Devi's parents fixed her marriage when she was 21 year old to Bhuvan, an elder son to his parents. Bhuvan's parents lived in upper Assam. Shanti Devi's husband joined a private farm after completion of his graduation. They started living in a rented house at Khamakya Nagar in Guwahati after their marriage. They have one son and one daughter in 44 years of their married life. Her daughter shifted to Kolkata after getting married. Shanti Devi lost her only son in a road accident in 2016. This incident has changed her life after her daughter-in-law along with 5-year-old grandson left the house and started staying at her parents' home. Her husband died due to heart attack six months ago. Now she is staying alone in her house. Her daughter and son-in-law both talk over phone regularly about her health, etc and send some money every month to her bank account for monthly expenditure. Now it has become a matter of great challenge for her to adjust and start a new independent lifestyle after the forty-four years of relationship with husband, who is no more now. As a result a feeling of isolation, loneliness, anxiety, depression, self dependency, etc has grasped her life.

Respondent 3

An old woman Saraswati (name changed) has been living in an old age home in Guwahati for the last five years. Her husband died in cancer five years ago. She married at the age of 21 to Ramen who started his career as a school teacher. The parents from both the sides arranged their marriage. Saraswati was living with her in-laws. She was a house wife. She has three sons and one daughter. They are all married and well established in their professional life. Her sons and daughter-in-laws after their father's death somehow captured the whole property and she was pushed out of her own house. Her daughter and son-in-law have taken her responsibility afterwards and meet her every Sunday evening. Saraswati also visits her daughter's house occasionally. It is now really excruciating for her to live a lonely life after long years of togetherness with her companion.

Respondent 4

Brojen Babu (name changed) is a retired police officer and he lives in an old-age home in Guwahati. He has been living here for the last one year. His wife passed away suddenly due to heart-attack one year ago. He has two sons, and both of them are married and now they live outside Assam. Due to a lousy relationship with his daughter-in-law, he does not stay with them. He has been getting pension after his retirement. Every day in the evening he teaches some poor students nearby his old age home without money. He visits friends and relatives every Sunday and spend some time with them. This year in 2018, he went to Kolkata for his eye treatment. Now he feels very lonely due to the absence of his wife.

Conclusion

From the above discussion it is clear that although the proportion of widow is much higher than the widower in North-East India and the country as whole, the proportion of widower has also been increasing. It is further observed that the proportion of widow is lower in North-East India as compared to the national average, and quite contrastingly, while it is declining in the

north-east region, it is rising in the country as a whole during 1991-2011. So far rural-urban disparity in the proportion of widowed population is concerned, while widow population is higher in the urban areas than that of the rural counterparts in north-east region and country as whole, it is lower among the widower population in the urban areas than the rural areas. So far age-specific variation in the proportion of female and male widowed population is concerned, although the proportion increases with the increase in age, the increase has been more pronounced among the widows. When the whole scenario of widow and widower population of north-east region is looked at from holistic perspective, while higher proportion of widow population is considered encouraging due to the prevalence of high life expectancy as compared to widower population, and but prevalence of pathetic living condition among a large segment of them makes the whole situation quite dismaying. It is thus observed that widowhood is considered more as a social evil as compared to the widowerhood in the present society. Hence, efforts need to be made in all sections of the society to develop consciousness against the discriminations generally done to the widowed population. Government intervention to this effect shall also prove effective towards eradicating the same.

References

Ahmad, A., 1999, Social Geography, Rawat Publications, Jaipur, pp. 179-183.

Anji, A. and Velumani, K, 2013, 'Contemporary social position of widowhood among rural and urban area special reference to Dindigul district', International Journal of *Advancements in Research and Technology*, Vol. 2, No. 10, pp. 69-92.

Bhattacharyya, R. and Singh, S., 2017, 'Exclusion (and seclusion): Geographies of disowned widows of India,' *Geo Journal*, DOI 10.1007/5 10708-017-9800-0.

Census of India, 1991, Social & Cultural Table C-1, India.

Census of India. 1991, Social & Cultural Table C-1, for Seven states of North-East India.

Census of India, 2001, Social & Cultural Table C-2, India.

Census of India, 2011, Social & Cultural Table C-2, India.

Census of India, 2011, Social & Cultural Table C-3, India.

Census of India, 2011, Social & Cultural Table C-2 for Scheduled Tribes,India

Census of India, 2011, Social & Cultural Table C-2, for Scheduled Castes, India.

Chandrasekhar, C. and Ghosh, J., 2017,'Widowhood in India', Business Line.

Chen, A., 2008, 'Listening to widows in rural India', Women: A Cultural Review, pp. 311-318. DOI: 10.1080/09574049708578320.

Chen, M. and Dreze, J., 1995,'Recent research on widows in India: Workshop and Conference *Report', Economic and Political Weekly*, Vol. 30, No. 39, pp. 2435-2439 + 2442-2450.

Das, M. and Das, K., 2016-2017,'Patterns of female work participation and related gender disparity among the Hindus, Muslims and Christians of Assam, *North Eastern Geographer*, Vol. 39, No. 1&2, pp. 91-106.

Dreze, J. and Srinivasan, P., 1997, 'Widowhood and poverty in rural India: some inferences from household survey data', *Journal of Development Economics*, vol. 54, pp.217-234.

Jensen, R. T., 2005, 'Caste, culture and the status and well-being of widows in India', *National Bureau of Economic Research*, University of Chicago Press, http: // www.nber.org/ books/ wise 05-1 viewed 1 Nov 2017.

Johnson, E. J. and Shyamala, 2012,'Widow remarriage: A new dimension of social change in *India, International Journal of Humanities and Social Sciences*, Vol.2, No. 3, pp.195-205. viewed on 8 April 2017.

Kar, B. K., 2002, Women Population of North-East *India: A Study in Gender Geography, Regency Publications*, New Delhi, viewed 6 April 2018.

Kar, B. K. and Magar, C., 2015,'Pattern of female literacy in Assam', Dynamics of Gender Disparity

North-East Lens, *EBH Publishers, Guwahati*, pp. 166-185.

Kitchlu, T.N., 1993, Widows in India, S.B. Nangia for Ashish Publishing House, New Delhi, viewed 6 April 2018.

Kivett, V. K., 1978, 'Loneliness and the rural widow,' The Family Coordinator, Vol. 27, No. 4, pp. 389-394.http://www.jstor.org/ stable/583442.

Malik, V., 2013, 'Problems of widow remarriage in India: A study,' Journal of *BusinessManagement & Social Science Research*, Vol.2,no. 2, pp.23-31.

Reddy, P. A., 2004, Problems of Widows in India, Sarup and Sons, New Delhi, pp.116-118+145-150.

Sahoo, D. M., 2014, 'Ananalysis of widowhood in India: A global perspective,' *International Journal of Multidisciplinary and Current Research*, Vol. 2, pp.45-58.

●●●

NGJI, An International Refereed Journal
(NGSI-BHU, ISSN: 0027-9374/2017/1665)
Vol. 64, No. 3-4, Sept.-December, 2018

Urbanization in South and South West Asia Characteristics and Consequences

Ram Bali Singh[1]

Abstract

Forces of urbanization, industrialization and socio-economic transformation seem to be mutually reinforcing. However this has not happened in many developing countries more so in some countries of South and South West Asia. These countries witnessed the evolution and growth of one of the earliest urban-based civilizations during the ancient period and development of processing and manufacturing activities during the pre-colonial period. During the colonial period the spatial system that could develop and the economic structure that could evolve did not conform to the national needs. The rural-agriculture sector was neglected and the urban-industrial sector remained constricted resulting in a dualistic nature of the national space economy. A lopsided pattern of spatial linkages and an unarticulated spatial system strengthened further the forces of dualism. The countries of the South and South West Asia are now implementing development strategies to remedy the situation and achieve the much sought after goal of sustainable urbanization and a balanced spatial distribution of population and development opportunities. The present paper examines the level of urbanization, rate of urban growth and size distribution of urban centers in 10 countries of the South and South West Asia during 1975-2025 and highlights the consequences flowing from the existing pattern with an objective to guide the formulation of future development policies

Keywords: *urbanization urban growth, megacity, informal sector, urban landscape, up-gradation of cities, metropolitanization*

Introduction

Urbanization refers to increase in the proportion of population residing in places defined as 'urban' by the national census to the total population of the economy. Rural to urban migration, natural increase in urban population reclassification of human settlements from 'rural' to 'urban', expansion of urban boundary to include the rural periphery and absorb new settlements within urban limit (in situ urbanization) are some of the factors behind urbanization and urban growth. Process of urbanization involves movement of people out of rural- agricultural

1. Professor (Retd.) and Ex-Head, Department of Geography, Institute of Sciences, Banaras Hindu University, Varanasi-221005, INDIA.

communities to relatively larger non-farm urban communities, making an endeavor to secure employment in non-farm urban sector where wages are supposed to be comparatively higher, where there is likely to be better access to urban services and facilities and there may be greater chances for upward social mobility. Kingsley Davis remarked about six decades before 'Urbanization represents a revolutionary change in the whole pattern of social life. Itself a product of basic economic and technological developments it tends in turn, once it comes in to being, to affect every aspect of existence'.(Davis,1955,p.429). As such urbanization is most often described as a complex and continuous process.

Urbanization is most often considered as a positive factor promoting industrial growth, national economic development, social transformation and national integration resulting from increased connectivity and enhanced spatial interaction. However, the benefits of urbanization and much sought after positive changes in the economy, society and space do not materialize automatically more so in low and middle income economies of Asia and Africa.. Quite often, the forces of polarization and backwash operating in developing countries produce a dualistic space economy characterized by large urban centers and mega-cities as islands of affluence and prosperity (core) amidst sea of poverty and deprivation (periphery). At micro-scale these large urban centers and mega-cities exhibit an assemblage of pockets of riches and abundance along with areas of destitution and deprivation. In South and South-West Asia these urban centers occupied a tiny fraction of the national space and contained less than one-third (32.5%) of the national population nevertheless these centers contributed as much as three-fourths (75.5%) of the GDP of their respective countries in 2010 (ESCAP,2010,p.75). In the above context an attempt has been made in this paper to examine the role of urbanization and urban centers in national development process especially in the developing countries of Asia and Africa; to discuss the characteristics of urbanization and urban centers in South and South West Asia in terms of level of urbanization and rate of urban growth and distribution of urban population in various size-classes of urban centers and thereby bring out the consequences of the present urban pattern for national development process, policy and planning with an objective for promoting a positive, sustainable and growth promoting pattern of urbanization and urban centers

South and South-West Asia.

South and South-West Asia (SSWA), as defined by ESCAP and UN HABITAT in their two successive reports The State of Asian Cities 2010/11 and The State of Asian and Pacific Cities (2015) includes 10 countries namely Afghanistan, Bangladesh, Bhutan, India, Iran, Maldives, Nepal, Pakistan, Sri Lanka and Turkey. The total population of the region was 1847.3 million (2014). India, Pakistan and Bangladesh accounted for about 87 % of the total population of the region. The total urban population of SSWA was 664.4 million of which more than 72% was accounted for by India and Pakistan though the level of urbanization in both the countries was 32.7% and 38.8% respectively. The region is quite diverse in terms of culture, economy and society as well as natural habitat (Table.1) It presents a varied picture as regards climate relief and vegetation. SSWA has been one of the earliest settled regions of the world and has witnessed the rise and evolution of towns and associated urban artifacts more than 4 millennia before in the Indus Valley. It also formed part of several empires with their capital cities, towns, fortresses and palaces which emerged during different periods that followed. There are cities in the region which claim their continuous history for more than two millennia.

Table1: South & South-West Asia: Some Basic Indicators

Countries	GDP/Person Inter.$ (PPP) 2015	Urban (Percent) 2015	Annual Change Urban population 2010-15	HDR 2015	GPI 2016	IMR (Per 1000 live births) 2010-15
Afghanistan	1,947	26.7	3.96	171	160	71.1
Bangladesh	3,607	34.3	3.55	142	83	33.1
Bhutan	8,201	38.6	3.69	132	13	30.5
India	6,162	32.7	2.38	130	141	41.4
Iran	17,251	73.4	2.07	69	133	14.8
Maldives	14,923	45.5	4.49	104	---	9.0
Nepal	2,465	45.5	3.18	145	78	32.4
Pakistan	5,000	38.8	2.81	147	153	69.8
Sri Lanka	10,566	18.4	0.84	73	97	8.2
Turkey	20,438	79.4	1.97	72	145	12.6

Source: a.GDP/Person international $-<data.worldbank.org/indicator/NY.PCAP.CD>; b. Percent urban and average annual rate of change in urban population-UN. World Urbanization Prospects: The 2014 Revision; c.HDR <hdr.undp.org>; d. IMR (Infant deaths per 1000 live births-UN. World Population Prospects: The 2015 Revision, Key Findings and Advance Tables; e. GPI (Global Peace Index) <reliefweb.int/report/world/global-peace-index-2016>

SSWA is the least urbanized region of Asia and the Pacific. With about one third of its population living in settlements defined as urban However the annual rate of change of urban population (2.6%) during 2005-10 was higher than the world (2.2%) and equal to that of Asia and the Pacific. As some countries have experienced high economic growth, the rate of urbanization has been somewhat rapid and is expected to be sustained in future (ESCAP, 2010).

Some basic indicators pertaining to countries of SSWA given in Table-1 show significant inter country variations. The GDP/person of Turkey is more than 10 times higher than that of Afghanistan and more than 3 times of that of India, the demographic giant of the region. The level of urbanization varies from 18.4% in Sri Lanka and 26.7% in Afghanistan to 79.4% in Turkey. Annual rate of change in urban population varies from 0.84% in Sri Lanka to 4.49% in Maldives. As regards HDI and GPI the situation is worst in Afghanistan. Iran and Turkey rank better in human development but rank relatively lower in global peace. Infant mortality rate (IMR) is as low as 8.2 in Sri Lanka and 9.0 in Maldives but is as high as 69.8 in Pakistan and 41.4 in India. Iran, Turkey and Sri Lanka have been grouped in 'high HDI'. Afghanistan has been classified in 'low HDI'. The remaining 5 countries have been included in the 'medium HDI' by the UNDP. The region had 14 cities with population more than 5 million each in 2014 including Delhi and Mumbai with more than 20 million, Dhaka and Karachi with more than 15 million and Istanbul and Kolkata with more than 10 million each.

Urbanization and national development

The level of urbanization is very often regarded as a meaningful indicator of national economic development however divergence of opinion as to the effectiveness and efficacy of urbanization in the overall development process

does exist. On the one hand a great many scholars and statesmen express grave concern over the fast and accelerating pace of urbanization in the developing countries in general and the least developed economies in particular resulting in growth of slums and squalor in the burgeoning urban centers and sprawling megacities. During 1970s and 1980s there has been growing support for the argument that high urbanization rates will retard national development or even plunge certain nations into chaos, as social costs directly attributable to urbanization claim a major part of the scarce investment funds of many developing countries. 'In stead of standing as a symptom of development growth, as it was in the West, urbanization in the Third World is both cause and effect of continued underdevelopment and increasing poverty' (Hagmuller, 1970). The urbanization process in the developing economies has been a focus of growing concern. 'Having neither the economic strength of the advanced capitalist nations nor the systematic planning of the socialism, the Third World has the worst of the other two worlds at least with respect to urban development. Added to this is rapid population growth and the poverty of rural underdevelopment that result in mass migration transfers to the towns and cities. As ever larger numbers of people try to make a living in cities unable to offer either jobs or shelter, new forms of urbanization are emerging out of necessity- cities built substantially by the poor for the poor'(Dwyer, 1975). The Challenge of Slums: Global Report on Human Settlements (UN- HABITAT, 2003) acknowledged that significant portions of the urban population (in developing countries) will be almost completely excluded from industrial growth and the 'formal' sectors of the economy. Hundreds of millions of new urbanites will be involved in the peripheral economic activities of personal service, casual labor, street vending, rag picking, begging and crime. The developing countries in general and the least developed economies in particular are witnessing an increasing concentration of poor in their urban centers, a phenomenon which some scholars prefer to define as 'urbanization of poverty'. 'As the world continues to urbanize sustainable development challenges will be increasingly concentrated in cities particularly in the lower middle income countries where the pace of urbanization in the fastest. Integrated policies to improve the lives of both urban and rural dwellers are needed' (WUP: 2014; Highlights,p.1)

The other group of scholars welcomes the acceleration of the process of urbanization and urban growth regarding it as a signal of enhanced vitality in the space economy and imperative as well as inevitable for the amelioration of the miseries of the rural hapless poor in developing economies. This group strongly believes in the efficacy and inevitability of urbanization. 'Cities have become the major drivers of national economies in the Asia-Pacific.as in other regions. Being highly productive, they make significant contributions to national economies. On the whole, just over 42 per cent of the urban population of Asia-Pacific region contributes 80 per cent of the regions gross domestic product' (ESCAP, 2010/11). The link between urbanization and economic development is clear in Asia, where rapid urbanization has been the major factor behind the growth dynamic, and in the process also contributing to overall reduction in poverty rates (ADB, 2008). In Latin America economic development and urbanization have historically been linked in a process of industrialization and urbanization, even though this has resulted in high degrees of inequality between countries and within countries. In Africa, the link between urbanization and economic development is more tenuous however recent researches suggest a positive link between the two variables in most African countries (Njoh, 2003 and UN-HABITAT, 2008). 'It (urbaniza-

tion) is also generally positive, as it brings a number of fundamental changes, namely : (a) in the employment sector, from agriculture-based activities to mass production and service industries; (b) in societal values and modes of governance; (c) in the configuration and functionality of human settlements; (d) in the spatial scale, density and activities of cities; e) in the composition of social, cultural and ethnic groups; and (f) in the extension of democratic rights particularly women's empowerment'(UN-HABITAT, 2008,p.IX). The first report of the ESCAP and HABITAT entitled The State of Asian Cities 2010/11 took notice of the predominance of the urban informality in the Third World cities but accepted the cities as engines of economic growth and concluded 'synergies between the formal and the informal sectors account for the socio-economic dynamism of Asian Cities….. The informal sector should be supported rather than harassed and play a more positive role in employment generation and housing production' (p.70).

The Executive Director of the UN-HABITAT in his Foreword to the State of African Cities 2010 wrote 'Africa stands to benefit from the rapid expansion of its cities. Urbanization is jump-starting industrialization and the 40 per cent of Africa's population that now lives in cities produces 80 per cent of its GDP'. He went further to caution 'as the urbanization of African poverty makes further progress, the prospect of a dignified and productive life continues to elude the poorest among Africans. More and more Africans are forced into urban informality.' 'Experience shows that across the world, urbanization has been associated with improved human development, rising incomes and better living standards. However, these benefits do not come automatically, they require well-devised public policies that can steer demographic growth, turn urban accumulation of activities and resources into healthy economies and ensure equitable distribution of wealth' (UNEP,2010, p.1). The report further observed 'The unfolding pattern (of urbanization) is one of disjointed, dysfunctional and unsustainable urban geographies of inequality and human suffering, with oceans of poverty, containing islands of wealth. Socio- economic conditions in African cities are now the most unequal in the world. The situation threatens systematic stability, affecting not only the continuity of cities as socio-political human eco-systems but also entire nations' (ibid, p.2). Eastern Africa, with only 25.6 per cent of its population as urban, is the least urbanized region in the continent (40.4 percent urban) and Ethiopia, with 19.5 per cent of its population as urban, is one of the least urbanized countries in the continent. However Ethiopia is urbanizing very fast (4.89 per cent per year) and the present EPRDF government of the country, being aware of the phenomena is making all out efforts to turn urbanization and urban growth in to a positive force to transform rural-agricultural sector, to promote urban-industrial growth and to ensure an equitable and sustainable pattern of development through good (urban) governance and by developing efficient and effective spatial and functional linkages and by building the capacity in the public sector at all levels.

Level of urbanization

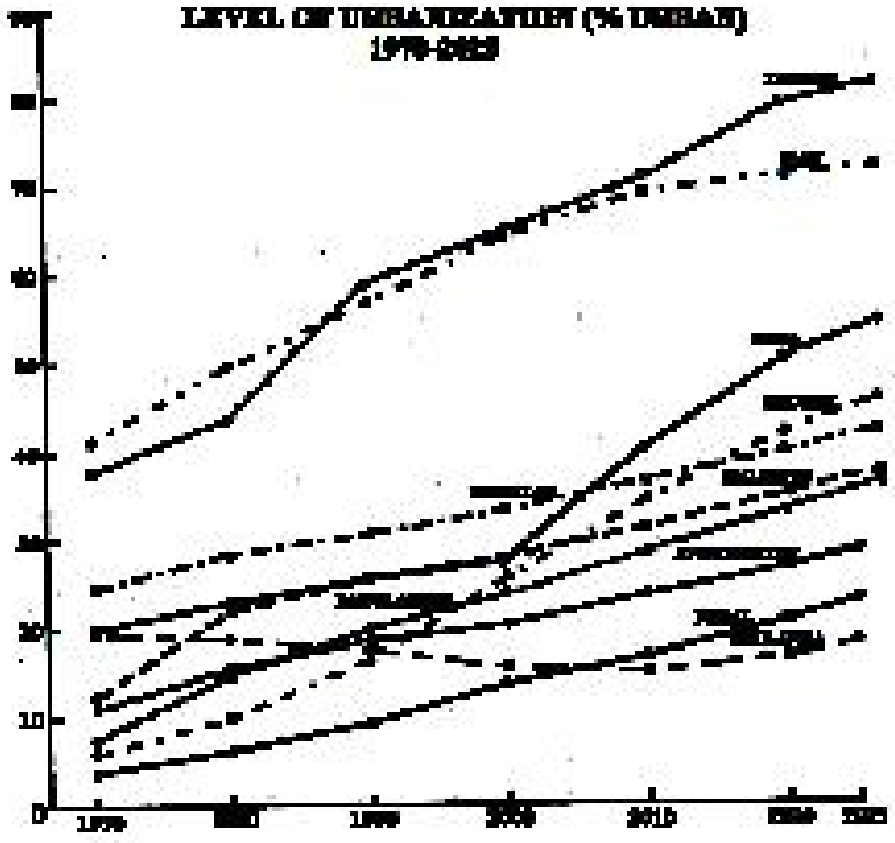
It is usually defined as the percentage of total population residing in settlements classified as urban by the national agency/organization. In this context it is pertinent to mention that the criteria used for classifying a human settlement as 'urban' vary from country to country. Therefore in the present paper the data used by the UN and its agencies have been mostly used. South and South-West Asia is the least urbanized sub-region of the Asia and the Pacific region (Table2). The level of urbanization in South and South-West Asia has been lower than Asia and much lower than that of the world. In this

region one-third of the total population was residing in settlements defined as urban in 2010 as compared to 42.2 percent in Asia and 50.5 percent in the world. By 2020 the South and South-West Asia is estimated to be 37.4 percent urban as compared to Asia being 47.2 percent urban while the world would be 54.4 percent urban by then (Table.2).

Table 2. Asia-Pacific Region: Level of urbanization (% urban)

Regions	1990	2000	2010	2020	Population Urban (thousand) 2014	Rate of Change 2005-10 (%)
World	42.6	46.4	50.5	54.4	3,880,128	2.2
Asia	31.5	36.8	42.2	47.2	2,069,702	2.6
East&North-East Asia	32.2	40.4	50.2	57.3	942,356	3.0
South-East Asia	31.6	38.2	41.8	46.7	294,409	2.8
South&South-West Asia	27.9	30.6	33.3	37.4	664,417	2.6
North&Central Asia	65.4	63.9	62.9	63.6	141,047	0.2
Pacific	70.7	70,4	70.2	70.4	27,473	1.8

Source: United Nations (2010) and Last Column : ESCAP and UN Habitat (2015)



Within SSWA one can visualize significant differences in the level of urbanization in a particular year among the countries and of a particular country in different years (Fig.1). In 1970 the level of urbanization was as low as 4.0% in Nepal while it was 41.2% in Iran, more than 10 times higher. Nepal remained the least urbanized (8.9%) country of the region in 1990 while Turkey overtook Iran to become the most urbanized (59.2%) country. In 2010 Sri Lanka was the least urbanized (15.0%) country of the region while Turkey maintained its highest level of urbanization (70.5%) and, as UN estimates indicate, by 2025 there is likely to be no change in the respective position of both these countries (Turkey and Iran). Most of the countries of SSWA have recorded significant improvement in their level of urbanization during 1970-2010 except Sri Lanka which has shown a relative decline from 19.5% in 1970 to 15.0% in 2010 because of some technical reasons.

As per UN estimate countries of the SSWA are likely to urbanize faster during coming decades. Turkey, Iran, Maldives and Bhutan are expected to gain 43.0, 30.6, 42.1 and 39.4 percentage points respectively during 1970-2025 in their level of urbanization. However there will be a small addition to the total urban population of Maldives and Bhutan. Though Bangladesh (28.4%), India (17.4%0 and Pakistan (17.0%) are likely to gain relatively lower percentage points yet these countries will add a much larger population to their urban total. A lower and somewhat stable level of urbanization in Sri Lanka is due to the definition of 'urban'. In Sri Lanka urban refers to the areas included in cities' administrative boundary. In case Sri Lanka applies the concept of urban agglomeration its urbanization level might be as high as 48%. (Indrasiri, 2005).

Asia and the Pacific is likely to be 51.2% urban by 2040 while SSWA will be 48.6% urban by 2040 and is likely to be majority urban by 2050. Iran (54.3%) and Turkey (52.3%) were majority urban by 1985. Maldives is likely to be majority urban (50.2%) by 2020. Bangladesh (50.5%), Bhutan (51.7%) and Pakistan (52.0%) are estimated to be majority urban by 2040. India is likely to be 50.3% urban by 2050. Remaining three countries of SSWA (Afghanistan, Nepal and Sri Lanka) will remain majority rural by 2050. Iran and Turkey will be more than 83% urban by 2050.Improvement in the level of urbanization of India has been lagging behind some countries in East and South-East Asia namely China, Indonesia and Lao PDR. The level of urbanization in

India, Indonesia, China and Lao PDR in 1950 was 17.0, 12.4, 11.8 and 7.2 percent respectively. It increased to 25.5, 30.6, 26.4 and 15.4 percent in 1990 and 30.9, 49.9, 49.2 and 33.1 percent respectively in 2010. It is estimated to increase to 50.3, 70.9, 75.8 and 60.8 percent by 2050 for India, Indonesia, China and Lao PDR respectively.

Table 3 Level of urbanization and urban growth rate

Countries	Level of urbanization (%)					Urban growth rate	
	1950	1990	2010	2050	1950-90	1990-2010	2010-50
China	11.8	26.4	49.2	75.8	14.6	22.8	26.6
India	17.0	25.5	30.9	50.3	8.5	5.4	19.4
Indonesia	12.4	30.6	49.9	70.9	18.2.	19.3	21.0
Lao PDR	7.2	15.4	33.1	60.8	8.2	17.7	27.7

Source: World urbanization Prospects: The 2014 Revision

As is evident from the table (Table.3) the rate of urban growth has been continuously improving in China, Indonesia and Lao PDR where as it decelerated significantly in India during 1990-2010. However it is expected to undergo remarkable acceleration (about 3.6 times over the previous period) during 2010-2050. In spite of this acceleration in the rate of urban growth the level of urbanization will be lower than China , Indonesia and Lao PDR by 25.5, 20.6 and 10.5 percentage points respectively/

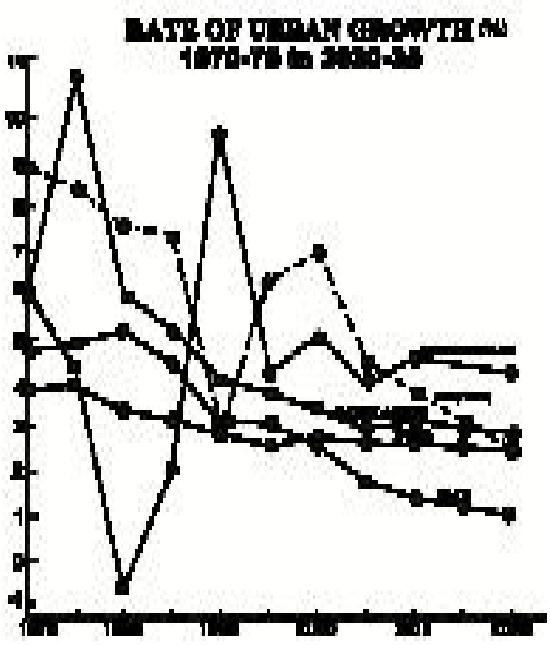
One can find significant regional variation in the level of urbanization within some countries of SSWA. Tehran and Qom provinces of Iran are more than four-fifths urban and in 2016 Tehran alone accounted for more than one-seventh of the total urban population of the country. Southern and eastern parts of Iran are thinly populated and less urbanized. Iran had 8 million cities in 2016. Four of these are located in northern Iran in an arc from Tabriz in the west through Karaj and Tehran to Mashad in the east. Qom, Esfahan and Shiraz are located almost in a straight line towards the south of Tehran and Ahiraz in the south west' In India union territories of Delhi and Chandigarh were more than 97% urban in 2011 while two smaller states of Goa and Mizoram were 62.17 and 52.11 percent urban respectively, Among the other stats Tamilnadu, Kerala, Maharashtra and Gujarat were more than 42 percent urban in 2011 and are expected to be majority urban by 2025. Bihar, Assam and Odisha were less than one-sixth urban in 2011. In India higher level of urbanization is mostly centered around metropolitan areas and megacities. In Pakistan Sindh is the most urbanized with about half of its population living in towns and cities. Karachi, Hyderabad and Sukkur account for three-fourths of Sindh's urban population (Shirazi, 2006). Karachi, the Urbs Prima of Pakistan with 22.8% of the total urban population of the country in 2016, is by far the most important in the economic space of the country. It generates about 1/6th of country's GDP and about 30 % of the industrial output and collects over half of Pakistan's tax revenue. Karachi handles about 95% of Pakistan's foreign trade and houses headquarters of 9/10th of multinationals operating in Pakistan. The North West Frontier Province

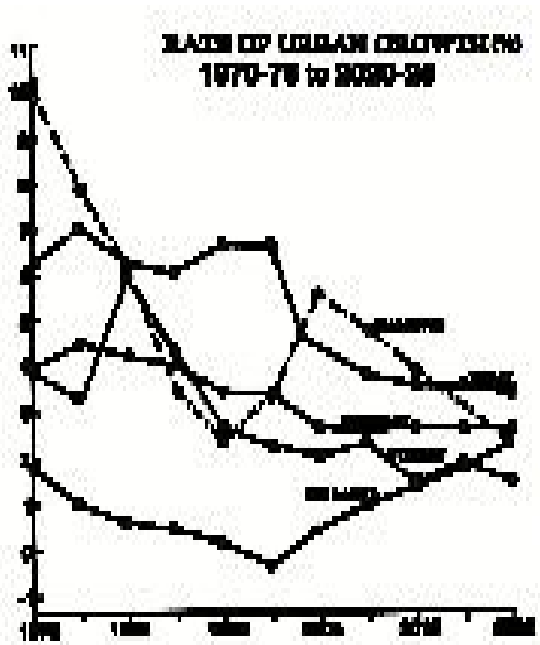
with relatively lower population density is the least urbanized with about one-sixth of its total population living in towns and cities. Dhaka (Bangladesh) and Karachi (Pakistan) dominate the urban demographic landscape of their countries with 32.1% and 228% of the total urban population of their countries respectively. Dhaka Metropolitan Area extends over parts of four districts (Dhaka, Narayanganj, gazipur and Narsingdi) and had an area of 2,161.17sq km. It has 7936.4 persons per sq km. The population density increases to30,748.8 persons per sq km in municipal corporation area. Chittagong and Khula, the other twomillion plus cities ,are located in the south Kathmandu valley in Nepal is host to 5 of country's 58 municipalities and accounts for about one-third of the total population of the country (United Nations, 2010). In Afghanistan Kabul urban agglomeration accounts for more than half of country's urban population. Kabul was Asia's 12th fastest growing city during 1991-2005. Pushpa Pathak is of the view that Kabul grew from 1.6 million in 1995 to 3.7 million in 2010 (United Nations, 2010). Kabul was home to 4.84 million people in 2016.In Turkey the three largest cities namely Istanbul, Ankara and Izmir form a triangle with Bursa located at the centre of the triangle. Antalya, Adana and Gaziantep are located in the south while Konya is a little north but south of Ankara.

Rate of urban growth

Urban growth refers to increase in the number of people who live in towns and cities of an area while the rate of urbanization refers to the

increase in the proportion of urban population over time calculated as the rate of growth of the urban population minus that of the total population. The coefficient of urban growth is calculated as the average annual rate of growth of urban population divided by the average annual rate of growth of total population and the product being multiplied by hundred. In the present paper the rate of urban growth has been accepted as the average annual rate of change of the population residing in settlements defined as urban. The rate of urban growth has been fluctuating in most of the countries of SSWA(Fig.2). India, Iran, Pakistan and Sri Lanka have shown relatively smaller fluctuations in rate of their urban growth. The year 2000 seems to be a turning point in the rate of urban growth of countries of the region. One can easily visualize significant fluctuation in average annual rate of change of urban population in many countries specially Afghanistan, Bangladesh, Bhutan, Turkey and Nepal during 1975-2000. India and Pakistan recorded the least fluctuation in their rate of urban growth since 1975 and the trend is likely to continue up to 2025. Maldives has experienced sharp decline in its average annual growth rate of urban population during 1975-95 while Sri Lanka recorded a slow deceleration during 1975-2000 and is likely to register a secular trend towards a very slow increase during 2000-25. Sri Lanka registered decline in its urban population during 1995-2000. Afghanistan recorded a decline in its urban population during 1980-85. It recorded an annual growth rate of about 2% during 1985-90 and as high as about 9.5% during 1990-95 but less than 4.5% during 1995-2000. To certain extent this fluctuation in average annual growth rate of urban population may be attributed to a disturbed situation prevailing in the country. People moved to areas which they perceived to be relatively safer. Bangladesh experienced a spurt in its average annual rate of growth of urban population from about 6% during 1970-75 to about 11% during 1975-80 but again a sharp decline to about 6% during 1980-85. It may be to some extent attributed to the War of Independence and the resultant political developments and socio-economic transforma-





tion. Since 2005 the difference in rate of urbanization in countries of the region is narrowing down. By 2025 the average annual rate of change in urban population in countries of SSWA is likely to stabilize at a level which may be defined as the South and South-West Asian rate of urbanization. It is much more evident in case of Sri Lanka, Turkey, Pakistan, Nepal and Maldives while it is less apparent in other countries (Fig.2).

Rate of urban growth is an absolute measure of urbanization while the coefficient of urban growth and rate of urbanization are relative measures of urbanization as both take in to account the average annual growth rate of total population as well. Average annual growth rate of total population and of urban population and the coefficient of urban growth for each country of SSWA as well as for the world for two time periods (2000-05 and 2010-15) have been given in the table (Table.3). Coefficient of urban growth for the period 2000-2005 is the highest for Nepal (399.0%) and for three other countries namely Bangladesh, Bhutan and Maldives it is more than 300 percent. These countries have small urban population and a relatively lower level of urbanization and some have pursued the policy of accelerating urbanization to promote national development. The average annual rate of change of urban population has declined in almost all the countries during 2010-15. As a result the coefficient of urban growth has declined, the highest being 295.8% for Bangladesh. The coefficient has increased marginally for India and Sri Lanka as there has been significant decline in the rate of growth of total population in both the countries.

Urban population in city sizes

An analysis of proportion of urban population in different size classes of cities enables one to arrive at some interesting conclusions. In the land-locked country of Bhutan with mountainous terrain and the island country of Maldives the total urban population is accounted for by the cities with fewer than 500,000 persons in 2010 as well as 2025. The total urban population of Bhutan was 253,000 and of Maldives 126,000 in 2010. The total urban population of Bhutan is estimated to be 394,000 and of Maldives 201,000 in 2025. In pal about four-fifths

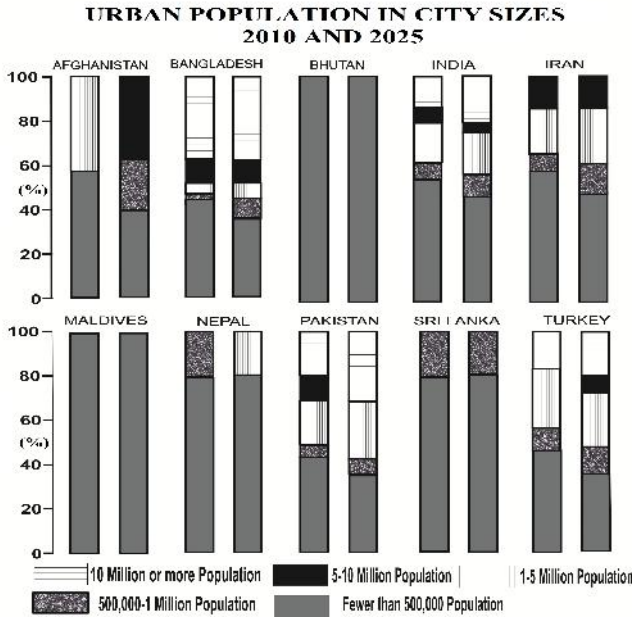
Table 3: SSWA: Growth rate and coefficient of urban growth

World / Countries	Growth rate of Total Population		Growth rate of Urban Population		Coefficient of Urban Growth	
	2000-05	2010-15	2000-05	2010-15	2000-05	2010-15
World	1.22	1.18	2.27	2.05	186.1	173.7
Afghanistan	2.73	3.02	5.23	3.96	191.6	131.1
Bangladesh	1.18	1.20	4.12	3.55	349.1	295.8
Bhutan	2.02	1.46	6.79	3.69	336.1	252.7
India	1.46	1.26	2.67	2.38	182.9	188.9
Iran	1.15	1.27	2.32	2.07	201.7	163.0
Maldives	1.73	1.79	5.69	4.49	328.9	258.8
Nepal	1.05	1.18	4.19	3.18	399.0	269.5
Pakistan	2.07	2.11	2.80	2.81	135.3	133.2
Sri Lanka	0.68	0.50	1.07	0.84	157.3	168.0
Turkey	1.27	1.69	2.31	1.97	181.9	116.6

of total urban population was accounted for by the cities with population fewer than 500,000 and the remaining one-fifth by the capital city (Kathmandu) having a population of 974,000 in 2010.The smaller cities (fewer than 500,000 persons) will have 79% of the total urban population and Kathmandu, With a population of 1,780,000 persons will account foe the remaining 21% of urban population in 2025 as well. The urban landscape of Sri Lanka was dominated by the smaller cities accounting for 78% of the total urban population in 2010 and their share is estimated to decline to 77% by 2025. The remaining urban population was accounted for by the capital city Colombo having a population of 687,000 persons in 2010 and is estimated to have 941,000 persons in 2025. In Afghanistan smaller cities accounted for 58% of the total urban population and the remaining 42% was accounted for by the capital city Kabul (3,052,000 persons) in 2010. The proportion of smaller cities will decline to about 40% in 2025. As many as four cities of 500,00-1,000,000 size class will account for about 23% and the remaining 37% will be accounted for by the capital city Kabul. Afghanistan, especially the capital city Kabul, has experienced rapid growth in its urban population due to political conflict- rural population moving to the relative safety of the capital. Kabul had a population of 1.963 million in 2010 and is estimated to increase to 5.126 million by 2025.Kabul became a million-city in 1990 and will remain the solo representative of the class up to 2025. The urban demographic landscape of Bangladesh,

Pakistan, Turkey and India was somewhat dominated by mega cities in 2010 as they accounted for about 36%, 22%, 21% and 15% of the total urban population of their countries. Their dominance is likely to strengthen further as by 2025 these mega cities will contain about 36%, 34%, 22% and21% of the total urban population of these countries respectively. Bangladesh is likely to witness fast up gradation of smaller cities (<500,000 population) to the next higher size class (500,000-1 million population). The number of latter will increase from 1 to 8 and their share in total urban population from 2% to 8% during 2010 and 2025. Pakistan is likely to have 2 mega cities and 10 other million cities by 2025 but none in 1-5 million population size class The cities of the smallest size class will account for about one-third of the total urban population a loss of about 8 percentage points in their share during 2010 and 2025. In India the share of million cities in the total urban population was 40% in 2010 and is estimated to increase to 46% by 2025. However the share of million cities of 5-10 million size class is likely to decline from 8% to 5% during the same period. Small cities (500,000- 1 million population) are likely to gain in their share of total urban population while smaller cities and towns (<500,000 population) are likely to undergo a loss. In Iran there has been only one city (Tehran) in 5-10 million size class since 1980 and it will remain in the same size class up to 2025. Its share in the total urban population of the country is estimated to be 14% during 2010 and 2025. In turkey Istanbul will be the lone mega city (> 10 million population) and Ankara in the next lower size class (5-10 million population) by 2025 accounting for 22% and 8% of the total urban population respectively. The number of cities in 1-5 million size class will increase from 6 to 9 however their share in total urban population of the country will decline from 24% to 23% during 2010 and 2025. The proportionate share of cities of 500,000-1 million size class and of <500,000 size class in the total urban population of the country will invariably decline in almost all the countries of South and South-West Asia during 2010 and 2025. The distribution of urban population in 5 size classes of cities and towns for the year 2010 and 2025 becomes quite clear from the figure (Fig.3).

An analysis of three size classes of million



cities together enables one to discern a tendency towards increasing concentration of urban population in larger urban agglomerations and regions in many countries of South and South-West Asia. Bhutan, Maldives and Sri Lanka do not have million city. In Nepal the capital city of Kathmandu is likely to attain million city status by 2020. In Afghanistan the share of lone million city Kabul in total urban population of the country is likely to decline from 42% in 2010 to 37% in 2025. In Turkey which is the most urbanized country of the region the number of million cities is estimated to increase from 7 in 2010 to 9 in 2025 and their share in total urban population is estimated to increase from 45% to 53% during the same period. In India and Pakistan the million cities are estimated to gain 6 percentage points while in Bangladesh and Iran they are likely to enhance their share in total urban population by 4 percentage points during 2010 and 2025. In India their share will increase from 40 to 46 percent, in Pakistan from 53 to 59 percent, in Bangladesh from 52 to 56 percent and in Iran from 35 to 39 percent during this period. Pakistan, Bangladesh and Turkey will have more than half of their urban population residing in million cities. Bangladesh will have only 4 million cities accommodating 56% of its total urban population and Afghanistan's lone million city (Kabul) will be accommodating about 37% of the total urban population of the country in 2025.It is evident that lopsidedness in the pattern of urbanization is both size and area specific in many countries of the region. The national governments need to reformulate, wherever it is necessary, their development priorities, transform their system of urban governance and administration and engage all stakeholders to cope with the new forms of urban growth emerging in the region.

Consequences

South and South West Asia is perhaps the most diverse subdivision of the Asia Pacific region in terms of economy, society, culture, physical environment and human settlements. It has been one of the earliest settled regions of the world characterized by the evolution and growth of the earliest urban-based human civilization

during the ancient period. Since then it has witnessed the rise and fall of several empires and kingdoms having their own capitals and strongholds and each one adding in its own way to the complexity of the cultural landscape of the South and South West Asia. The region has been defined as the shatter belt 'a strategically located region characterized by a fragmented political and economic character and differences in physical environment as well as historical, cultural and political patterns and processes' (Cohan,1973). As such the economic space and spatial system is the product of the historical processes operating since millennia in the region and is likely to have varying consequences and policy implication for different countries of the region.

The South and South West Asia is the least urbanized part of the Asia Pacific region with significant differences in the level of urbanization among the countries as well as marked regional variations in level of urbanization within some countries of the region. Nevertheless there has been continuous improvement in the level of urbanization in all the countries of the region except Sri Lanka. The improvement process must be maintained and in some countries needs to be accelerated. Dhaka and Karachi dominate the urban landscape of their respective countries while the Kathmandu valley and Kabul urban agglomeration account for almost one-third and more than half of the total urban population of their countries respectively. The rate of urban growth has fluctuated substantially during 1970-2010 in most of the countries however one can visualize a general decline in rate of urban growth in all the countries during 1975-2010. Since 2005 the difference in the rate of urban growth has been narrowing down and by 2025 it is likely to stabilize at a level which one may define as the South and South West Asia rate of urban growth e.g. India, Pakistan, Bangladesh, Sri Lanka, Bhutan and Maldives. These countries need to escape from this slow down and must adopt a vigorous urbanization policy to speed up the process of urbanization and strengthen rural-urban inter linkages.

An analysis of proportion of urban population in 5 size classes of urban settlements enables one to visualize a diversified pattern. In the island country of Maldives and in a land-locked country Bhutan with mountainous terrain the total urban population was accounted for by small cities and towns in 2010 and the same will continue up to 2025. In Sri Lanka and Nepal small cities and towns accounted for more than three-fourths of the total urban population in 2010 and will be so in 2025 as well. The proportion of urban population in cities with less than a million population varied from 47% in Bangladesh to 100% in Bhutan, Maldives, Nepal and Sri Lanka in 2010 and this proportion is likely to decline in all the countries except in Bhutan, Sri Lanka and Afghanistan by 2925. The number of million cities in the region will increase from 70 in 2010 to 101 in 2025 and of mega cities from 6 to 10 during the same period. As many as 57 million cities and 6 mega cities will be in India alone by 2025.All the million cities taken together will account for 58% of the total urban population in Pakistan, 53% in Turkey 56% in Bangladesh and 44% in India in 2025.Kabul, the lone million city in Afghanistan accounted for 54.6 % of the total urban population of the country in 2016.The mega cities are likely to house more than one-fifth of the total urban population of India and more than one-third in Pakistan and Bangladesh by 2025. This pattern of urbanization is hardly sustainable in many countries of the South and South West Asia.

The differential impact of growing urbanization is highly skewed in favor of million and mega cities as these accommodated 57.8 % of the total urban population of Pakistan, 52.4% of Turkey, 42.1% of Bangladesh and 36% of Iran in 2016. There is need to speed up the process

of rural transformation and urban expansion away from the large urban agglomerations by pursuing a policy of concentrated dispersal of urban functions and facilities. The process is quite challenging. Opportunities exist, nevertheless, for regulating the process by promoting a policy of positive urbanization by adopting and integrated view of the whole spatial system-large inflicted cities, secondary cities, intermediate cities small towns and rural areas. Fortunately there exists already a hierarchy of urban centers albeit an atrophied one having its origin during the period of empires and much later during the colonial period. There is need to develop a well articulated functionally interlinked spatial system integrating the entire national space. There is need to evolve a National Settlement Policy outlining the goal and aims to be achieved, the process of development of a national settlement system and its various components in response to the social and economic goals of national development and the strategy of the spatial distribution and implementation to be pursued to achieve an optimum distribution of population, development opportunities, economic activities and social facilities in the national space economy (Ciborowski, 1979). In other words there is need to formulate and effectively implement a national habitat transformation policy in the overall framework of not just economic and social development but eco development to ensure its sustainability. The task is no doubt stupendous in many countries of the South and South West Asia but none the less imperative.

Concluding remarks

The existing human settlement system in majority of countries of the South and South West Asia is hardly sustainable. Megacities and large urban agglomerations are growing while the secondary cities and towns are languishing and finding it difficult to achieve development goals because of inadequate resources and ineffective organizational structure. As such the urbanization is becoming increasingly concentrated in few cities and regions. The urban landscape is dominated by megacities and other million plus urban centers. The management and financing of these cities and expanding urban region has become a complex challenge for national, regional and local governments and, to some extent, drain on scarce resources. With an objective to achieve the goal of sustainable urbanization and a balanced spatial distribution of population and opportunities the governments of the South and South West Asia need to utilize the national resource and initiatives, to increase regional cooperation and to ensure proper utilization of international assistance to finance viable urban development projects. An urban development strategy based on Public-private-partnership (PPP), Built-operate and transfer (BOT), involvement of all stake holders and civil society groups, NGOs, corporate houses and international organizations may be a better policy option.

References

ADB, 2008, Managing Asian Cities, Asian Development Bank, Manila

Basyal, Gopi Krishna and Narendra Raj Khanal, 2001, of Process and Characteristics Urbanization in Nepal, Research Center for Nepal and Asian Studies, Kathmandu.

Buch, M.N., 1081, India's Urban Future, The Hindustan Times, New Delhi, March 4.

Ciborowski, A., 1979, National Settlement Policy: Specification and Implication, *Habitat International*, Vol. 3, pp.289-297.

Davis, Kingsley, 1955, The Origin and Growth of Urbanization in the World, *American Journal of Sociology*, Vol. 60, No. 5, pp. 427-437.

Davis, Kingsley, 1962, Urbanization in India: Past and Future in Roy Turner (ed,) India's Urban Future, University of California Press, Berkley and Los Angeles.

Govt. of India , 2009, Urban Infrastructure Development Scheme for Small and Medium Towns: An

Overview, Ministry of Urban Development, New Delhi.

Hagmuller, G., 1970, A Noose Around the City, Ceres, Nov.-Dec.

Indrasiri, L. N., 2005, Urbanization and Urban Redefinition- Sri Lanka, Urban Development Authority, Ceylon <www.uda.lk/reports/Urbanization and Urban Redefinition

Mabogunje, Akin L., 1978, Settlement Policies and the Transformation of Traditional Economies, *Habitat International*, Vol.3, pp.407-413.

Montgommery, Mark, Richard Stern, Barney Cohan and H. E. Reed, (2004), Cities Transformed, Earth Scan, London.

Njoh, Ambe J., 2003, Urbanization and Development in Sub-Saharan Africa, Cities, 20, 3 pp.167-174.

Pathak, Pushpa and Dinesh Mehta, 1995, Trends, Patterns and Implications of Rural to Urban Migration in India, Asia Population Studies Series No.138, United Nations, New York.

Pathak, Pushpa and Dinesh Mehta, 1995, Recent Trends in Urbanization and Rural-Urban Migration in India: Some Explanations and Projections, Urban India, 15, pp.1-17.

Singh, J. and Ram Bali Singh,1988, Dimensions and Implications of Urbanization in the LDCs, in Ram Bali Singh (ed) Studies in Environment and Development, Rakesh Prakashan, Varanasi, pp.222-58.

Singh, Ram Bali, 1983, Trends of Urbanization and policy Implications in U. P. Himalaya, in T. V. Singh and J. Kaur (eds) Studies in Eco-development: Himalaya's Mountains and Men, Print House, Lucknow, pp.392-411.

Singh, Ram Bali, 2015, Urbanization in a 'least Developed'Country, *National Geographical Journal of India*, 61, 3, pp.223-38.

U. N., 1976, Global Review of Human Settlements and Statistical Annex, Pergamon Press, London.

U. N. , 2014, World Urbanization Prospects: The 2014 Revision, Highlights, PD. DESA, United Nations, New York.

U. N., 2016, The World's Cities in 2016, Data Booklet, Pd, DESA, United Nations, New York (ST/ESA/SER-A/392).

UNEP , 2011, Annual Report 2010: A Year in Review, UNEP, Nairobi.

UNEP , 2016, UN Environment Annual Report 2016: Engaging People to Protect the Planet,, UNEP, Nairobi.

UN-HABITAT, 2003, The Challenge of Slums: Global Report on Human Settlements, UN-HABITAT, Nairobi.

UN-HABITAT, 2008, State of World Cities, Cities for All: Bridging the Urban Divide, Earth Scan, London.

UN-HABITAT, 2009, Planning Sustainable Cities: Global Report on Human Settlements, Earth Scan, London.

UN-HABITAT, 2010, State of African Cities: Governance, Inequality and Urban Land Markets, UN-HABITAT, Nairobi.

UN-HABITAT, 2014, State of African Cities 2014, Re-imaging Sustainable Urban Transition, UN-HABITAT, Nairobi.

UN-HABITAT, 2016, World Cities Report 2016, Urbanization and Development: Emerging Future, UN-HABITAT, Nairobi.

●●●

NGJI, An International Refereed Journal
(NGSI-BHU, ISSN: 0027-9374/2017/1669)
Vol. 64, No. 3-4, Sept.-December, 2018

Population and Sustainable Development A Contextual Debate

Arun Kumar Singh[1]

Abstract

An unprecedented population growth, economic development and environmental change are the hallmanes of the last century. Two billion people have been added in the last 25 years and the world population has moved from 5.3 billion in 1990 to 7.3 billion in 2015. Three countries (China, India and the USA) account for 40 percent of the world population. Startling fact is that the gap between India and China has squeezed and the gap between India and the USA has widened. India with 2.4 percent of the land and more than one sixth of the world population is all set to surpass China by 2030. India is one of the fastest growing economies in the world and the changing consumption pattern of natural resources like air, water and soil has jeopardized our natural habitat and there is a need to address the issue on sustainable basis taking into account indigenous knowledge and expertise. Looking at these issues, the paper is organised into four sections. First section is introductory dealing with the population issues at different scales with India in focus. Second section highlights the population growth and consequent environmental issues. The third section initiates the debate relating to population-environment-development interface and the focus shifting from environmental conservation to human well-being and the last section deals with constitutional bases of sustainable development and operational model for implementation of India's population policy at grass root level. The analyses based on secondary data, international and national reports.

Keywords: *population growth, environmental issues, sustainable development, nexus, stakeholders, NPP2K.*

Introduction

The twentieth century has witnessed an unprecedented population growth, economic development and environmental change. In the last hundred years (1900-2000) world population grew from 1.6 billion to 6.1 billion persons (United Nations, 2001). Two billion people have been added in the last 25 years and the world population has moved from 5.3 billion in 1990 to 7.3 billion in 2015. Although population growth rates have slowed down, the world's population is still growing by an additional 81 million people per year. By 2030 the global economy will need to support approximately 8.4 billion people.

1. Professor of Geography (MMV) Banaras Hindu University, Varanasi-221005, India

Table 1: World population by major areas

Area	Population (million)		Distribution of population (%)	
	2015	2030	2015	2030
World	7 324.8	8424.9	100.0	100.0
Africa	1 166.2	1 634.4	15.9	19.4
Asia	4 384.8	4 886.8	59.9	58.0
Europe	743.1	736.4	10.1	8.7
Latin America and the Caribbean	630.1	716.7	8.6	8.5
N.America	361.1	403.4	4.9	4.8
Oceania	39.4	47.3	0.5	0.6

Source: World Population Prospects: The 2012 Revision - Extended Dataset (United Nations publication, Sales No. 13.XIII.10).

With the exception of Europe, where total population is projected to decrease by slightly less than 1 per cent by 2030, all other regions are projected to grow by at least 10 per cent over the next 15 years. Africa, the least developed continent, will account for more than 40 per cent of the absolute increase in population and by 2030 nearly one have fifth of the world's total population.

Then most populous countries of the world account for around 60 percent of the world population and the three demographic giants China, India and the United States of America account (USA) for 40 percent of the world population. Startling fact is that the demographic gap between India and China has squeezed from 238 million in 2001 to 131 million in 2011 whereas the gap between India and the USA has widened from 741 million in 2001to about 902 million in 2011. United Nations (2011) estimates that the world population has increased at an annual rate of 1.23 percent during 2001-2010 and during the same period China has recorded much lower growth rate (0.53 percent) as compared to India (1.64 percent during 2001-2011).

Country level population projections provide important insights regarding the degree to which projected demographic changes will be different in different parts of the world. Continued population growth in many less developed countries, driven by persistent high fertility, will make it harder for those governments to eradicate poverty and inequality, combat hunger and malnutrition, invest in education and health, improve access to basic services, plan and develop cities, protect local ecosystems and promote peaceful and inclusive societies (United Nations 2015). At the other end of the spectrum, fertility is already below replacement level in developed countries which are likely to experience both significant population ageing and absolute decline in their population over the next 15 years, creating a different set of opportunities and challenges. Accordingly, the governments have crafted a range of population policies to address these diverse issues in the last fifty years. In developing countries, population policies mainly focus on controlling birth rate and reducing family size, reproductive health programme, improving women's status and increasing their role in deciding reproductive behavior. Whereas in developed countries like Japan and parts of Europe, the focus is on promoting gender equality at the workplace, easing out the burden of child bear-

Table 2: Population growth in India (1901-2011)

Census Year	Population (persons)	Decadal growth		Average annual exponential growth rate	Progressive growth rate over 1901
		Absolute	Percent	Percent	Percent
1901	23,83,96,327				
1911	25,20,93,390	1,36,97,063	5.75	0.56	5.75
1921	25,13,21,213	-7,72,177	-0.30	-0.03	5.42
1931	27,89,77,238	2,76,56,025	11.00	1.04	17.02
1941	31,86,60,580	3,96,43,342	14.22	1.33	33.67
1951	36,10,88,090	4,24,27,510	13.31	1.25	51.47
1961	43,92,34,771	7,81,46,681	21.64	1.96	84.25
1971	54,81,59,652	10,89,24.881	24.80	2.20	129.94
1981	68,33,29,097	13,51,69,445	24.66	2.20	186.64
1991	84,64,21,039	16,30,91,942	23.87	2.16	255.05
2001	1,02,87,37,436	18,23,16,397	21.54	1.97	331.52
2011	1,21,01,93,422	18,14,55,986	17.64	1.64	407.64

(Source: censusindia.gov.in/2011-prov-results/data.../india/Final_PPT_2011_chapter3.pdf accessed on 7th July 2018 11:00 am)

ing through various interventions and safety and security to the aged population.

The population of India in the beginning of 20th century was 238.4 million and in the last one hundred and ten years (1901-2011) it has increased by more than four times to reach 1210 million.

Interestingly, in the first half of the century, it recorded one and half times increase while in the second half of the century the growth of India's population was more than three fold. One of the significant features of the decade 2001-2011 is that it has added lesser number of people as compared to other decades (except 1911-1921).This implies that as a result of the combination of population momentum and somewhat impeded fertility, although India continues to grow in size but the net addition has shown a decreasing trend. It is significant that the percentage decadal growth during 2001-2011 has registered a sharpest decline (17.64 per cent) since independence. Similarly, the average annual exponential growth rate during 2001-2011 has also declined to 1.64 percent which is lowest in the last fifty years (1961-2011).

In India, rapid population growth and expansion of developmental activities have greatly aggravated resource depletion and environmental degradation. However, the extent of environmental degradation varies over space. For example, poverty is considered to be the major cause of depletion of natural resources and environmental degradation in Africa (Kalipeni 1992), but in the case of Asia-Pacific region both rapid population growth and continued economic development are found to be the major causes of environmental pollution (Duraiappah 1996; Dewaram 2007) and in the case of the main cause of environmental degradation is the consumer culture and lavish lifestyle leading to high

carbon emissions. In India because of our commitment for economic development, there has been less priority given to environmental issues in spite of the fact that different parts of the country are facing variety of environmental problems (Lakshmana 2013). The central, eastern and north-eastern regions of India have large populations with higher level of poverty (40% in central and 35% in eastern regions) and overuse of natural resources like forest, water, and land (Scott et al. 1997) but there is hardly any sustainable strategy for the conservation of natural resources and protection of the environment in these regions. On the other hand, comparatively low population growth and higher levels of economic development also cause environmental stress in southern and western regions (Kumar 2001). Although the northern, western, and eastern regions have registered growth rates below the national average, they exhibit a high degree of environmental degradation. Population characteristics like proportion of population in different economic groups, population pressure and population density affect the quality of environment (National Council of Applied Economic Research 2011).The overall population pressure in the eastern region is acute, and the relationship between population and environmental decay is very high to compared other regions of India. The population density in the southern and western regions is also high, but second only to the eastern region. In absolute terms, the north-eastern region has comparatively lower population density. This region is relatively underdeveloped, and highly forested, with little population movement because of insurgency problems.

Population growth and environmental issues

The growing population and rising per capita consumption lead to depleting natural resources on which the livelihood of present and future generation depends and degrading environment which determines the quality and general well being of the society. The relationship between population growth, resource depletion and environmental degradation has been a matter of debate for decades. The argument has been between those who consider people's numbers as the main culprit and those who place more blame on economic development, non-sustainable agricultural and industrial practices and excessive and wasteful consumption. However, the fact remains that the growing population and consequent demand for food, energy, and housing have considerably altered land-use practices and severely affected the state of environment. Poverty is said to be both cause and effect of environment degradation. Poorer people are forced to use common property resources for their day to day requirements.

Over the past fifty years, while India's total population increased by about 3 times, the total area of land under cultivation increased by only 20.27 percent from 118.75 million hectares in 1951 to 141.23 million hectares in 2011(Agricultural Statistics 2016). Such expansion has taken place over forest and grazing land. The extent of agricultural intensification is characterized by increase in cropping and irrigation intensity and higher use of chemical fertilizers, pesticides and insecticides. The process of agricultural intensification is leading to the land degradation, overexploitation of underground water resources, increased use of chemical fertilizers leading to eutrophication , water pollution and reductions in biodiversity. There are various estimates regarding degraded land in India and it varies from 53.00 million hectares (NRSA) to high as 187.70 million hectares (NBBSS&LUP 1994). Out of the total geographical area of 328.7 million hectares, 175 million hectares are considered to be land-degraded area. Water and wind erosions are the major contributor of 141.3 million hectares to soil erosion, with other factors like water log-

ging 8.5 million hectares, alkali soil 3.6 million hectares, acid soil 4.5 million hectares, saline soil including coastal sandy areas 5.5 million hectares adding to the in situ degradation. For achieving and maintaining food security, sustainable forestry, agricultural and rural developments controlling of land/soil erosion is very much necessary.

Forests are an important natural resource of India. They play an important role in enhancing the quality of environment by influencing the ecological balance and life support system. They also play an important role in moderating the influence on floods and thus protecting the soil erosion. However, with increasing population, expanding settlements followed by increasing demand for food, fuel, building materials and other developmental activities, there has been shrinkage of the floral and faunal coverage of the country. The total forest area in 2008 was 69.97 million hectares, i.e., 22.9 percent of the total geographical area, as against the stipulated target of 33 percent of the National Forest Policy 1988. With the increasing population the per capita availability of forests in India has continuously come decreased 0.124 hectares in 1960-61 to 0.064 hectares in 2010-11 as against the world average of 0.64 hectares (Agricultural Statistics 2016). Biodiversity has direct consumptive value in food, agriculture, medicine, industry etc. It also has the aesthetic and recreational value. The greatest threat to biodiversity is the destruction of their habitat. India is one of the 12 mega-biodiversity countries of the world with around 46,000 plant species and 81,000 animal species accounting for about 7 percent of the world's flora and 6.5 percent of the world's fauna (Nagdeve 2005). It is estimated that in the worldwide perspective slightly over 1000 animal species and sub-species are threatened with the extinction rate of one per year, while 20,000 flowering plants are thought to be at risk (Compendium of Environment Statistics, 2000). Increasing demand for industrialization, urbanisation, housing and infrastructure sector is converting agricultural land to non agricultural use. Consequently the average size of land holding has come down from 2.82 hectare (1970-71) to 1.16 hectare (2010-11).

Per capita water availability and supply is an indicator of social well-being as well as the quality of life. The available water in India has declined drastically over the past several decades from about 5,177 CM per capita per year in 1951 to 1,820 CM in 2001 and is expected to further come down to 1401 in 2025 and 1,191 CM by 2050 AD (CWC 2011).This continuous decline is mainly because of continuous increase in population, changing life style and consumption pattern. At the individual level at least 20 lpcd is required for survival and 60 lpcd is needed to allow sufficient water for essential domestic needs like washing, food preparation, cooking, cleaning, laundry and personal hygiene (UN-HABITAT 2002). But micro level empirical studies reveal that there are areas with surplus of water and the areas deficient of water because of faulty distribution and management system.

The number of registered motor vehicles in India provides one useful indicator of expanding consumption and economic growth. The total number of registered vehicles in India has increased from 3 million in 1950-51 to 55 million in 2001-2002, 141.8 million in 2011-12 and is likely to be 230 million in 2016-17 (Ministry of Road Transport and Highways 2015). The population of India in 2000 was just over 1 billion, and there were about 10 motor vehicles for every 1000 people, or a total of roughly 10 million motor vehicles in the country. In 2020, the population of India will be about 1.3 billion, and there will be about 44 motor vehicles for every 1000 people. The increasing number of vehicles in the country produces more fuel consumption, air pollution, traffic jams and demands for road construction--often at the cost of agricultural land.

There is very little empirical information available on carbon emissions in Indian cities. Chopra (2016) estimates on per capita basis, India is a small emitter of carbon dioxide. In 2009, IEA estimated that it emitted about 1.4 tons of gas per person, in comparison to the USA's 17 tons per person, and a world average of 5.3 tons per person. Based on a cursory examination of the per capita carbon emissions across metropolitan and non-metropolitan cities, we find that the average per capita carbon emissions are higher in the metropolitan cities of India (being 1.19 tonnes per capita) as compared to the non-metropolitan cities and the national average(0.93 tonnes per capita). This is because larger cities have more industries and other polluting activities such as emissions from public and private transport. The illness and pre-mature deaths due to ambient suspended particulate matter (SPM) in the air in mega cities of Kolkata, Chennai, Delhi and Mumbai have risen significantly in recent years (Nagdeve 2005). Similarly, when fuels such as wood, crop residues, animal dung, and low-quality coal are burn indoors using inefficient stoves and poor ventilation, they can cause respiratory diseases, and blindness.

Population-environment-development interface

Looking at the global population growth and emerging environmental issues in the second half of the 20th century Paul R.Ehrlich (1968) has rightly remarked that 'Population growth, along with over-consumption per capita, is driving civilisation over the edge: billions of people are now hungry or micronutrient malnourished, and climate disruption is killing people. Stockholm Conference (1972) considered people as the most precious as they propel social progress, create social wealth, develop science and technology and continuously transform the human environment. Bucharest Conference (1974) examined the interrelationships of population, natural resources and environment and initiated the socially relevant issues like poverty, food versus feed controversy, food self-sufficiency and security. The discussion on resources and environment covered the resource base, environmental degradation and non-renewable resources. The United Nations Conference on Environment and Development, held at Rio (1992) was a milestone in the evolution of an international consensus on the relationships between population and environment, based on the concept of sustainable development. Since then different scholars have come up with their own definitions of sustainable development most acceptable among them is the one given in Brundtland Report (1987) : 'Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs'. Core of the concept remains as improving human well-being, by alleviating poverty, increasing gender equality, improving health condition and stewardship of the natural environment. If we do not put the human population at the core of the sustainable development agenda, our efforts to improve human well-being and preserve the quality of the environment will fail.

Since then, sustainable development is taken as a constructive alternative to the dilemma of economic growth versus environmental protection taking into account social considerations (Fig.1). International Conference on Population and Development at Cairo in 1994 noted "population, poverty, patterns of production and consumption and the environment are so closely interconnected that none of them can be considered in isolation".

Constitutional bases of sustainable development: Indian context and initiatives

The Constitution of India and its relevant amendments reinforce the policy and legal basis of sustainable development. The Preamble of Indian Constitution promises to all Indian citi-

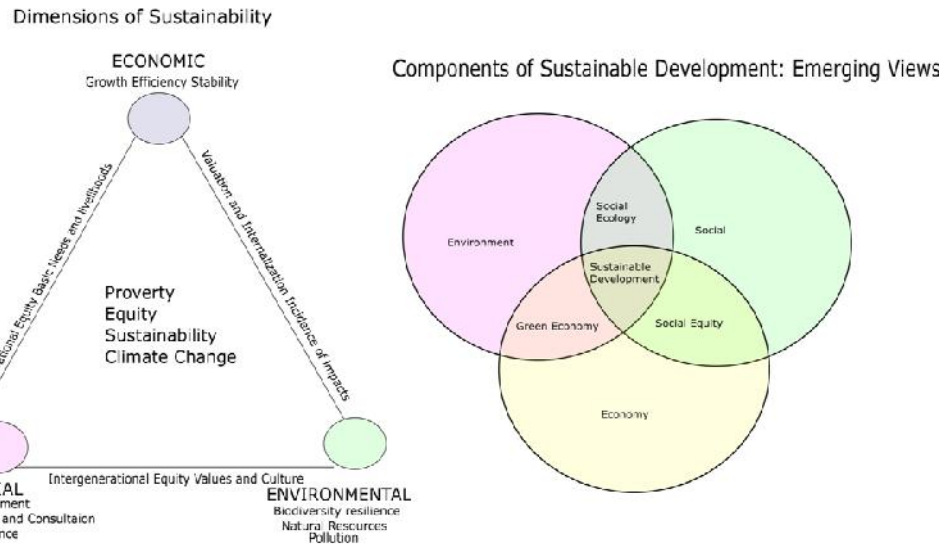


Fig. 1 Dimensions and components of sustainable development

(Source: Based on Mathur 2013)

zens justice (social, economic and political), equality of status and opportunity and the dignity of the individual. Similarly, the essence of sustainable development is embedded in the fundamental rights, which lay down the framework for social justice in India. The article 21 conferring the Right to Life has been subject to the broadest interpretations by the judiciary to encompass right to clean environment, right to livelihood, right to live with dignity and a number of other associated rights. Directive Principles of State Policy, often referred to as the 'conscience' of the Indian Constitution are intended to ensure 'distributive justice' and that political democracy in India is accompanied side by side with social and economic democracy. It also directs the state to protect and improve the environment and safeguard the forests and wildlife.

The National Environmental Policy (NEP) 2006 articulates the spirit of 'sustainable development'; it states that only such development is sustainable, which respects ecological constraints and the imperatives of social justice.

The then Indian Prime Minister Mrs. Indira Gandhi in Stockholm Conference (1972) categorically said that the poverty and degraded environment are closely inter-related, especially in an area where people depend for their livelihoods primarily on the indigenous natural resource base of their immediate environment. Restoring natural systems and improving natural resource management practices at the grassroots level are central to a strategy to eliminate poverty and strategy of sustainable development. Removal of poverty is therefore a prerequisite for the protection of the environment. While conventional economic development leads to the elimination of several traditional occupations, the process of sustainable development, guided by the need to protect and conserve the environment, leads to the creation of new jobs and opportunities for the reorientation of traditional skills to new occupations. Women, while continuing to perform their traditional domestic roles, are increasingly involved in earning liveli-

hoods. In many poor households they are often the principal or the sole breadwinners. A major thrust at the policy level is necessary to ensure equity and justice for them. Literacy and the basic education are essential for enabling the weaker section of the society to access the benefits offered by development initiatives and market opportunities. Basic education is therefore a precondition for sustainable development. Schumacher (1974) considers: 'Education as the greatest resource as it helps in transmitting the ideas of values and ethos. Basic education which promotes functional literacy, livelihood skills, understanding of the immediate environment and values of responsible citizenship is another precondition for sustainable development.' The empowerment of women and girls need to be supported by the interventions to improve their access to basic and higher education, training and capacity building.

The integration of agriculture with land and water management, and with ecosystem conservation is essential for both environmental sustainability and agricultural production. An environmental perspective must guide the evaluation of all development projects, recognizing the role of natural resources in local livelihoods. This recognition must be informed by a comprehensive understanding of the perceptions and opinions of local people about their stakes in the resource base.

The strong relationship between health and the state of the environment is quite evident. It calls for greater emphasis on preventive and social medicine; and, on research in both occupational health and epidemiology. Most of the developing countries are repositories of a rich tradition of natural resource-based health care. This is under threat because of encroachment by the modern mainstream medicine and the degradation of the natural resource base. Traditional medicine in combination with modern medicine needs to be promoted while ensuring conservation of the resource base and effective protection of the intellectual Property rights of traditional knowledge. Developing countries should also strive to strengthen the capacity of their health care systems to deliver basic health services and to reduce environment-related health risks by sharing of health awareness and medical expertise globally.

India's population policy: Quest for sustainable development

India has the distinction of being the first developing country to adopt a well defined population policy way back in 1952 with the objective of reducing birth rates by focusing mainly on contraception, abortion and sterilization. However, in the late 20th century it was realised that population policy of any country should be a comprehensive strategy for overall improvement of social, economic and demographic fabric of the nation. Moreover, population is not merely about numbers but about the health and quality of life of people in general and women in particular. Mrs.Gandhi(1980) rightly remarked, “If there is any chance of children dying more, then people will not be willing to risk that. So, they must be ensured better health, education, and, of course, even employment later on for sustainability of the society. It is part of national planning as a whole” (Chhabra 1981).

The last decade of 20th century witnessed changes in the philosophy of family welfare policy and programme by introducing the components of sustainable development like health care, primary education and involvement of weaker section of society in the decision making process through 73rd Eonstitutional Amendment Act. Cairo Conference (1994) advocated for the advancement and protection of women's human rights in the government efforts to address population and development issues. This also resulted in the Reproductive and Child Health (RCH) Programme, which was launched in 1997 to promote essential and emergency

obstetric care as well as improved immunization efforts. Thus, at the grass root level equity, equality and empowerment became reality.

In this context, the new National Population Policy 2000 (NPP 2K) happens to be a document addressing the population problems by taking into account the related issues like child survival, maternal health, women empowerment and employment and contraception. The policy has well spelt immediate goal (to provide integrated service delivery for basic reproductive health and child care to all), mid term goal (to bring total fertility rate to the replacement level) and long term goal (to achieve population stabilization by 2045) The operational strategies and strategic themes of the policy emphasised decentralized programme implementation based on the assessment of community needs and local contexts. The operational strategies outlined in the policy envision a decentralized, integrated approach to health service delivery implemented by local institutions like the Panchayati Raj Institutions (PRs) and village self-help groups. The policy also lays emphasis on information, education and communication services, i.e., using public media and other tools to increase knowledge and awareness of the need for family planning and the options available to clients.

Operational framework refers to the range of activities in a socio-organizational set-up. Usually two approaches are adopted in the population policy implementation context. The first one is the target based which was in practice before 1996. The second approach is beneficiary based where the focus is on meeting the basic health and family welfare needs of the people in a cost effective, cost efficient and operationally feasible manner. A diagrammatic model presented here (Fig. 2) follows the beneficiary based approach and starts with the married woman being in the focus as she enters the socially recognized, sexually active reproductive

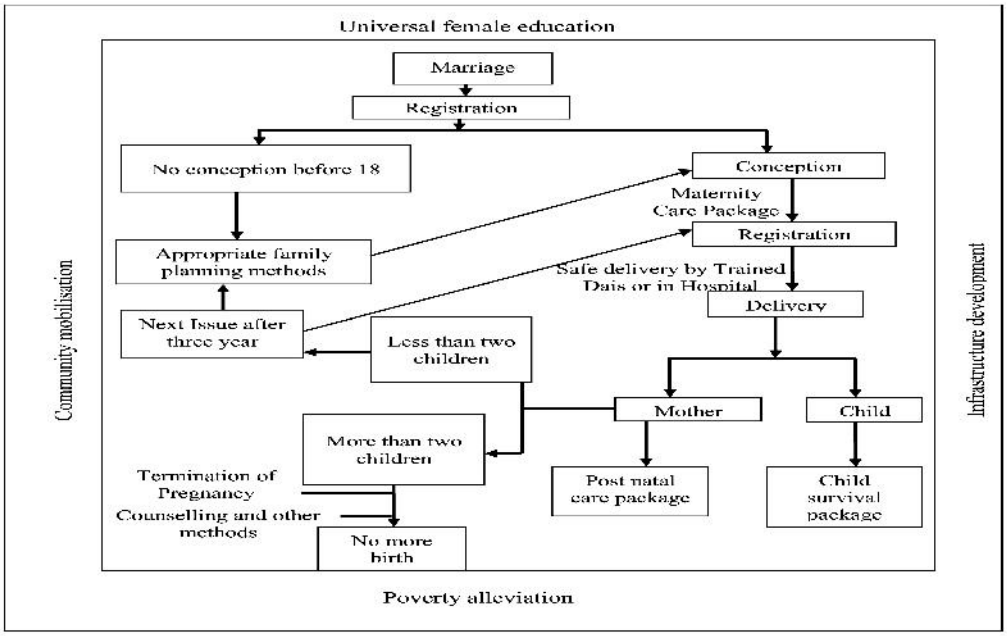


Fig. 2 Population Policy inphimenrion : The beneficiary approach

(Source: based on Ranjan and Dass 2005)

life and then moves to different stages of production in course of giving birth to a child. The operation framework recognizes two sets of interventions, i.e., specific interventions and creating enabling environment. In both the cases the key issues are accessibility, availability and acceptability of the services by the people (Singh 2012).

Concluding Remarks

Unprecedented population growth, unabated economic development, changing consumption pattern and consequent environmental change have put the survival of human society at stake. Two billion people have been added in the last 25 years and the world population has moved from 5.3 billion in 1990 to 7.3 billion in 2015. India with 2.4 percent of the land and more than one-sixth of the world population is all set to surpass China by 2030. India is one of the fastest growing economies in the world and the changing consumption pattern of natural resources like air, water and soil has jeopardized its natural habitat. There is a need to address the issue on sustainable basis taking into account indigenous knowledge and expertise. India has the distinction of being the first developing country to adopt a well defined population policy since 1952 with the objective of reducing birth rates mainly through contraception, abortion and sterilization. However, in the late 20th century it had to shift the focus of population policy towards a comprehensive strategy for overall improvement of social, economic and demographic fabric of a nation. National Population Policy 2000 (NPP 2K) is a documentary evidence which clearly spells out immediate, mid-term and long term goals at a level consistent with the requirement of sustainable economic growth, social development and environmental protection. The proposed operational framework highlights the synergy and convergence of initiatives and interventions of various stakeholders. But to what extent these efforts have been successful at grass root level can only be seen through involvement of the local people at the grass root level to fulfill the philosophy of 'think globally and act locally' and evolving a continuous monitoring mechanism.

References

Census of India, 2011, Size, Growth Rate and Distribution of Population, Available on censusindia.gov.in/.../india/Final_PPT_2011_chapter3.pdf accessed on 7th July 2018 11:00 am.

Central Water Commission, 2011, Water Resources at a Glance 2011 Report CWC, New Delhi Available on http://www.cwc.nic.in and accessed on 14th July 2018.

Chhabra, Rami, 1981, "Population Policy in India: Two Comments" *Population and Development Review*, 7(1):pp 168-171.

Chopra, R.,2016, "Environmental Degradation in India: Causes and Consequences" *International Journal of Applied Environmental Sciences*,11(6): pp 1593-1601.

Dewaram, A.N., 2007, "Population Growth and Environmental Degradation in India" *Asia Pac J Environ Dev*, 14: pp 41-63.

Duraiappah, A., 1996, "Poverty and Environmental Degradation: A Literature Review and Analysis [Internet]. CREED Working Paper 8, Available on http://www. prem-online.org/archive/17/doc/creed08e.pdf accessed on 25th June 2018.

Ehrlich,Paul R., 1968, Population Bomb, Sierra Club, *New York*.

Govt. of India, 2016, Agricultural Statistics at a Glance 2016,Ministry of Agriculture and Farmers Welfare Department of Agriculture, Cooperation and Farmers Welfare Directorate of Economics and Statistics, New Delhi.

Kalipeni, E.,1992, "Population Growth and Environmental Degradation in Malawi", Available on http://www.ncbi.nlm.nih.gov/pubmed accessed on 23rd June 2018.

Kumar, P., 2001, "Environmental Degradation in Rural Areas: Problems and Suggestions" *Yojana*, 45:pp 44-49.

Lakshmana,C.M., 2013, " Population, Development

and Environment in India" *Chinese Journal of Population Resources and Environment*,11(4) pp 367-374.

Mathur, Ritu, 2013, India's Sustainable Development Challenges Available on www.teriuniversity.ac.in/mct/pdf/.../Indias_Sustainable_Development_Challenges.pdf accessed on 25th July 2018.

Ministry of Road Transport and Highways, 2015, Vehicular Population per 1,000 Population and per 100 kms of Road Length, Available on https://data.gov.in/catalog/road-transport-year-book-2013-14-and-2014-15 accessed on 20th July 2018.

Nagdeve,D.A., 2005, "Population Growth and Environmental Degradation in India",Available on paa2007.princeton.edu/abstracts/7192 accessed on 20th May 2018.

Ranjan, A. and Dass,I.,2005, Decentralised Planning for Population Stabilisation, Population Resource Centre, Madhya Pradesh, Bhopal.

Schumacher, E.F., 1974, Small is Beautiful, Sphere Books Limited, London.

Singh, A.K., 2012, "India's Population Policy: Operational Framework for Implementation" In T.D.Singh et. al (ed.)Population, Development and Environment: A Contemporary Debate, pp 459-476,Concept Publishing House New Delhi.

United Nations,2001, World Population Monitoring, U.N. Publications, *New York*.

United Nations,2015, Integrating Population Issues into Sustainable Development (A Concise Report), Department of Economic and Social Affairs, *New York*.

UN-Habitat, 2002, Water and Sanitation in Third World Cities, Earth Scan Publications Limited, London.

World Commission on Environment and Development,1987, Our Common Future. Oxford, United Kingdom, and New York: Oxford University Press.

●●●

NGJI, An International Refereed Journal
(NGSI-BHU, ISSN: 0027-9374/2017/1684)
Vol. 64, No. 3-4, Sept.-December, 2018

Resource Linkages to Poverty among Scheduled Castes in District Ghazipur, UP: A Geographical Perspective

Ajay Raj Mridul[1] and Anand Prasad Mishra[2]

Abstract

Poverty as complex social phenomenon has multi-dimensional linkages towards assets and resources. Resources are the major geographical elements that shaped and reshaped the pattern of poverty in under-developed regions. In traditional and historically graded society uneven distribution and lower reach of resources to Scheduled castes people impacted poverty in a greater way. It needs in-depth investigation that established proper linkages in between resources and poverty. Study of resource and poverty relationship in hierarchal and exploitative structured society is more significant in order to draw logical conclusion on poverty. In present research authors tried to find out relationship between resource distribution, its reach and human poverty for Scheduled Castes (SCs) population. The present attempt by authors is based on primary data that collected through field observation with the help of scheduled questionnaire.

Introduction

Knowledge is more powerful weapon of human which provides way to exploit the natural resources and cumulative knowledge enhanced the level of production with more output. "Human beings and their cumulative knowledge in an integrated way frame the organizational network of population which have shape and reshape of social structure and its ideological orientation. The level and storage capacity of cumulative knowledge play a major role in the process of resource evolution and development. Population is a factor for all types of cumulative knowledge from generation to generation" (Zimmerman, 1944). Resources have the capacity to fulfill human necessities. Increasing knowledge and technological integration evolve new capability to use natural materials and thus useless materials become resources. So the resources are the man-made phenomenon as Rees (1985) observed, "resources are defined by society not by nature". The development and richness of human civilization in particular time of

1. PDF-ICSSR, Department of Geography, Banaras Hindu University, Varanasi- 221005, Email- mridular.bhu@gmail.com
2. Professor, Department of Geography, Banaras Hindu University, Varanasi- 221005, Email- adeepayan@gmail.com, apmbhu1958@gmail.com

period always depends on resource availability. Simmons (1996) argued that each human civilization was sustained by a particular set of resources and technology for its exploitation. We may find it in case of emergence of industrialization over a period of time in a specific space with social formation. So resources as development element have significance for human reach and comfort. "Moreover, resource depletion caused by human being led to as contribution to national health; and also contributes to gross domestic product in national wealth. While conservation does not (Steers and Litz, 1993). The geography of space has impact over development scenario at local or national level. Geographical aspects decide the quality and quantity of resources both natural as well as human. And human knowledge and resource integration shaped mode of production. "At local level resources are viewed in the same way. Job and income are generated when natural resources are exploited as a factor of production. Unemployment and poverty result from their preservation" (Powar, 1966). "Resources are the engine of all modern development. Actually natural resources are "factor of production". The production of resources evolved through the interaction of labour and other forms of capital, technology to nature" (Mishra, 2005). Appropriate and required resource availability is necessary for survival of human being as well as accelerating the ongoing developmental processes. Resources as natural and human both are important for overall development of society. The level of resources in a society represents the process, participation and appropriation of deprived people to their existing pattern of natural resources. Resources and pattern of poverty are interlinked with the nature of social organization, individual accessibility towards resources and cultural and political freedom to optimum level of resource utilization by deprived people. In a caste of hierarchal social structure the unequal rights to resources are the major challenges in any debate related to poverty, resource and development. In context of Indian social structure Scheduled Castes (SCs) are well recognized as more poor social group on the basis of low reach towards resources and denial of rights. 'Exclusion and immense deprivation of the Scheduled Castes (SCs) are closely associated with the denial of property rights, civil rights, and lack of access to education. Over a period of time due to their physical and social segregation from the rest of the Hindu society, the extent of deprivation became more intense, and was further entrenched through the institution of untouchability. It is this institutionalized exclusion of the Scheduled Castes (SCs), from access to economic rights, civil rights and human development, which has caused severe poverty and deprivation among them' (Thorat, 2004).

Education as a human capital is more significant cultural component for creativity that stimulate the process of modernization, development and ultimately towards formation of platform to generate more and more resources as capital for growth with equality. Educational betterment enhances the level of knowledge and creativity among deprived section of SCs/STs population and ultimately it expands opportunities in poor state of society. Actually, education as social capital may helpful in developing skill, capability and awareness. Education ensure the level of dignity of life in a deprive section of society."Education for All' is an important national as well as state-level objective. Schooling can play a potentially powerful role in promoting economic mobility and reducing poverty (Kozel and Parker, 2003). Considering the development aspects education is considered as an important element for human capital and it directly affects the level of human poverty index. On this account many scholars studied the 'impact of education on poverty' (Ushadevi,

2001).The second aspect of resource linkages towards poverty is agricultural land that reveals uneven distribution of land resources, especially in low castes social profile like SCs/STs. The non-availability of agricultural land among SCs/STs population compelled them to earn their livelihood as agricultural labourers that minimize their per capita income and perpetuate poverty. So the lower people have been deprived and margilised by land resources and are facing the process of furthering the level of poverty. "Land distribution in India closely follows social hierarchy. While the large landowners invariably belong to the upper castes, the cultivators belong to the middle castes and the agricultural workers largely to the scheduled castes and tribes" (Beteille, 1972; Sankaran, 1996). "Rural Indian society is hierarchical and iniquitous, and enmeshed in feudal ethos. In such a society, to be the born into a particular social group is to be the bearer of specific rights and obligations and to be involved in a specific pattern of relationship with members of other groups. Both the privileged and the deprived believe that men are born unequal" (Nair, 1961; Beteille, 1974). Many studies supported that "poor land ownership position of the scheduled groups accounts largely for their perpetual poverty and makes them vulnerable to social injustice and exploitation" (Mohanty, 2001)

Untouchability is another practice in rural India that has largely affected poverty level of Scheduled Castes (SCs) and Scheduled Tribes (STs) in under developed social structure. Continued segregation and exploitation on the basis of purity and pollution based on religious and occupational practices minimizing the space for low caste people and that affects cultural and social behaviour. The prevalence of untouchability in Indian social structure needs special enquiry to understand linkages of poverty to these practices."Untouchability is the stigma attached to certain people because of the pollution they convey. It is a stigma by caste; from birth, not from deeds performed; it lasts throughout life and cannot be ritually eliminated. The concept of ritual pollution by caste pervades the whole traditional caste structure, and untouchability, in this sense of the term, is conceptually no different in kind. It is different only in degree and is used for that pollution by caste which is so great that the rest of society segregates the members of these castes and protects itself against them. Moreover "untouchability" refers to the set of practices engaged in by the rest of society to protect itself from the pollution conveyed by the untouchables and to symbolize their inferior status. This is the most common use of the term untouchability is rarely defined in a sentence; it is usually described in terms of civil, social and religious disabilities" (Dushkin, 1967). In its dynamics and practices, untouchability provides background for accentuating process of poverty among SCs/STs population.

Political awareness is more useful for poverty eradication. In democratic society policies and programmes have been implemented through government institution needs political engagement of the masses. In India, Panchayat Raj institutions are playing crucial role for policy implementation in rural society. The engagement and participation in political organization is more useful for equal distribution of developmental benefits and power transfer. Panchayat level meeting has major impact and plays significant role for distribution of benefits of welfare programmes for many poor people. Participation in Panchayat meeting may be use as parameter for political awareness. Common Property Resources (CPRs) are more significant to justifies the level of poverty and development in a rural economy. The rate of participation and command over CPR by margilised section of SCs/STs population may be classified as best suitable element for development studies. In this context the access to CPRs is key element that

provides major impact for study to explore some basic concept on issues of poverty and its linkages towards resources.

Objective

The present study is an attempt to study the pattern of distributions of resources and its relation to poverty among Scheduled Castes (SCs) and Scheduled Tribes (STs) population. The paper also tries to explore the level of multilayered resources.

Data base and methodology

The present study is based on the primary data. The primary data has been generated through field survey by selecting one village from each block of the district based on its distance from district headquarter. Total 16 sample villages have been selected which are situated in different 16 blocks and survey work has done during November 2013 to February 2014. The sample households selected for survey belong to SCs, STs, OBCs, General in ratio of 2:1:1:1. A total of 25 households from each village comprising 10 SCs, and 5 STs, 5 OBCs and 5 General category households were considered for the survey. Total sample size, thus, is 393 households because ratio has changed for some sample villages due to the absence of STs population. The aggregated data of literacy, adult illiteracy, landlessness, Participation in Panchayat Level Meetings (PLM), Untouchability and access to common property resources (CPRs) have been used for analysis of distribution pattern of resources in the study area. The literacy has been taken to find out the educational attainment in different social groups because education is more useful for the development of human resources. The adult illiteracy may be accentuated as deprivation in knowledge and its level of deprivation manifested in forms of cultural poverty among masses, especially in SCs and STs population in India. Landlessness as parameter is another factor that determined the socio-economic resource states of social groups in an agrarian society. The pre-dominance of landlessness in SCs/STs population originates large chunk of under the condition of poverty. Awareness is required for the development as well as poverty eradication and this level of Panchayat Level Meeting (PLM) in study area is more important to draw conclusions on issues of policy evaluation for poverty eradication programmes. In some way the existence of untouchability in society badly affects the Scheduled Castes (SCs) and Scheduled Tribes (STs) population, this social evil accentuated the process of poverty. The importance of Common Property Resources (CPRs) in rural society may also be recognized as space for individual and social groups through that anyone can improve their living conditions. Therefore CPRs in any study for relation between resources and poverty is crucial. Considering the above mentioned aspects the present paper is an attempt to explore scientific correlation between resources and poverty. For this Karl Pearson correlation method has been applied by authors to draw some rational conclusion.

Study area

Ghazipur district extends between 25^0 19' North to 25^0 54' North latitude and 83^0 4' East to 83^0 58' East, longitude in the eastern part of the Uttar Pradesh covering an area of 3,337 km^2 and total population of the area is 3,615,515 persons according to census 2011. There are 1,85,2623 males and 1,762,892 females out of the total population of the district. The district is one of the densely populated areas in the eastern Uttar Pradesh with population density of 1071 persons per km^2. The district has a sex ratio of 952 (females per thousand males) and literacy rate of 71.78 per cent with 82.80 per cent male and 60.30 per cent female literacy as per census 2011, Administratively, Ghazipur district has been divided into five Tehsils, 16 Development blocks, 23 Police Stations 193 *Nyay*

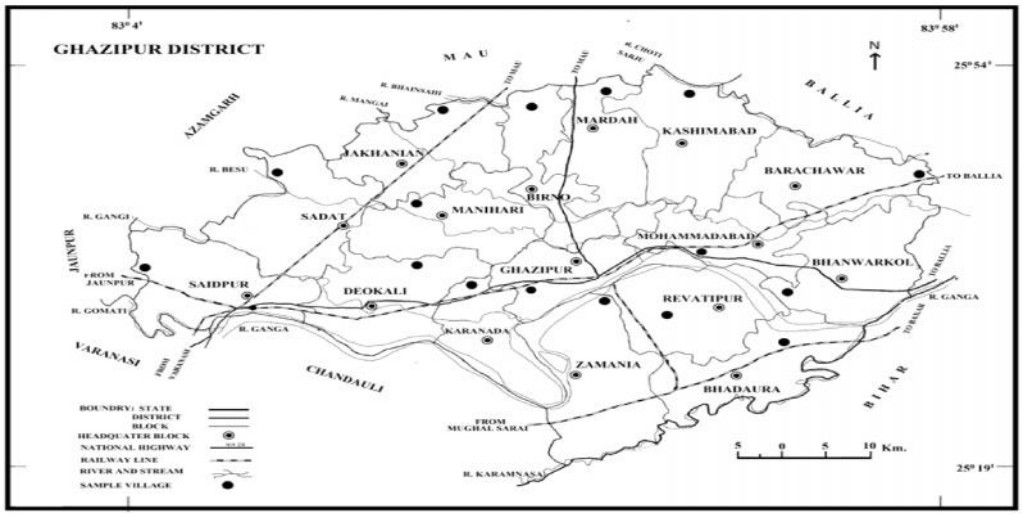


Fig. 1

-*Panchayats*, and 1280 *Gram Sabhas* covering 3,364 villages. Agriculture is the main economic activity of the district. Out of total working population 78.20 percent are engaged in agriculture operating on 80.10 percent of the total agricultural land. The main crops are wheat and rice which cover 72.77 percent of the total cropped area of the district. Sugarcane and pulses are the other important crops of the district. Industrially, the district is backward, only a few small and medium scale industries have come up recently in the district.

Social capital as Resources

The social and cultural organization and its behaviour demonstrated the pattern and availability of social capital. "Almost any form of social interaction has the potential to be understood as social capital. As a positive resource, it is presumed to have the capacity to facilitate almost any outcome in any walk of life, and to be liquid or fluid across them to a greater or lesser extent. And it is equally adaptable across subject matter, disciplines, methods, and techniques, at least within the social sciences. In short, in principle, and to a large (if selective) degree in practice, social capital can be anything you like" (Fine, 2007).

Table 1 reveals various information about distribution pattern of socio-economic resources as it mark 20 social capital. It depicts that literacy observed highest in General (93.27 per cent) social group followed by OBCs (74.15 per cent) and lowest in STs (55.50 per cent) followed by SCs (67.39 per cent). The highest literacy rate for General observed in villages Firozpur Kalan (100.00 per cent), Gahmar (100.00 per cent) and Katya Lahang (100.00 per cent) and lowest literacy found in Chakiya (76.67 per cent). For OBCs highest literacy observed in village Bharat Pur (86.11 per cent) and lowest in Makhanpur (54.76 per cent). Literacy pattern among Scheduled Castes (SCs) and Scheduled Castes (STs) are showing major spatial variation across blocks in study area. In SCs it is observed highest in village Katya Lahang (82.69 per cent) and lowest in Chanwar (5.26 per cent). In STs it observed highest in village Chanwar (87.10 per cent) and lowest in Blehari (3.70 per cent).

Adult illiteracy affects level of deprivation in knowledge that limits reach of skills, capacity and capability to mobilize productive age group

to participate in productive process of economic activities. Table 2 reveals adult illiteracy pattern in the study area. The adult illiteracy observed for General (10.80 per cent), OBCs (35.89 per cent), SCs (41.44 per cent) and STs (52.40 per cent) social group which followed the dynamics and pattern of social hierarchy. The highest adult illiteracy in General observed in village Chakiya (38.89 per cent) and lowest in Katya Lahang (0.00 per cent) and Firozpur Kalan (0.00 per cent). In OBCs highest adult illiteracy depicts in village Makhanpur (62.50 per cent) and lowest in village Kushmhi Kalan (19.05 per cent). In Scheduled Castes (SCs) highest adult illiteracy is found in village Chanwar (97.73 per cent) followed by Suhwal (56.00 per cent) and Tarwadih (50.00 per cent). The lowest adult illiteracy in SCs observed in village Katya Lahang (28.13 per cent) followed by Firozpur Kalan (30.00 per cent) and Kushmhi Kalan (30.43 per cent). The Scheduled Castes (SCs) population shows its much more spatial variation in study area. It shows maximum in Bharat Pur (100.00 per cent) and Guraini (100.00 per cent) and lowest in Chanwar (12.00 per cent).

Agricultural activity is the main occupation in rural areas and it provides minimum share (17.32 per cent) in national GDP outcomes with maximum employment. SCs/STs population in rural India is more than 20 per cent that have minimum or zero land holding across country. Table 2 shows the ground reality on issues of land holding by SCs/STs population in study area. It has been observed that 61.64 per cent of STs population has been categorized as landless followed by SCs (48.75 per cent), OBCs (45.00 per cent) and General (7.50 per cent). It justified the impact of caste hierarchy for participation rate and linkages to land resources in study area. As far as the spatial linkages is concerned, it observed that highest landless of General caste prevailed in Chakiya (40.00 per cent) and Imalia (40.00 per cent) and lowest in village of Atrauli (0.00 per cent), Belhari (0.00 per cent) , Bharat Pur (0.00 per cent), Chanwar (0.00 per cent), Firozpur Kalan (0.00 per cent), Guraini (0.00 per cent), Katya Lahang (0.00 per cent), Kodri (0.00 per cent), Makhanpur (0.00 per cent), Suhval (0.00 per cent), Tarwadih (0.00 per cent) and Sherpur Kalan (0.00 per cent). In OBCs it has been observed highest in villages Chanwar (100.00 per cent), Katya Lahang (100.00 per cent) and Suhval (100.00 per cent) and lowest in villages Bhart Pur (0.00 per cent), Guraini (0.00 per cent), Imalia (0.00 per cent), Kushmhi Kalan ((0.00 per cent) and Tarwadih (0.00 per cent). For Scheduled Castes (SCs) highest landlessness observed in villages Chanwar (100.00 per cent), Firozpur Kalan (100.00 per cent), Gahmar (100.00 per cent), Sherpur Kalan (100.00 per cent) and Suhval (100.00 per cent) and lowest in Bharat Pur (0.00 per cent) and Imalia (0.00 per cent). The spatial pattern of landlessness of STs reveals its highest concentration in villages Firozpur Kalan (100.00 per cent), Gahmar (100.00 per cent), Guraini (100.00 per cent) Kushmhi Kalan (100.00 per cent) and Suhval (100.00 per cent) and its lowest share confined in villages Belhari (0.00 per cent), Imalia (0.00 per cent) and Kodri (0.00 per cent).The spatial pattern of landlessness reflects the actual situation of linkages of land resources toward the SCs/STs population. About 50.00 per cent of sample villages selected for study, revealed 100.00 per cent landlessness among the SCs population that may be accentuated as major threats for social equilibrium.

Common Property Resources (CPRs) are the most important resource base in rural society which provides livelihood to poor people. Table 1 reveals the pattern of participation and its linkages to CPRs in various social groups. It observed that General (96.25 per cent), OBCs (90.00 per cent), SCs (87.50 per cent) and STs (87.67 per cent) population have their reach to CPRs. Most of population (90.00 per cent) have

shown their reach towards CPRs but its extent and magnitude reflect variation for General it is observed highest in villages Atrauli (100.00 per cent), Belhari (100.00 per cent), Bharat Pur (100.00 per cent), Chakiya (100.00 per cent), Gahmar (100.00 per cent), Guraini (100.00 per cent), Imalia (100.00 per cent), Katya Lahang (100.00 per cent), Kodri (100.00 per cent), Kushmi Kalan (100.00 per cent), Makhanpur (100.00 per cent), Suhval (100.00 per cent), Tarwadih (100.00 per cent) and Sherpur Kalan(100.00 per cent) while lowest in village Firozpur Kalan (60.00 per cent). OBCs social group revealed 100.00 per cent access in villages Atrauli (100.00 per cent), Belhari (100.00 per cent), Bharat Pur (100.00 per cent), Gahmar (100.00 per cent), Guraini (100.00 per cent), Imalia (100.00 per cent), Kushmi Kalan (100.00 per cent), Makhanpur (100.00 per cent), Suhval (100.00 per cent), Tarwadih (100.00 per cent) and Sherpur Kalan (100.00 per cent) and lowest in village Chanwar (40.00 per cent). Access to CPRs for Scheduled Castes (SCs) observed highest in Atrauli (100.00 per cent), Belhari (100.00 per cent), Firozpur Kalan (100.00 per cent), Gahmar (100.00 per cent), Guraini (100.00 per cent), Imalia (100.00 per cent),Kushmi Kalan (100.00 per cent), Makhanpur (100.00 per cent), Suhval (100.00 per cent), Tarwadih (100.00 per cent) and Sherpur Kalan (100.00 per cent) respectively and on other hand Bharat Pur (30.00 per cent) has its lower level linkages to CPRs. The Scheduled Tribes (STs) population have their CPRs linkages highest in villages Atrauli (100.00 per cent), Belhari (100.00 per cent), Bharat Pur (100.00 per cent), Firozpur Kalan (100.00 per cent), Gahmar (100.00 per cent), Guraini (100.00 per cent), Imalia (100.00 per cent), Kodri (100.00 per cent), Kushmi Kalan (100.00 per cent), Makhanpur (100.00 per cent), Suhval (100.00 per cent), Tarwadih (100.00 per cent) and Sherpur Kalan (100.00 per cent) and its lowest percentage share is in village Chanwar (20.00 per cent). High spatial variation in linkages and participation towards CPRs are predominantly shaping and reshaping the pattern of deprivation, especially for SCs/ STs population in study area.

Socio-political space and poverty

The reach to social and political space for any individual and social groups may be regarded as vital factor for poverty level and its dynamic. Table 2 reveals multiple information about socio-political space in the study area with social dynamics and its links towards the nature of poverty. About 63.36 per cent respondents during field survey accepted for existence of untouchability and its bad practices in society. The spatial pattern of untochability observed highest in village Makhanpur (96.00 per cent) followed by Belhari (80.00 per cent) and Sherpur Kalan (80.00 per cent) and lowest in Kodri (32.00 per cent).The participation rate in Panchayat Level Meetings (PLM) is showing its critical level in study area. The rate of participation in PLM observed highest for General (53.75 per cent), OBCs (51.25 per cent) that reflects its minimum level for SCs and STs i.e. 46.25 per cent and 33.48 per cent respectively. The SCs/STs level of participation in PLM is below 50.00 per cent that may be accentuated as alarming level for SCs/STs. This pattern also shows lowest awareness in SCs/STs social groups for poverty eradication policies and programmes in the study area. Participation rate in General depicts highest in village Kodri (100.00 per cent) and lowest in Imalia (20.00 per cent), Katya Lahang (20.00 per cent). In OBCs the highest participation rate in PLM observed in villages Bharat Pur (100.00 per cent), Guraini (100.00 per cent) and Sherpur Kalan (100.00 per cent) and lowest in Belhari (0.00 per cent). The spatial pattern of PLM in SCs shown its highest participation rate in village Makhanpur (90.00 per cent) and lowest in Chanwar (0.00 per cent). The

Table 1: Distribution Pattern of Socio-economic Resources

Village	Literacy				Adult Illiteracy				Landless				Access to CPRs			
	General (%)	OBCs (%)	SCs (%)	STs (%)	General (%)	OBCs (%)	SCs (%)	STs (%)	General (%)	OBCs (%)	SCs (%)	STs (%)	General (%)	OBCs (%)	SCs (%)	STs (%)
Atrauli	94.44	78.79	73.47	77.78	12.12	30.77	32.43	24.14	0	40	20	60	100	100	100	100
Belhari	94.74	65.22	65.00	3.70	6.45	53.13	44.90	85.00	0	80	30	0	100	100	100	100
Bharat Pur	88.37	86.11	75.00	26.67	12.82	19.23	35.71	100	0	0	0	50	100	100	30	100
Chakiya	76.67	66.67	64.44	81.25	38.89	52.38	47.06	29.41	40	60	50	40	100	60	40	40
Chanwar	97.73	79.49	5.26	87.10	7.69	30.00	95.65	12.00	0	100	100	40	80	40	90	20
Firozpur Kalan	100.00	71.79	77.78	20.00		48.00	30.00	83.33	0	80	100	100	60	100	100	100
Gahmar	100.00	60.00	70.83	28.00	4.17	45.83	36.36	68.18	20	40	100	100	100	100	100	100
Guraini	92.68	79.31	69.23	15.38	31.25	30.95	43.14	100.00	0	0	10	100	100	100	100	100
Imalia	81.25	72.41	61.82	83.33	25.00	36.84	36.36	28.57	40	0	0	0	100	100	100	100
Katya Lahang	100.00	79.31	82.69	78.95		26.09	28.13	46.67	0	100	10	75	100	60	60	50
Kodri	94.92	76.09	75.90	78.13	10.20	38.71	35.19	41.38	0	20	20	0	100	80	80	100
Kushmhi Kalan	94.44	82.76	78.33	20.00	3.70	19.05	30.43	88.89	20	0	30	100	100	100	100	100
Makhan pur	88.24	54.76	62.50	65.63	13.33	62.50	44.23	45.83	0	20	30	80	100	100	100	100
Sherpur																
Kalan	89.29	80.00	64.29	80.65	9.09	27.27	46.00	24.00	0	80	100	60	100	100	100	100
Suhwal	97.62	72.22	59.46	4.55	3.23	26.92	56.00	94.12	0	100	100	100	100	100	100	100
Tarwadih	92.68	73.91	64.91	56.10	9.09	35.29	50.00	62.07	0	0	80	40	100	100	100	100
Total	93.27	74.15	67.39	55.50	10.8	35.89	41.44	52.40	7.5	45	48.75	61.64	96.25	90	87.5	87.67

Source: Based on respondent answer in structured questionnaires, personal survey and computation (November, 2013 to February, 2014).

same for STs depicts its very critical condition in villages Bharat Pur (0.00 per cent) Firozpur Kalan (0.00 per cent), Guraini (0.00 per cent), Imalia (0.00 per cent) Kushmhi Kalan (0.00 per cent) and Suhwal (0.00 per cent) and in Atrauli (100.00 per cent) and Tarwadih (100.00 per cent). This level of negligence towards participation rate among SCs/STs emerged as major element that perpetuated poverty in study area.

Human Poverty index (HPI) gives better insights and method for scientific measurement of multi-dimensional poverty. The HPI is observed for General social group (33.48) that reveals its lower level as compared to other social groups. It is found highest in village Guraini (50.00) and lowest in Makhanpur (10.56). The OBCs segment confined HPI with moderate level (39.25) that depicts better condition in social space for OBCs. It reveals highest in sample village like, Katya Lahang (66.42) and lowest in Kushmhi Kalan (20.14 per cent).

But for the case of SCs/ STs, the study revealed a very alarming situation and its HPI value ranges from 45.32 to 46.25 that may be taken into account in study area.This HPI value for SCs/ STs explain about the existing pattern and spatial reality of multiple poverty among the most deprived social strata of society. Table 2 reveals ground reality for nature, extent and magnitude of human poverty especially for SCs/ STs population. The HPI value across the sample villages of SCs noticed as highest in village Chanwar (85.50) and lowest in Kushmhi Kalan (26.00 per cent). In remaining sample villages it is observed as Guraini (52.21), Sherpur Kalan (52.03), Chakiya (51.72), Tarwadih (51.24), Imalia (50.95), Suhwal (40.95), Firozpur Kalan (45.17), Belhari (44.55), Bharat Pur (42.15), Makhanpur (39.90), Kodri (38.31), Katya Lahang (36.65), Gahmar (33.31), and Atrauli (32.57), respectively. For segment STs category the highest Human Poverty Index (HPI) prevailed in sample villages like Bharat Pur (82.04) followed by Guraini (76.03), Suhwal (75.86), Imalia (66.97), Kushmhi Kalan (65.93), Kodri (64.36), Tarwadih (61.97), Firozpur Kalan (60.63), Belhari (59.27), Katya Lahang (54.65), Gahmar (50.71), Sherpur Kalan (35.65), Makhanpur (33.11), Chakiya (32.13), Atrauli (30.03) and Chanwar (26.62), respectively. The prevalence of higher level of HPI among SCs/ STs as compared to General and OBCs social groups may be posed serious threats for social peace and process of development in the study area.

Resources and poverty

The present research paper tried to find out co-relation between resources and HPI. To find out this authors used correlation (direct method) statistical technique proposed by Karl Pearson. Table 3 reveals that literacy and HPI are inversely correlated and it observed for General (-0.40), OBCs (-0.44), SCs (-0.89) and STs (-0.65). The higher degree of negative correlation in SCs (-0.89) and moderate in STs (-0.65), OBCs (-0.44) and General (-0.40) is clearly underlined this fact that high level of knowledge and its relation to resource linkages have ultimately impacted significantly in shaping the nature of poverty. Education, skills and awareness are the valuable elements for process of development and deprivation. Those who linkages to these resources have benefitted more, while on other hand remaining section of social groups deprived from fruit of development. The present study highlighted that adult illiteracy may be taken as major factor for deprivation in all sphere of development. Table 3 depicts positive correlation between adult illiteracy and HPI which is showing high degree of positive correlation in SCs (0.89) and STs (0.80) and medium level of positive correlation in General (0.54) and OBCs (0.47). Positive correlation between adult illiteracy and HPI is supporting this fact that deprivation in knowledge originate poverty situation especially among SCs/STs population. Positive

Table 2: Social, Political Space and Poverty

Village	Untouchability	Participation in *Panchayat* Level Meetings (PLM)				Human Poverty Index			
	All	General	OBCs	SCs	STs	General	OBCs	SCs	STs
Atrauli	76	60	60	40	100	11.82	42.5	32.57	30.03
Belhari	80	60	0	30	60	22.74	49.62	44.55	59.27
Bharat Pur	45	40	100	40	0	43.46	32.22	42.15	82.04
Chakiya	56	80	60	60	40	48.25	41.63	51.72	32.13
Chanwar	72	60	40	0	20	43.94	21.52	85.5	26.62
Firozpur Kalan	76	40	60	60	0	27.77	63.85	45.17	60.63
Gahmar	44	60	20	10	20	20.85	53.55	33.31	50.71
Guraini	44	60	100	40	0	50.05	32.36	52.21	76.03
Imalia	45	20	20	40	0	47.08	52.95	50.95	66.97
Katya Lahang	67	20	60	70	50	34.67	66.42	36.65	54.65
Kodri	32	100	40	30	40	36.51	38.04	38.31	64.36
Kushmhi Kalan	64	40	40	40	0	25.44	20.14	26.00	65.93
Makhanpur	96	40	40	90	20	10.56	43.51	39.90	33.11
Sherpur Kalan	80	80	100	70	40	34.84	21.46	52.03	35.65
Suhwal	60	60	40	40	0	31.21	33.36	49.75	75.86
Tarwadih	72	40	40	80	100	34.74	35.58	51.24	61.97
Total	63.36	53.75	51.25	46.25	32.88	33.48	39.25	45.32	46.57

Source: Based on respondents answer in structured questionnaires, personal survey and computation (November, 2013 to February, 2014)

correlation established between landlessness and HPI and it reflect that landownership has major impact on poverty situation especially in agrarian society. The correlation between landlessness and HPI observed for General (0.30), OBCs (0.19), SCs (0.39) and STs (0.07). Access to Common Property Resources (CPRs) is another more important criterion for rural livelihood. The correlation between access to CPRs and HPI revealed positive among OBCs (0.03), SCs (0.00) and STs (0.51) and nature of prevalence to reach of resources prepared grounds for poverty situation. In this context, any poverty study need in-depth analysis of CPRs and its linkages to masses. Political awareness is more important for taking benefits from ongoing poverty eradication programmes and policies by different governmental agencies. The participation rate from various social groups reveals its pattern *i.e.* OBCs (-0.32), SCs (-0.24) and STs (-0.42) correlation in between PLM and level of poverty in study area. This pattern underlined this fact that in absence of awareness margilised people do not have proper participation in PLM and thus they have discriminated by development processes. General (0.07) social group has its maximum participation in PLM that ensured minimum poverty level. Untochability as inhuman practice especially for Scheduled Castes (SCs) population and Scheduled Tribes (STs) have consequential impact on their pattern and nature of poverty.Table 3 shows correlation for SCs (0.09) that clearly explain

how poverty emerged in a socially and culturally caste divided society. The untouchability score for STs is -0.55 that shows inverse relation to HPI.

Table 3: Correlation between resources and HPI

Correlation with HPI		Social Groups		
	General	OBCs	SCs	STs
Literacy	-0.40	-0.44	-0.89	-0.65
Adult Illiteracy	0.54	0.47	0.89	0.80
Landlessness	0.30	0.19	0.39	0.07
CPRs	-0.01	0.03	0.00	0.51
Participation in *Panchayat* Level Meetings	0.07	-0.32	-0.24	-0.42
Untouchability	N/A	N/A	0.09	-0.55

Source: Based on respondent answer in structured questionnaires, personal survey and computation (November, 2013 to February, 2014)

Conclusion

On the basis of in-depth field observation, data analysis and discussion it may be concluded that resources and its linkages to various social groups have impacted poverty in a greater way, and uneven resource linkages evolved poverty, deprivation and inequality and formulated unequal social groups over space. Access to knowledge that confined with many uneven patterns provided capability to people that ultimately manifested in forms of varying nature of poverty and its landscape. Adult illiteracy which prevailed in most of SCs/STs population creates background for deprivation in forms of poverty. Adult illiteracy also minimize the level of awareness among SCs/STs. The land issues are another point for relation between resource linkages to poverty in agrarian society. Absence of agricultural land resources has ultimately increased more chance for poverty, especially in margilised social groups like SCs, STs and OBCs in agrarian economy. The common Property Resources (CPRs) is also another significant resource base that provides chance for poverty to OBCs (0.03) and STs (0.51) and it can be regarded as cause for deprivation. The PLM and HPI analysis revealed that correlation of OBC (-0.32), SCs (0.24) and STs (-0.42) has shaped the extent of poverty in study area. The high value of PLM for OBCs (-0.32) ensure maximum rate of participation in various scheme and minimize poverty level for concerned group. This maximum value observed for General (0.07) social group and impacted in better way towards process of poverty eradication programmes. The untouchability correlated to poverty ranges from SCs (0.09) to STs (-0.55) and posed serious threats and accentuated problem of social and cultural poverty.

References

Beteille, 1974, "Studies in Agrarian Social Structure", *Oxford University Press*, Delhi.

Dushkin, L., 1967, "Scheduled Caste Policy in India: History, Problems, Prospects", Asian Survey, Vol. 7, No. 9,Sep., 1967, pp. 626-636, *University of California Press*, downloaded from, http://www.jstor.org/stable/2642619, Accessed: 16-03-2015 08:08 UTC

Fine, B., 2007, "Social Capital, Development in Practice", Vol. 17, No. 4/5 (Aug., 2007), pp. 566-574,available at www.jstor.org/stable/25548254.

Kozel, V. and Parker, B., 2003, "A Profile and Diag-

nostic of Poverty in Uttar Pradesh", *Economic and Political Weekly*, January, 25, p.392.

Mishra, A. P., 2013,"Contextualizing Population in Developing Societies: Third World Perspective", in Population Development and Environment (edited book), Concept Publishing Company Pvt. Ltd., New Delhi, pp.57-75.

Mohanty, B.B., 2001, "Land Distribution among Scheduled Castes and Tribes", *Economic and Political Weekly*, Vol. 36, No. 40 (Oct. 6-12, 2001), pp. 3857-3868, available at http://www.jstor.org/stable/4411206, Accessed: 16-02-2018 09:16 UTC

Nair, K., 1961, "Blossoms at the Dust", Duckworth and Co, London.

Powar, T. M., 1996, "Lost Landscape and Failed Economies", Washington: Island Press.

Rees, J., 1985, "National Resources: Allocation", Economics and Policy. New York: Routledge.

Sankaran, S. R., 1996, "Introduction' in B N Yugandhar(ed), *Land Reforms in India*", Vol 3, Sage Publications, New Delhi, pp. 17.

Simmons, I. G; 1996, "Challenging a Face of Earth: Culture, Environment, History", Blackwell, p.28.

Steers, A. and Litz, E., 1993, "Measuring environmentally sustainable development", *Finance development* 30 (4), pp. 20-23.

Ushadevi, M. D., 2001, "Poverty Database in Education: Strategies for Monitoring Poverty Reduction", *Economic and Political Weekly*, July, 21, pp. 2779-2783.

Thorat, S., 2004, "Marginalized Groups and the Common Minimum Programmne", *Social Scientist*, Vol. 32, No.7/8 (Jul.-Aug., 2004), pp. 70-75, available at .http://www.jstor.org/page/info/about/policies/terms.jsp

Zimmerman, E. W., 1944, "Resources-an Evolving Concept", *Transaction*, Academy of sciences, pp.157-165.

●●●

NGJI, An International Refereed Journal
(NGSI-BHU, ISSN: 0027-9374/2017/1681)
Vol. 64, No. 3-4, Sept.-December, 2018

Meaning the Quality of Life in Jabalpur city : An Integrated Approach

Rambooshan Tiwari[1] and Jagadish Singh[2]

Abstract

The large concentrations of population in a small area on the one hand and haphazard and unorganized development on the other hand have created many problems for the good life and healthy living in a city. People living over a small area not only struggle for space in the city but also for easy availability of and access to infrastructural facilities, public amenities and quality environment. As a result, differences exist in quality of life at various levels. It is, therefore, necessary to have an understanding of its residents, how they live. The notion of quality of life may vary across the regions as well as scientific disciplines. Social scientists including geographers adopted objectives and subjective approaches to measure quality of life. The quality of life may be assessed through objective indicators such as availability of amenities and basic facilities at household level. It may also be judged on the basis of subjective indicators based on feelings and/ or experiences of satisfaction or dissatisfaction of individuals or groups with living conditions. Following both approaches, this study attempts to measure quality of life in Jabalpur - a million+ city of India focusing on four aspects viz. basic amenities, living conditions, social goods and environment. Based on sixty eight variables, a composite index is calculated to measure quality of life. In accordance, each of 480 survey households was classified into three categories of quality of life namely low, moderate and high. Further, spatial variations in the quality of life are examined by background characteristics of the residents. The results of this study may be useful for urban planners and decision makers to prioritize their efforts in ensuring good life and healthy environment for work and living.

Keywords: *quality of life, objective approach, subjective approach, indicators, composite index*

Introduction

The arrival of new millennium was marked by a major milestone in the history of humankind. For the first time in history, over half of the world's population lived in urban areas (WUP, 2009). It is expected to home about 68 per cent by 2050. Projections show that urbanization, the gradual shift in residence of human population from rural to urban areas, combined with overall growth of the world population could add another 2.5 billion people to urban areas by 2050

1. Assistant Professor, Department of Geography, Indira Gandhi National Tribal University, Amarkantak - 484887
2. Professor, (Retd), Department of Geography, Banaras Hindu University, Varanasi- 221005

(WUP, 2018). It is significant to note that the bulk of this growth will be in developing regions. Urbanization, in general, is associated with economic development and good quality of life. In pursuit of economic opportunities and a better quality of life rural inhabitants are drawn to the cities and towns. In this respect metropolitan cities have remained more attractive as compared to smaller cities and towns. But the rapid pace of urbanization with low level of urban facilities, and services has caused myriad problems for livability to its citizens, particularly in developing countries like India. Since the last few decades, with increasing urbanization, researches to quality of life in cities are receiving more attention by academicians in the social sciences. Genuinely, urban centers due to large population size, high population growth and density have attracted greater attention. Despite, there are very few studies, especially in geography on this theme in context of Indian cities. The present study is a modest attempt to examine variations in quality of life across a cross-section of space and society in Jabalpur - a million + city and the cultural capital of Madhya Pradesh.

Approaches to study quality of life

Quality of life is a multidimensional construct that requires evaluation from different perspectives. Two major approaches- objective and subjective to measuring quality of life dominate the discourse in social sciences. It may be noted that perspective to measure quality of life varies completely with the change in approach. The objective approach directly or indirectly is based on standard of living and income of individuals or households. This approach defines quality of life as the 'sum of all living conditions.' This was the Scandinavian approach of quality of life which has dominated during the early years of quality of life research (Hagerty et al, 2002). This approach defines living conditions in a materialistic manner that can be compared with the income approach of development. From the beginning the basic tenet of this approach has been that social policy needs hard facts in the first place (Johansson, 2002). Hence Scandinavian social surveys do not involve items on matters like 'trust' and 'happiness'. Similarly, the Dutch 'welfare-index' focuses on material living conditions (Boelhouwer and Stoop, 1999). In nutshell, the main focus of the objective approach is to measure well-being/quality of life on the basis of materialistic conditions.

Contrary to it, the subjective approach is based on the notion that quality of life of a person or society depends on the level of satisfaction or happiness with different components of their living environment. Happiness, satisfaction, and gratification are subjective components of wellbeing. Such a study is more relevant for inclusive development of the city and society. Dalkey and Rourke (1973) defined quality of life as 'person's feeling of well- being, satisfaction or dissatisfaction, happiness or unhappiness with life.'

These two approaches must be treated complementary rather than competitive. Even those who are in favor of subjective indicators have accepted that material well-being is the important determinants of all well-being (Noll, 2002). Browne et al. (1994) have rightly concluded that quality of life is the result of the interaction between external conditions of an individual's life and the internal perceptions of these conditions.

The study area

Jabalpur with a total population of 1,268,848 ranks at 38th place amongst the metropolitan cities /UAs of India and third largest city in the state of Madhya Pradesh after Indore and Bhopal (Census of India, 2011). The city is headquarters of Jabalpur division, district and tehsil. It is located on the right bank of holy river Narmada at an average altitude of 393 m above mean sea level (Fig. 1). The city sprawls over an area 100 sq. kilometers. It has emerged as the most important urban centres of the Narmada

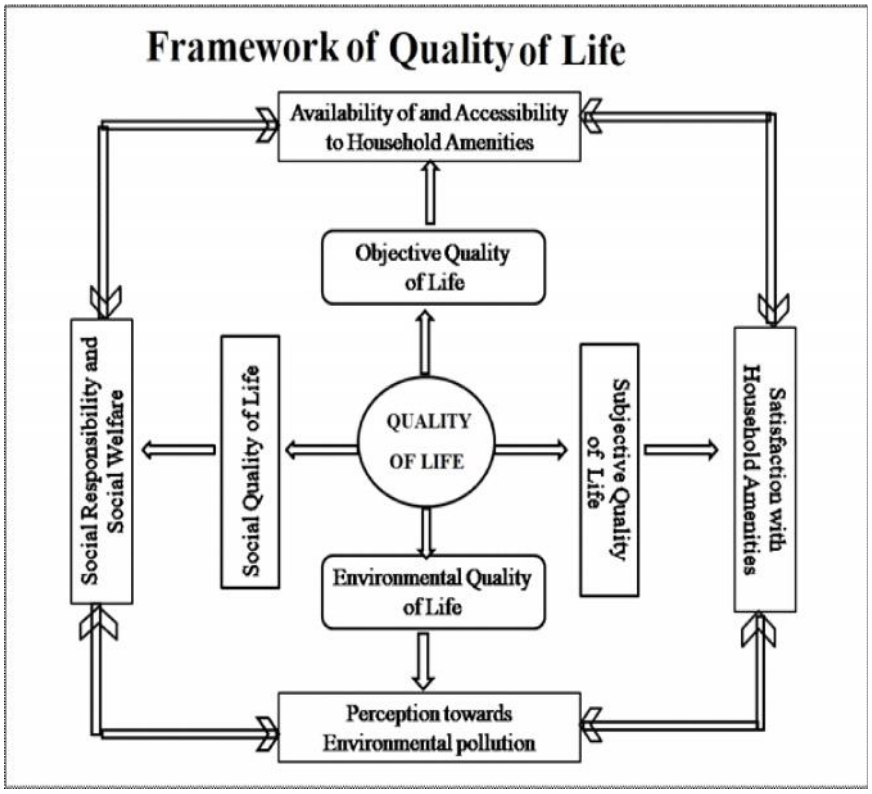


Fig. 1

Basin. The city is well connected with different parts of the country with rail and roads. It is also the headquarters of west central railway zone. For convenience of civic administration, the city was divided into eight zones and 70 wards (CDP, 2005). These administrative zones are used as spatial units for the purpose of analysis of quality of life. It is satisfying to mention that Jabalpur has been selected in the Government of India's list of first 20 smart cities in the first phase.

Objectives

The study has been attempted with the following objectives:

i. to determine overall quality of life in the study area,
ii. to analyze the spatial variations in quality of life across the city,
iii. to examine variations in quality of life by background characteristics of respondents and
iv. to explore the determinants having significant impact on quality of life.

Database and methodology

This study is mainly based on primary data collected through a questionnaire survey at household level. The study area is divided into eight administrative zones by Jabalpur Municipal Corporation (JMC). Zone-wise sample survey was conducted in November-December, 2010 with the help of a structured questionnaire schedule. The survey covers different aspects of life. Altogether 480 households (60 from each zone) representing various socio- economic strata have been selected based on random sampling (Table 2).

The index calculated in the present paper for the assessment overall quality of life is the

sum of four different indices that are based on objective and subjective dimension. These four indices address to issues related to basic amenities, living conditions, social goods and environment. Fig. 1 presents the framework of quality of life as well as relationship among four indices.

It may be noted here that these four indices are based on four different sets of indicators which are non-overlapping in nature (Table 1). The first index of QoL is based on the availability of and access to household amenities (Tiwari and Singh, 2015) while the second index is based on the satisfaction of residents with living conditions (Tiwari and Singh, 2017). Third index of QoL uses ten indicators pertaining to environmental pollution and perception towards physical environment (Tiwari and Singh, 2017) while the fourth index is computed taking into account the indicators related to social milieu. Each domain has significant contribution to the total quality of life.

Table 1: Indices of Quality of Life and Basis of Their Measurement

Quality of Life Indices	Basis of measurement calculation of Index	No. of Indicators used for
QoLI1	Availability of and access to household amenities	30
QoLI2	Level of satisfaction with available household amenities	13
QoLI3	Perception towards environmental pollution, household environment and satisfaction with overall environmental conditions of the city	10
QoLI4	Availability of and satisfaction with social services and participation in community/social activities	15
QoLI	Composite index based on all four indices of quality of life	68

It is notable that each of from index (QoLI1, QoLI2, QoLI3, & QoLI4) was divided into three categories, viz. low, moderate and high. While calculating 'composite index' (QoLI) to assess overall Quality of Life an arbitrary weight method is used. Arbitrary weight of 1 to 3 was assigned for low, moderate and high. The same method has been followed to calculate the quality of life index with respect to basic service/ amenities, living conditions, social goods and environment. Arbitrary weight 1is assigned to low, 2 for moderate and 3 for high category. The lowest possible score in this case is 4 (household having low value in all four indices) revealing the poor state while highest possible score will be 12 (household having high value in all the four indices) reveals good state. The quality of life index (QoLI) is based on actual score obtained by individual households.

In addition, the mean value of QoLI for each socio-economic category is also calculated for a in depth analysis. The mean value of each category is based on following formula:

Mean QoLI value of ith category = {1(No. of respondents in ith category with low quality of Life) + 2(No. of respondents in ith category with moderate quality of life) + 3 (No. of respondents in ith category with high quality of life)} / Total respondents in respective category.

Lastly, quality of life has been re-coded into two categories to apply the binary logistic regression that shows the impact of socio-economic variables on quality of life.

Results and analysis

Table 2 portrays the percentage distribution of survey respondents by sex, age, caste/ tribe, religion, education, occupation and family income. Out of 480 respondents, 67.70 percent

Table 2: Background Characteristics of the Survey Respondents

Background Characteristics		Number	Percent
Sex	Male	325	67.70
	Female	155	32.30
Age	Below 30	74	15.42
	30-39	137	28.54
	40-49	128	26.67
	50-59	83	17.29
	60 & above	58	12.08
Religion	Hindu	380	79.17
	Muslim	61	12.71
	Others	39	08.12
Caste /Tribe	General	153	31.88
	Other Backward Class	168	35.00
	Scheduled Caste	101	21.04
	Scheduled Tribe	58	12.08
Education	Illiterate	25	05.21
	Primary	102	21.25
	Secondary	126	26.25
	Higher Secondary	133	27.71
	Graduation & above	94	19.58
Occupation	Unemployed	55	11.46
	Daily wage	121	25.21
	Industrial worker	71	14.79
	Self employed	114	23.75
	Services	119	24.79
Family Income (Rs)	Below 5000	72	15.00
	5001-10000	99	20.62
	10001-15000	103	21.46
	15001-20001	121	25.21
	Above 20000	85	17.71
Total		480	100.00

Source: Based on field survey, 2010

are males while 32.30 percent are females. More than 55 percent respondents belong to age 30-49 years. Social class of respondents shows that highest percentage of households belongs to Other Backward Class (35.00%) followed by General (31.88 %), Scheduled Caste (21.04%) and Scheduled Tribe (12.08%). Among the survey households, Hindu (79.17 %) dominates followed by Muslim (12.71%) and others (8.12%), mostly Jain.

Education makes the people more awakened and responsive. Educational background of respondents shows that more than 50 percent respondents have completed 8 or more years of schooling while 19.5 percent respondents have education up to graduation or more.

Empowering effects of employment depend on the occupation. Occupation of respondents reveals that daily wager (25.21 %) and self employed (23.25%) together constitute nearly half of total workforce. Only 24.79 percent are engaged in other services whereas 14.79 percent interviewees are engaged in various industries. Income is considered the most influential factor in improving quality of life. Even after six and half decades of trying, 15 percent of households have income less than Rs. 5000 per month and live in abject poverty. However, only 17.71 percent households have monthly income above Rs. 20000.

Status of quality of fife

Table 3 presents the status of quality of life of surveyed households pertaining to different aspects / areas of life. It reveals that more than one- fourth of surveyed households of the city live with low quality of life while less than one-fourth of the surveyed households (23.75%) enjoy high quality of life. Less than half of the surveyed households (48.75%) were put under moderate category of quality of life. Apart from who lives where in the city, socio- economic factors especially education, occupation and income are responsible for variation in the quality of life of citizens.

Table 3: Status of Quality of Life of Sample Households in the City

	Households in Respective Category of Quality of Life					
		Low	Moderate		High	
Index	Number	Percent	Number	Percent	Number	Percent
QoLI1	153	31.88	244	50.83	83	17.29
QoLI2	147	30.62	195	40.62	138	28.76
QoLI3	168	35.00	211	43.96	101	21.04
QoLI4	137	28.54	232	48.33	111	23.13
QoLI	132	27.50	234	48.75	114	23.75

Source: Based on field survey, 2010

Spatial variation in quality of life

It may be noted here that Table 3 only summarizes the status of quality of life of citizens in the city. For understanding spatial differences in the quality of life, a detailed analysis at zonal level is required. Table 4 and Fig. 2 evince the inter zone variation in quality of life.

It is apparent from Table 4 that Civil Line with good environment has lowest number of households with low quality of life followed by Garha and Gorakhpur. On the other hand, more than half of the households of Bhan Talaiya (55.00%) were categorized under low quality of life. Other three zones namely, Cherital, Ghanta Ghar and Ranjhi also have a relatively higher percentage of households with low quality of life. In these zones quality of basic services and neighborhood environment are not conducive.

A complete contrast is discerned in case of high quality of life as about two-third households of civil line are placed under this category while

Table 4: Inter Zone Variation in Quality of Life

Zone No.	Name of Zones		Quality of Life		
			Low	Moderate	High
1	Garha	Number	10	29	21
	Per cent	16.67	48.33	35.00	
2	Gorakhpur	Number	10	31	19
		Per cent	16.67	51.67	31.67
3	Sanjay Gandhi Market	Number	11	32	17
		Per cent	18.33	53.33	28.33
4	Civil line	Number	7	18.0	35
		Per cent	11.67	30.00	58.33
5	Ghanta Ghar	Number	18	36	6
		Per cent	30.00	60.00	10.00
6	Bhan Talaiya	Number	33	25	2
		Per cent	55.00	41.67	3.33
7	Cherital	Number	27	26	7
		Per cent	45.00	43.33	11.67
8	Ranjhi	Number	16	37	7
		Per cent	26.67	61.67	11.67
Total	Number	132	234	114	
		Per cent	27.50	48.75	23.75

Source: Based on field survey, 2010.

corresponding figure is very low in case of Bhan Talaiya (3.33%), Ghanta Ghar (10.0%), Cherital (11.67%) and Ranjhi (11.67%). According to 2001 census, out of 60 wards 59 reported slums although their percentage varies across the wards (Tiwari and Singh, 2010). Higher concentration of slums appears to be the main reason behind the low quality of life in respective zones.

It is also evident from Fig 2 that expecting Civil Line, other zones have considerable percentage of households under moderate category of quality of life. It indicates that like other Indian cities, here too people of different backgrounds live together in different parts of the city depending on rental value of land and purchasing capacity.

Quality of life by background characteristics of the respondents

In the succeeding paragraphs quality of life will be examined by background characteristics of the households. Of the several variables, education, occupation and income are believed to influence human well being most significantly.

Religion is an important social variable affecting the quality of life. Table 5 evinces that mean value of the quality of life for Hindus (1.92) is slightly higher than the mean value of Muslims (1.80). On the other hand, households belonging to other religions (mostly Jain) have much higher mean value (2.64) in comparison to Hindu and Muslim. Percentage of households with low quality of life are almost identical in the case of Hindu (29.21%) and Muslim

(31.15%) while it is relatively low (5.13%) in case of others. On the other hand, about 70 per-cent households of other religion possess high quality of life. The corresponding figure is relatively low for Hindus (21.05%) and Muslims (11.48%).

Table 5: Religion wise Variation in Quality of Life

Religion		Quality of Life				
		Low	Moderate	High	Total	Mean value of QoLI
Hindu	Number	111	189	80	380	1.92
	Per cent	29.21	49.74	21.05	100	
Muslim	Number	19	35	7	61	1.80
	Per cent	31.15	57.38	11.48	100	
Others	Number	2	10	27	39	2.64
	Per cent	5.13	25.64	69.23	100	
Total	Number	132	234	114	480	1.96
	Per cent	27.50	48.75	23.75	100	

Source: Based on field survey, 2010.

Social Class represents the traditional caste based structure of Indian society. It is a general belief that urban areas being cosmopolitan in character are relatively less affected by the caste structure. However, the fact speaks otherwise. A simple conclusion on the relationship between social class and quality of life can be drawn from the declining mean value of quality of life from General (2.25) to Other Backward Class (2.01), scheduled caste (1.69) and scheduled tribe

Table 6: Category wise Variation in Quality of Life

Social Class		Quality of Life				
		Low	Medium	High	Total	Mean Value of QoLI
General	Number	24	67	62	153	2.25
	Per cent	15.69	43.79	40.52	100	
Other Backward Class	Number	34	99	35	168	2.01
	Per cent	20.24	58.93	20.83	100	
Scheduled Caste	Number	41	50	10	101	1.69
	Per cent	40.59	49.50	9.90	100	
Scheduled Tribe	Number	33	18	7	58	1.55
	Per cent	56.90	31.03	12.07	100	
Total	Number	132	234	114	480	1.96
	Per cent	27.50	48.75	23.75	100	

Source: Based on field survey, 2010.

(1.55). At the one end, only 15.69 per cent of households of General category were recorded under low quality of life while corresponding figure is very high for scheduled caste (40.59%) and scheduled tribe households (56.90%). Just opposite trend is seen in case of high quality of life where percentage of general category households is much higher in comparison to remaining three categories. It may be noted that the difference in mean value of quality of life between General and Scheduled Cast/Scheduled Tribe households is very high probably due to locational disadvantage in the provision of social services and their concentrations in slums and marginal areas of the city.

Education is considered one of the most important social variables of human well being. Table 7 clearly demonstrates that quality of life of households is increasing with an increase in level of education. Highest mean value of quality of life was recorded for the households with graduation and above (2.52) followed by senior secondary (2.08) while lowest for households of illiterate respondents (1.28). With increase in education the quality of life changes significantly as percentage of respondents with high quality of life almost, doubled with each succeeding categories of quality of life from primary to higher education. More importantly, about two-third of the households with graduation and above was categorized under with high quality of life. The trend is just opposite with low quality of life. A shocking 76 per cent or three fourth families of illiterate respondents enjoyed low quality of life. It means that education is an important contributing factor of quality of life.

Occupation of a person affects several aspects of life, including his personal well-being as well as well-being of his/her family. Table 8 reveals the impact of occupation (employment

Table 7: Education wise variation in Quality of Life

Education		Quality of Life				
		Low	Moderate	High	Total	Mean Value of QoLI
Illiterate	Number	19	5	1	25	1.28
	Per cent	76.00	20.00	4.00	100	
Primary	Number	51	44	7	102	1.57
	Per cent	50.00	43.14	6.86	100	
Secondary	Number	32	78	16	126	1.87
	Per cent	25.40	61.90	12.70	100	
Higher secondary	Number	23	76	34	133	2.08
	Per cent	17.29	57.14	25.56	100	
Graduation and above	Number	7	31	56	94	2.52
	Per cent	7.45	39.98	59.57	100	
Total	Number	132	234	114	480	1.96
	Per cent	27.50	48.75	23.75	100	

Source: Based on field survey, 2010.

status) on quality of life. The mean value of quality of life is found highest for those working in service sector (2.39) and decline gradually in case of self-employed (2.0), industrial workers (1.96), daily wagers (1.73), and unemployed (1.49). Households belonging to service sector employees (48.74%) have a higher share under high quality of life as compared to households of self-employed (19.30%), industrial workers (26.76%), daily wagers (10.74%) and unemployed (3.64%). Contrary to it, households belonging to unemployed respondents (54.55%) have highest percentage under low quality of life followed by families of daily wagers (38.02 %) and industrial workers (30.99 %).

It is also observed that most of the households of self-employed interviewees fall under the category of moderate quality of life. On the other hand, households of industrial workers demonstrate great diversity in their quality of life. Those working in public sector undertakings such as VFJ and Ordnance Factory enjoyed better quality of life in comparison to those who are working in private sector. Similarly, those who were working as permanent/regular employee have better level of living in comparison to those who work as daily wager or contractual worker.

Table 8: Occupation wise Variation in Quality of Life

Occupation		Quality of Life				
		Low	Moderate	High	Total	Mean Value of QoLI
Unemployed	Number	30	23	2	55	1.49
	Per cent	54.55	41.82	3.64	100	
Daily wager	Number	46	62	13	121	1.73
	Per cent	38.02	51.24	10.74	100	
Industrial worker	Number	22	30	19	71	1.96
	Per cent	30.99	42.25	26.76	100	
Self-employed	Number	22	70	22	114	2.00
	Per cent	19.30	61.40	19.30	100	
Services	Number	12	49	58	119	2.39
	Per cent	10.08	41.18	48.74	100	
Total	Number	132	234	114	480	1.96
	Per cent	27.50	48.75	23.75	100	

Source: Based on field survey, 2010.

Income determines the economic status of households and has a strong positive association with the quality of life. It is apparent from Table 9 that households having income above ? 20000 have recorded highest mean value of quality of life (2.72) which gradually declines with a decrease in household income. The effects of income clearly visible as not a single household of high income group are placed under low quality of life whereas 87.5 percent households of low income group lie under this category. Reverse trend was observed in case

Table 9: Income wise Variation in Quality of Life

Monthly Family Income (□)		Quality of Life				
		Low	Moderate	High	Total	Mean Value of QoLI
Below 5000	Number	63	9	0	72	1.13
	Per cent	87.50	12.50	0	100	
5001-10000	Number	49	44	6	99	1.57
	Per cent	49.49	44.44	6.06	100	
10001-15000	Number	18	76	9	103	1.91
	Per cent	17.48	73.79	8.74	100	
15001-20000	Number	2	81	38	121	2.30
	Per cent	1.65	66.94	31.40	100	
Above 20000	Number	0	24	61	85	2.72
	Per cent	0	28.24	71.76	100	
Total	Number	132	234	114	480	1.96
	Per cent	27.50	48.75	23.75	100	

Source: Based on field survey, 2010.

of high quality of life. Not a single household of low income group could have find place under high quality of life while nearby three-fourth of households of high income group belong to this category.

It is also apparent from Table 9 that income group ? 15001-20000 may be considered as 'threshold income group' as the percentage of respondents with low quality of life are found least in this category while the income group of above ? 20000 may be termed as 'effective income group' as most of the households (71.76%) of this income group fall under high quality of life. From the survey results it may be concluded that quality of life increases with the rise in household income. It shows that income is a significant contributing factor of quality of life.

Predictors of Quality of life

The binary logistic regression is used to measure the relationship between the categorical dependent variable and one or more predictor (independent) variables. The odd ratios depict the relationship between quality of life and the socio-economic background of the respondents (Table 10). The results obtained are discussed in sequel.

The quality of life varies across the religious groups. In reference to Hindu households, Muslims (?=0.881) are likely to have slightly lower quality of life while the probability of quality of life is significantly higher among the other religions (?=3.838, CI= 2.093-10.392). It may be noted here that households of other religion are mainly consists of Jain which is a relatively affluent religious group.

By caste/tribe, households of scheduled caste category (?=1.601, CI=0.687-2.231) having 1.6 times more likely to have higher quality of life although not significant whereas households of other backward class (?=2.917*, CI=0.801-5.592) and general category (β=3.864*, CI=2.114-11.653) are 2.9 and 3.8 times more likely to have a high quality of life respectively in comparison to scheduled tribe.

Table 10: Binary Logistic Regression Showing the Odd Ratios (unadjusted) and Confidence Interval of Quality of Life by Background Characteristics of the Respondents

Background Characteristics		Odd Ratio (Exp β)	95.0 per cent Confidence Interval for Exp β	
			Lower	Upper
Religion	Hindu (RC)	1.000		
	Muslim	0.881	0.401	1.109
	Others	3.838*	2.093	10.392
Caste/ Tribe	Scheduled Tribe (RC)	1.000		
	General	3.864*	2.114	11.653
	Other Backward Class	2.917*	.801	5.592
	Scheduled Caste	1.601	0.687	2.231
Education	Illiterate (RC)	1.000		
	Primary	1.768	0.208	15.070
	Secondary	3.491	0.441	27.609
	Higher Secondary	8.142	1.074	63.260
	Graduation & above	35.368**	5.588	172.646
Occupation	Unemployed (RC)	1.000		
	Daily wager	3.190	0.694	14.651
	Industrial worker	9.683*	2.147	43.674
	Self employed	6.337	1.433	28.018
	Services	25.197**	5.807	108.155
Family Income	Below 5000 (RC)	1.000		
	5001-10000	1.364	0.232	3.827
	10001-15000	2.731	0.814	11.446
	15001-20001	12.395**	3.473	34.245
	Above 20000	34.332**	10.507	278.437

Note: Significant at p<0.005* and p < 0.001**; (RC): Reference Category

Of the several variables, education is considered to be the most significant predictor of quality of life. In reference to illiterate, the people educated up to primary (β=1.768, CI= 0.208-15.075), secondary (β=3.743, CI= 0.441- 27.609) and higher secondary (β=8.142, CI= 1.074-63.260) levels are 1.5, 3.7 and 8.2 times more likely to have a better quality of life respectively. The respondents educated up to graduation & above (β=35.368**, CI=5.588- 172.646) are 35 times more likely to have a higher quality of life and also significant.

Occupational status of the respondents also appears to be the important predictor of quality of life. The odd ratio of having better quality of life are 3.1, 9.6 , 6.3 and 25.1 times higher among the daily wager (β=3.1, CI=0.694-14.651), industrial worker (β=9.683*, CI=2.147-43.674), self-employed (β=6.337, CI= 1.433-28.018) and people in services (?=25.197*, CI = 5.807-108.155) as compared to unemployed. In case of industrial workers and service sector's employees it is significant.

The income of the households has also been found to be significantly associated with the quality of life of people. In comparison to the

poor households the next two income groups in order are 1.43 and 2.7 times more likely to have a better quality of life although it is insignificant. The probability of having a high quality of life is 12.3 and 34.3 times higher among the income groups of ?15000- 20000 and above ? 20000 respectively (Table 10).

Conclusion

The foregoing analysis shows that more than a quarter of population is residing with low quality of life whereas high quality of life is enjoyed by 23.75 per cent survey households. There are marked spatial variations in the quality of life as slum dominated areas of Bhan Talaiya, Ghanta Ghar and Cherital possess much lower quality of life in comparison to other zones. Similarly, households of marginalized social class such as scheduled caste and scheduled tribe disproportionately represent low quality of life. It may be due to disadvantageous location (in proximity to nallah and dumping sites) and social niche in the society. As per survey results and binary logistic regression education, nature of occupation and income seem the most significant contributing factors of quality of life. It means that empowerment of men and women is necessary to enhance the quality of life.

Despite 62- 63 per cent contribution in Gross Domestic Product (GDP), issues related with quality of life in urban India were never given due attention in policy making. Fortunately, present government has prioritized the issue with an ambitious Smart Cities Mission. One of the main objectives of the Smart Cities Mission is to improve the quality of life in Indian cities. Jabalpur city is already included in the first list of cities which would be developed as smart city. The development of quality urban infrastructure and efficient service delivery is the main aim of smart city project. The purpose of the Smart Cities Mission is to drive economic growth and improve the quality of life of people by enabling local area development and harnessing technology, especially technology that leads to smart outcomes (Website of Smart City Mission). It is hoped that this will ensure a conducive quality of life to all citizens irrespective of who they are and where they live. It is a welcome news for the urban residents and city government that Jabalpur is ranked at 15th place among 111 cities of India on 'Ease of Living Index 2018' released by Ministry of Housing and Urban Affairs, Government of India in August 2018.

References

Boelhouwer, J. and Stoop, I., 1999, Measuring well-being in the Netherlands: The SCP index from 1974 to 1997. *Social Indicators Research*, 48(1), pp.51-75.

Browne, J.P., O'Boyle, C.A., McGee, H. M., Joyce, C.R.B., McDonald, N.J., O'Malley, K. and Hiltbrunner B., 1994, Individual quality of life in the healthy elderly. *Quality of Life Research*, 3, 235-244.

Census of India, Town Directory, 2001.

City Development Plan of Jabalpur prepared for Jawaharlal Nehru National Urban Renewal Mission, 2005.

Dalkey, N.C. and Rourke, D.L., 1973, The Delphi procedure and rating quality of life factors. *The Quality of Life Concept*, pp.209-221.

Hagerty, M., Vogel, J. and Møller, V., 2002, Introduction. In Assessing *Quality of Life and Living Conditions to Guide National Policy*. pp. 1-11. Springer, Dordrecht.

Johansson, S., 2002, Conceptualizing and measuring quality of life for national policy. In *Assessing Quality of Life and Living Conditions to Guide National Policy*, pp. 13-32. Springer, Dordrecht.

Noll, H.H., 2002, Towards a European system of social indicators: Theoretical framework and system architecture. *Social Indicators Research*, 58(1-3), pp.47-87.

Tiwari, R. and Singh, J., 2010, A study of conditions of slums in Jabalpur City. *Magadh Geographical Review*, 10(1), pp. 142-156.

Tiwari, R. and Singh, J., 2015, Measuring quality of life: a case study of Jabalpur city. *National Geographical Journal of India*, 61(4), pp. 333-348.

Tiwari, R. and Singh, J., 2017, Quality of life of residents in Jabalpur city, *India Regional Symbiosis*, 25(1), pp. 81-94.

Tiwari, R. and Singh, J., 2017, The Quality of life in a metropolitan city: a case of Jabalpur, India *Deccan Geographer*, (In Press).

UNECE, O., Eurostat, 2009, Measuring Sustainable Development.

Wozniak, B. and Tobiasz-Adamczyk, B., 2014, Quality of life and well-being. *Jagiellonian University, Krakow Google Scholar*.

WUP, U., 2009, World Urbanization Prospects: the 2009 Revision. *United Nations, Department of Economic and Social Affairs*, New York, USA.

WUP, U., 2018, World Urbanization Prospects: the 2018 Revision. *United Nations, Department of Economic and Social Affairs, New York*, USA.

Web sources

https://www.census 2011.co.in/urbanagglomeration.php (retrieved on 27th Aug. 2018).

http://smartcities.gov.in/content/innerpage/what-is-smart-city.php (retrieved on 18th Aug. 2018).

http://smartcities.gov.in/upload/uploadfiles/files/MadhyaPradesh_Jabalpur.pdf (retrieved on 22nd July 2018).

https://easeofliving.niua.org_assets_ upload_pdfs_ ease-of-living-national-report (retrieved on 13th September 2018).

●●●

NGJI, An International Refereed Journal
(NGSI-BHU, ISSN: 0027-9374/2017/1666)
Vol. 64, No. 3-4, Sept.-December, 2018

Scheduled Caste Population in an Indian Hill State A Case of Himachal Pradesh

Surya Kant[1]

Abstract

Late Professor S.L.Kayastha, a highly sophisticated, methodological, and humane persona, left an imprint on the discipline of geography in general and Indian geography in particular. For his remarkable contribution, he was elected President of several academic and professional bodies including the National Association of Geographer of India (NAGI). He was innovative and reflective. He was among the pioneers who could realize the importance of introducing teaching and research in sub-field of our discipline such as Population Geography and Environmental Geography including disaster management.

He was a teacher par excellence. He made his janambhumi (place of birth), karambhumi (work area) too. He was born in Dev Bhumi (Himachal Pradesh) and selected the state for his doctoral research degree on the theme: Himalayan Beas Basin: A Study in Habitat, Economy and Society. When, I was invited by Professors V.K.Kumra and R.S.Yadava to contribute a paper for the special number of National Geographical Journal of India to be brought out as a tribute in the memory of Professor S.L.Kayastha, I decided to contribute a paper on any theme focusing on Himachal Pradesh. This paper is my humble tribute to the memory of my beloved teacher.

Introduction

In 2011, one-fourth or 305.9 million persons in India belonged to scheduled population (castes or tribes). In other words, every fourth person in the country fall in scheduled category of population, notified, as a Constitutional obligation,for special welfare benefits for their upliftment. Separately, 201.4 million persons (16.6 per cent) were scheduled castes and another 104.5 million persons (8.6 per cent) scheduled tribes. This is a massive size, almost equal to total population of U.S.A. (314 million in 2012).Scheduled caste population alone make larger than total population of Brazil (199 million in 2012), the fifth largest populated country in the world. The size of scheduled caste population is not only large but also growing fast. Their total population of 51.3 million persons in 1951 increased to 201.4 million persons by 2011, registering an annual compound growth of 2.3 per cent. Against this, total population of India grew at an

1. Professor and Formar Head, Department of Geography Punjab University, Chandigarh.

annual growth rate of 2.0 per cent during the same period.

Historically, this segment of population suffered huge socio-economic deprivation at the hands of the upper castes in Indian society. They had to perform menial jobs, such as scavenging, skinning of hides of dead animals, leather tanning, agricultural labour and so on for the upper castes under a contractual system, the *'zajmani'* system, having the social sanction. Kept out of the caste-system, they were denied the right to resources (e.g. land, water and village commons) and knowledge (e.g. education). Being untouchable, they were forced to live in a secluded space, that too in deplorable living conditions. After the Independence in 1947, the government of India took several welfare measures for their socio-economic upliftment. Some of the important measures included a complete ban on untouchability by making it a punishable act under the Constitution, strict ban on caste based atrocities, right to own and cultivate land, reservation of seats in educational institutions and public sector jobs, and the reservation in the democratic institutions, such as the parliament, the state assemblies, the urban local bodies and the *panchayati raj* institutions, in accordance to their share in total population of India.The reservations, initially made for a period of ten years,remained in force since then.

The special measures initiated by the union and state governments in India brought about a perceptible change in their socio-economic wellbeing and political mobilization. Earlier, the economic and administrative changes induced during the British rule, especially the commercialization of agricultural production and agrarian relations, new employment opportunities in factories, public services, and the army, social reform movements questioning the caste system and caste based inequality, Mahatama Gandhi's efforts to create a movement against untouchability in 1930s, weakening of master-servant relationship in the village social system, political mobilization and creation of *dalit* identity by the leaders, such as B.R.Ambedkar, Jagjivan Ram and Jyotiba Phule, also helped this process.

Nevertheless, this exposed their internal differentials emanating from the caste, sub-caste, clan and class identities. For example, the relatively well-off and politically articulate scheduled castes (henceforth SCs) have cornered the major benefits out of the government largesse. This eventually consolidated the position of the elite groups or individuals within the *Dalit* castes. For instance, the Mahars in Maharashtra, the Malas in Andhra Pradesh, the Pariahs in Tamil Nadu and the Chamars in Uttar Pradesh are relatively better-off than other competing communities within the SCs (Rao, 2009:9). Moreover, rivalries among the lower castes such as Mahars and Mangs in Maharashtra, Malas and Madigas in Andhra Pradesh, Chamars and Chuhras in the north Indian states have emerged as the impediments to political mobilization, further reinforcing cleavages (Chandra et. al., 2008:637).

Further, given the wide differences in historical background across regions, some states have done better than others to improve their socio-economic conditions. For instance, the union territories, as a group, have done better than the states in India. It is generally stated that not only a creamy layer has emerged within the 'scheduled' population but also inter-regional and sub-regional differentials in their socio-economic development have widened further.

Notwithstanding the wide socio-economic, cultural, regional and sub-regional divide within the SC castes in India, they are considered as one homogeneous category not only by the general masses but also by the government and the academicians. It may not be very difficult to understand the government treating these castes as one monolithic block. For the government, it

is functionally convenient and politically correct to distribute welfare benefits.It is, however, difficult to understand why most of the academicians especially the geographers have treated SC castes as one monolith block in their researches.

The number of castes/communities among SCs is quite large in India. At the time of 2011 Census, there were 1208 castes/communities of SCs, the number ranging from a maximum of 101 in Karnataka to a minimum of only four in Sikkim. Of course, there is a multiple counting of castes listed in several states, the number of SC castes is still as high as 540; contradicting the general impression that SC population makes a homogeneous group. There is a wide regional diversity in their geographical distribution, social-economic status, political mobilization and transformation process. Under the democratic system based on equality of voting rights,the castes with higher numerical strength and geographical concentration could reap disproportionately large benefits not only in political but also in economic and social spheres. Castes with higher educational levels cornered not only the larger number of government jobs but also higher positions in administration; increasing their decision-making power in administration along with residential and occupational mobility. Consequently, a growing body of urban based middle class or new middle class or white-collar workers' (occupational) group, sometime termed the elites (Sachchidanand, 1977) or neo-Brahmins of the dalit castes (Parvathamma 1989:128-144), has emerged within them.

Taking a cue from the above statements, the present paper attempts to examine inter-district and inter-caste differentials in size, growth and spatial distribution of SC population in Himachal Pradesh. Himachal Pradesh is considered a development model for hill states in India. With Human Development Index (HDI) value of 0.652 in 2007-08, Himachal Pradesh was placed next only to Kerala among 20 major states of India. Himachal Pradesh is among states of India that have scheduled castes and scheduled tribes both. In 2011, its scheduled population of 2.12 million persons made nearly 31.0 per cent in total population of 6.86 million persons in the state. Separately, scheduled caste population was 1.73 million or 25.2 per cent and scheduled tribe population 0.39 million or 5.7 per cent. In total scheduled population in the state, the share of scheduled castes was more than four-fifths (81.5 per cent). However, at the district level, the share of scheduled tribe population made as high as 81.4 per cent in total population of Lahul and Spiti, and 58.0 per cent in Kinnaur district. While, scheduled caste population was widely distributed across the state, the scheduled tribe population was mainly concentrated in three districts of Lahul and Spiti, Kinnaur, and Chamba, having a combined share of 53.5 per cent in total ST population of the state. Further, there were as many as 57 castes of SCs, against only 10 tribal communities in the state.

The proportional share of SC population in Himachal Pradesh (25.2 per cent) was much higher than the national average (16.6 per cent). Within Himachal Pradesh, SC population in total ranged from a maximum of 30.3 per cent in Sirmaur to a minimum of 7.1 per cent in Lahul and Spiti district; ten of twelve districts in the state having this share higher than the national average. There are 57 SC castes in the state, but 11 top ranking of them, in combine, subsumed about nine-tenths (89.1per cent) of total such population in the state. The two major castes, the Kori/Koli and the Chamar, in combine, made more than a half (55.4 per cent) of the total SC population in the state.

The paper will make an attempt to answer the following research questions with help of data analysis.

1. What is the size and growth of SC

population in Himachal Pradesh?

2. What is the spatial pattern of growth and distribution of SC population at the district level and how has it changed during 1971-2011?
3. Which of the SC castes form the dominant or first ranking caste at the district level and what is the significance attached to such a distributional pattern?
4. How the growth rates of SC population in Himachal Pradesh vary across castes/communities?

For the purpose of the study, data have been picked up from the Census of India, Special Tables for Scheduled Castes, published by the Registrar General and Census Commissioner of India, New Delhi. The district has been selected as the unit of study. In 2011, there were 12 districts in Himachal Pradesh. For studying growth of SC castes/communities, a period of Erone Census decades between 1971 and 2011 has been selected. The 1971 Census was the first to be conducted in Himachal Pradesh after it acquired the present shape following the linguistic reorganized of Punjab in 1966 between Haryana and Punjab and northern Hindi speaking areas getting merged with Himachal Pradesh, and the state getting the status of full statehood on January 25, 1971. There were 10 districts in Himachal Pradesh at the time of 1971 Census. Then, Simla (now Shimla) and Mahasu were the two separate districts. In between 1971 and 1981 Censuses, three new districts of Solan, Hamirpur and Una were formed and Simla and Mahasu merged into one district of Shimla, the number of districts going up to 12 in 1981 from 10 in 1971. Since then, there has been no major territorial change in district administration in the state. The territorial changes made during the reorganization of districts has made it difficult to readjust the population of old administrative units in accordance to newly created administrative units. Hence, for mapping purpose first ranking SC castes at the district level, we remained confined to 1981-2011 census decades.

The paper is divided into the three sections. The first section briefly examines the historical context of the change in nomenclature of these castes from the 'depressed classes' to the *'Dalits'*. The second section is devoted to growth rates of different SC castes/communities in Himachal Pradesh during 1971-2011. The third section examines inter-district and inter-caste differentials in spatial distribution of such castes in the state.

I.

A Journey From 'Depressed Classes' to *'Dalits'*

In the following, an attempt has been made to recapture briefly the historical context of the different nomenclatures by which these untouchable castes of traditional Hindu society were called before turning to *'Dalit'* identity.

Untouchability, rooted in the religious and cultural notion of purity and pollution, is believed to have developed in the later Vedic period. Coinciding with the emergence of the *Brahmanic* literature such as the *Smrits*, the *Samhitas* and the *Upanishads*, the British rulers in India, remaining almost neutral in social matters in the beginning, made a deliberate attempt to ascertain the population of untouchables in India at the time of 1911 Census. The Census Commissioner of British India instructed the provincial Census Superintendents to draw separate enumerations of castes and tribes,classed as Hindus but not conforming to certain standards and were subject to certain disabilities. A ten-fold criterion, adopted for their identification by the census enumerators, provided a common nomenclature, 'depressed classes', to these castes. This was not acceptable to B.R. Ambedkar and other leaders of these castes.Ambedkar,terming it a 'degrading and contemptuous' connotation,

suggested that 'they should be called 'non-caste Hindus', 'protestant Hindus' or 'non-conformist Hindus' or some such designation' (cited in Rao,2009:4).

Keeping in view the stiff opposition from the members of the 'depressed classes', a new term, 'exterior castes', was adopted during 1931 Census. The term, originally suggested by C.S. Mullan, the then Census Superintendent for Assam, was considered as the most satisfactory alternative to the earlier one.Each province was asked to prepare a list of castes, suffering the disability on account of their low social status and being debarred from temples, schools or wells. In view the sharp regional and sub-regional variations in prevailing conditions and practices, Superintendents of Census Operations were not issued precise instructions to frame the list and then to enumerate such castes. Notably, the population figure of such castes and communities arrived at by the 1931 Census was much more comprehensive and precise than the previous ones. However, the new term, 'exterior castes', also did not find favour with their leadership. Hence, a value neutral term, scheduled castes, standing for the castes and communities listed for purpose of scheduling castes and communities to provide certain special benefits, was agreed upon between the British officials and the leaders of these castes. The term 'scheduled castes', in fact, received the official recognition for the first time in Government of India Act, 1935; and in April 1936, the British Government issued the Government of India (Scheduled Castes) Order, specifying certain castes, races and tribes as schedule castes (SCs) in the then provinces of Assam, Bengal, Bihar, Bombay, Central Provinces & Berar, Madras, Orissa, Punjab, and United Provinces.

The 1931 Census adopted the nine-fold criteria in place of ten-fold criteria,used earlier during 1911 Census to identify these castes and communities. The basic criteria, in fact, was the social, economic and educational backwardness, caused due to the traditional practice of untouchability. Obviously, the untouchability was the sole criteria for inclusion/exclusion of these communities in the scheduled list of castes and communities. Later on the Indian Constitution also, legally and officially, adopted the term scheduled castes to design such groups of communities. The Article 341, governing the listing of castes in the scheduled of the Constitution, reads the following:

1. The President may with respect to any State or Union Territory and where it is a state after consultation with the governor thereof, by public notification, specify the castes, races or tribes or parts of or groups within castes, races or tribes which shall for the purposes of this Constitution be deemed to be Scheduled Castes in relation to that state or union territory, as the case may be.
2. Parliament may by law include in or exclude from the list of Scheduled Castes specified in a notification issued under clause (1) any caste, race or tribe or part of or group within any caste, race or tribe, but save as aforesaid a notification issued under the said clause shall not be varied by any subsequent notification.

The term Scheduled Castesis defined in The Article 366 of the Indian Constitution in the following words:

'Scheduled Castes' means such castes, races or tribes or parts of or groups within such castes, races or tribes as are deemed under article 341 to be Scheduled Castes for the purpose of the Constitution.

Being out of the caste system, on the basis of purity and impurity of occupations and eating habits, these castes/communities are also called as 'untouchables', not allowed to touch the upper castes, and their considered inconvenient and

embarrassing, when not needed to perform the specific tasks. M.K. Gandhi stated a reformist movement, *Harijan* Movement, to bring the untouchables in the main stream of Indian society between 1932 and 1936. He gave a new name, *Harijan*, to the untouchables, literally the Sons of the God. To him, untouchability was a social stigma of Hindu social system, to be removed through a social movement. Here, M.K.Gandhi and B.R.Ambedkar differed in their approach to the problem of untouchability. The latter was for the eradication of caste system rather than removing simply the untouchability. Secondly, Ambedkar also wanted their leadership in the hands of untouchables. The British rulers in India agreeing with Ambedkar recommended separate electorates for untouchables, on the pattern of Muslims and Sikhs, in the Communal Award of 1932. Gandhi opposed the award and went on hunger strike against it. Finally, an agreement signed between the representative of Gandhi and Ambedkar in September 1932, popularly known as the Poona Pact,accorded reservation of seats in educational institutions, government jobs and the democratic institutions, such as Lok Sabha and State Assemblies to the SCs in proportion to their share in total population of India.

After years of Independence, the followers of Ambedkar started objecting the use of the term *'Harijan'*, stating that all the human beings are the sons of the God, then why we should be single out? Another argument was that when the *Hari* (God) has failed to do anything tangible for the benefit of his *'janas'* (people or sons), then why we should feel happy in calling ourselves *'Harijans'*. Gradually, Ambedkar also got frustrated with the policies of the Indian National Congress designed to uplift the untouchables. He resigned as the Law Minister from the Union Cabinet, formed his own political party, Republican Party of India, and got converted to the Buddhism along with his followers.

Till now, we have been referring to the three kind of identifies of untouchables: (i) nomenclature semanating out of their caste (*jati*) identities, such as Chamar, Mala, Mang, Mahar and so on, (ii) structural exclusion and inferior status, such as *Asuras*, *Harijans*, *Chandala* etc., and (iii)resulting from administrative and political policies of colonial and post-colonial states, such as Depressed Classes, Exterior Castes, and Scheduled Castes. Now, we move to the fourth and final identity of the untouchables, the generic identities, adopted by the untouchables themselves.The first self-reclaimed identities, emerging in the decade of 1920s, were centred on the ideology of *'Adi'*, standing for early or original people. The untouchables claimed that they are the original inhabitants of this land, and to the rest outsiders or the immigrants. Consequently, they started calling themselves such as *Adi-Andhra*, *Adi-Dradiva*, and *Adi-Karnataka* in south Indian states, *Adi-Hindu* in Uttar Pradesh and *Ad-Dharmi* in Punjab. Of late, they prefer to call themselvesas *'Dalits'* (oppressed), in preference to the official identity of 'Scheduled Castes'. The term 'Dalit', derived from Sanskrit language and literally means 'crushed', or 'broken to pieces', was perhaps first time used by Jyotirao Phule, a revolutionary writer of the nineteenth century. Recently, it came in vogue with the formation of *Dalit* Panther Movement in Maharashtra in 1972, inspired by the 'Black Panthers'Movement of Black Americans in the U.S.A.

Some scholars view it in political terms. According to Sharma (1995) 'the process of the emergence of the word *Dalit* is a part of journey which starts from *harijan* to 'scheduled castes' and from scheduled castes to *Dalit*. Definitely, the former untouchables are now more assertive, aggressive, mobilized and conscious of their electoral importance in the current scenario of vote-bank politics.

II

SC Population in Himachal Pradesh Size and Growth

According to 2011 Census, SC population of 1.73 million persons in Himachal Pradesh, making one-fourth or 25.2 per cent in total population of the state, is quite higher than the national average (16.6 percent).It was more than the combined SC population of Jammu and Kashmir and Union Territory of Chandigarh (1.12 million in 2011), more than the total population of Goa or Arunachal Pradesh (1.46 million and 1.38 million in 2011, respectively), and even higher than total population of Bahrain (1.32 million in 2012). More than one-tenth (10.3 per cent) of the total 16.83 million SCs in the Northwest region resides in Himachal Pradesh.

In 2011, the share of SC population in ten of twelve districts in the state was higher than the national average of 16.6 per cent. It ranged from a high of 30.3 per cent in Sirmaur to a low of 7.1 per cent in Lahul and Spiti district. In one-half of the districts in the state, SC population made one-fourth or more in total population.

The size of SC population differed widely at the sub-regional level. The state can broadly be divided into two type of territories: (i) British ruled, and (ii) Princely states. The former territories, ruled by the British rulers during the colonial rule in India, were a part of Punjab till 1966, when Punjab was linguistic reorganized and Pahari Hindi speaking areas of the state were merged with Himachal Pradesh. The latter ones were ruled by the princely rulers till 1948, when Himachal Pradesh was formed as a centrally administered territory of Indian Union.The present six districts of Kangra, Una, Hamirpur, Solan, Kullu, and Lahul and Spiti represents British rule territory in the state and the remaining six districts of Chamba, Bilaspur, Shimla, Kinnaur, Sirmaur, and Mandi, representing the Princely ruled territories. These two type of areas still differ from each other in several aspects. In 2011, nearly 51.8 per cent of total SC population in Himachal Pradesh resided in Princely ruled territories against its share of 48.5 per cent in total population of the state. While, 48.2 per cent of total SC population resided in British ruled territories against 51.5 per cent of total population in the state. On an average, 27 SCs residing after each 100 persons in former princely territories, against less than 24 in former British ruled territories. It means feudalism provided a better fertile ground to produce and sustain a class of people providing menial services to upper castes in Himachal Pradesh, in line with other parts of India.

Among the districts, the size of SC population ranged from a high of 319 thousand or 3.2 lakh persons in Kangra to only 2235 persons in Lahul and Spiti- a district highly dominated by tribal population. The five top most districts, namely Kangra, Mandi, Shimla, Solan, and Sirmaur have, in combine, more than two-thirds (66.7 per cent) of total SC population in the state. Against this, their combined population made 64.6 per cent in state's total population.Shimla, Solan, and Kangra districts, where are located the three largest towns of Shimla, Solan and Dharmshala, have, in combine, 40.5 per cent of the total SC population against 42.3 per cent share in total population of the state. These facts and figures reveal that, at least in the case of Himachal Pradesh, there is hardly any association between the degree of urbanization and the concentration of SC population.

In Himachal Pradesh, there are 57 castes or communities of the SCs. Of them, seven are the "De-notified tribes" or *"Vimukat Jatis"*, which were declared first as the "Ex-criminal tribes' and then notified as Scheduled Castes, included-

1. Bangalis
2. Burar/Berar
3. Bauria

4. Gandhilas
5. Maujas/Marecha
6. Nats
7. Sansis

These communities differ widely in their population size. In 2011, the Kori/Koli with about half a million persons was the largest SC caste and the Perna, with only 15 persons, the smallest of the all. It is to be noted here that apart from these 56 *Dalit* castes enumerated in Punjab by the 2011 Census, there were 38,299 persons, making 2.2 per cent of total SC population in the state and belonging this or that community of SC population, have been put under the category of 'unspecified castes' because they either refused to report to the Census enumerator their castes and simply reported as *'Harijan'* or 'scheduled caste' or the enumerator found it difficult to put the enumerated person under this or that of the 56 SC castes notified by the Himachal Pradesh Government.

Kori/Koli, the most dominant SCcaste of Himachal Pradesh Punjab in 2011, made 28.9 per cent in total such population of the state. In other words, roughly three of each ten SCs in Himachal Pradesh are Koris/Kolis. The term Kori/Koli is used at least in three different senses. One of these is used to signify the residents of Kullu (Singh, 1995:762). The Chamar etc., a second ranking SC caste, made another 26.5 per cent in total *Dalit* population of the state. The combined population of these two castes made 55.4 per cent or majority of the SCs in the state. So far as distribution of welfare benefits or electoral politics is concerned, such kind of caste arithmetic is full of implications. The third largest SC caste, Lohar, having black-smithy as their traditional occupation, made another 9.8 per cent in total SC population. With another 9.0 per cent population the *Julaha* or *Kabirpanthi*, having the weaving as a traditional occupation, is the fourth largest SC caste. These four castes, in combine, made roughly three-fourths or 74.3 per cent of the total SCs in Himachal Pradesh; and the twelve top ranking castes, each having one per cent or more in total SC population in the state, in combine, made nine-tenths or 90.1 per cent of the total SC population in the state (Table 1). Evidently, notwithstanding the fact that there are as many as 57 SCcastes/communities in Himachal Pradesh, only a few among these predominates the SC population of the state; and four of them making nearly three-fourths of total such population in the state.

SC population in Himachal Pradesh has registered an annual growth rate 2.04 per cent during 1971-2011, against the state recording an annual growth rate of only 1.73 per cent during the same period. During this period, the SC population of 0.77 million in 1971 increased to 1.73 million in 2011, registering an absolute increase of 0.96 million persons. This entire increase might have not occurred mainly due to natural increase and/or migration;some tribal communities reporting them as scheduled castes has also contributed to this. For example, between 1981 and 1991, the share of SC population in Kinnaur district increased to 26.9 per cent from 10.6 per cent, and in Lahul and Spiti to 7.1 per cent from 2.3 per cent. Census of India (1991:21) reported that in these districts tribal communities preferred to return themselves as SCs rather than STs. Secondly, in 1971 not a single person was reported from five SC castes namely Barwala, Gandhila, Gagra, Marija, and Perna, but in 2011 their combined population made 451 persons. Obviously, there is always a need to be careful, while calculating the growth rate of SC population. Several factors including the reporting, government decision to add/delete castes in SC list can contribute to non-comparability of SC population figures reported in two different Census decades.

Table 1: Eleven Top-Ranking Dalit orSC Castes in Punjab, 2011

Rank in 2011	Name of SC Caste	Percent to total SC population	Cumulative %
1	Kori/Koli	28.88	28.88
2	Chamar, Jatia Chamar, Rehgar, Raigar, Ramdasi, Ravidasi, Ramdasia, Ramdasia Sikh, Ravidasia, Ravidasia Sikh	26.53	55.41
3	Lohar	9.83	65.25
4	Julaha, Julahe, Kabirpanthi	9.02	74.27
5	Dumna, Mahasha, Doom	4.84	79.11
6	Hali	2.50	81.61
7	Balmiki, Chuhra, Bhangi	2.01	83.61
8	Sipi	1.56	85.17
9	Chanal	1.41	86.58
10	Badhi, Nagalu	1.29	87.87
11	Jogi	1.22	89.01
12	Chhimbe, Dhibi	1.05	90.14

Source: Calculated from Census of India, Special Tables for Scheduled Castes, for 2011, Registrar General and Census Commissioner of India, New Delhi.

Different SC communities recorded differential growth rates during 1971-2011. Annual compound growth rate varied from a high of 16.8 per cent in the case of the Bauria/Bawaria to a negative growth of -6.7 per cent for the Barar/Burar. While, the former are professional hunters, the latter traditionally specializes in making combs out of reeds. The numerical strength of both the castes is quite low in the state. Among the 57 SC castes in the state at the time of 2011 Census, the former ranked at 42nd and the latter on 49th position. Both the castes are small sized. More than two-thirds of 497Bawarias in the state were, however, residing in three districts of Kangra, Shimla, and Solan.

On the whole, 34 of 57 castes in the state had a higher growth rate than the state average (2.04 per cent) for all SCs (Table 2). However, more than three-fifths of these castes are small in population size,each having less than five thousand persons. Among the major castes, each having more than ten thousand persons, it is only Lohars, Halis, Balmikis, Sipis, Badhis, Jogis, Chhembe, Sarde and Darais, who recorded a growth rate higher than the state average for all SCs. Growth rates of the Lohars and the Halis, making the third and the sixth ranking castes in the state, need the special attention of the state government to spread family welfare program among these two castes for uplifting their social wellbeing. Particularly, the Halis are predominantly rural by residence, agriculturalists by occupation and have low level of literacy. For example, 96.6 per cent of Halis were residing in rural areas, 60.0 per cent of their main workers were engaged in agriculture and only 58.0 per cent were literate in 2011.

Table 2: Growth Rate of Different SC Castes in Himachal Pradesh during 1971-2011

Rank in 2011	SC Caste Name	Total Population in		Rank in 1971	CAGR (%)
		2011	1971		
	All Schedule Castes	1,729,252	769,572		2.04
1	Kori, Koli	499,473	237,614	1	1.87
2	Chamar, JatiaChamar, Rehgar, Raigar, Ramdasi, Ravidasi, Ramdasia, Mochi	458,838	224,574	2	1.80
3	Lohar	170,046	41,916	5	3.56
4	Julaha, Julahe, Kabirpanthi, Keer	155,956	77,145	3	1.78
5	Doom, Doomna, Dumna, Dumne, Mahasha	83,757	44,142	4	1.61
6	Hali	43,218	6,761	12	4.75
7	Balmiki, Bhangi, Chuhra, Chura, Chuhre	34,690	14,310	6	2.24
8	Sipi	26,907	8,145	10	3.03
9	Chanal	24,340	12,434	7	1.69
10	Badhi, Nagalu	22,352	8,728	9	2.38
11	Jogi	21,096	3,570	15	4.54
12	Chhimbe, Dhobi	18,076	2,798	17	4.77
13	Batwal	16,690	7,582	11	1.99
14	Sarde, Sarera, Sarare, Siryare, Sarehde	15,943	6,615	13	2.22
15	Darai, Daryai	10,982	628	32	7.42
16	Dhaki, Toori	9,657	3,463	16	2.60
17	Teli	9,425	1,823	22	4.19
18	Ad Dharmi	6,217	10,348	8	-1.27
19	Dhogri, Dhangri, Siggi	6,033	2,331	19	2.41
20	Barad	5,890	603	33	5.86
21	Bhanjra, Bhanjre	4,917	2,736	18	1.48
22	Dagi	4,683	1,548	23	2.81
23	Bangali	4,294	889	29	4.02
24	Daule, Daole	4,134	1,247	24	3.04
25	Banjara	3,285	1,162	26	2.63
26	Hesi	3,209	1,235	25	2.42
27	Rehar, Rehara	3,018	1,922	20	1.13
28	Sanhai	2,585	972	28	2.48

29	Bazigar	2,365	663	31	3.23
30	Sansi, Bhedkut, Manesh	2,276	470	37	4.02
31	Megh	1,779	1,082	27	1.25
32	Phrera, Pherera	1,744	464	38	3.37
33	Dhaogri, Dhuai	1,606	203	43	5.31
34	Pasi	1,496	109	46	6.77
35	Sikligar	1,476	380	40	3.45
36	Bansi	1,419	553	34	2.38
37	Sansoi	1,389	686	30	1.78
38	Od	1,135	497	36	2.09
39	Thathiar, Thathera	662	395	39	1.30
40	Khatik	587	251	42	2.15
41	Darain	544	3,597	14	-4.61
42	Bauria, Bawaria	497	1	50	16.79
43	Mazhabi	460	118	45	3.46
44	Kamoh, Dagoli	316	362	41	-0.34
45	Nat	311	151	44	1.82
46	Barwala	285	**		
47	Sanhal	220	1	51	14.44
48	Dhanak	172	519	35	-2.72
49	Barar, Burar, Berar	116	1,829	21	-6.66
50	Gandhila, Gandil Gondola	92	**		
51	Sirkiband	63	10	48	4.71
52	Sapela	62	4	49	7.09
53	Bandhela	58	79	47	-0.77
54	Karoack	38	1	52	9.52
55	Gagra	33	**		
56	Marija, Marecha	26	**		
57	Perna	15	**		
	Unspecified Castes	38299	29,906		0.62

Source: Calculated from Census of India, Special Tables for Scheduled Castes, for the decades 1971 and 2011, Registrar General and Census Commissioner of India, New Delhi

1. CAGR stands for Compound Annual Growth Rate

** No population reported either in 1971 or 2011 or both the Census decades

Notes:

1. In 1971, Doom etc, and Dumne (Bhanjre) were treated as the two different categories. Whereas, in 2011 both were clubbed together to make one category. For comparability, the two categories have been put as one category in 1971 also.

2. In 1971, *Julahe* and *Kabirpanthi, Julaha* or *keer* were treated as the two different castes. Coming to 2011 both categories were clubbed together to make as one category. For the purpose of comparability, the two categories have been merged together in 1971 Census too.
3. In 1971, the Chuhre caste, which was treated as a separate caste from Balmiki, Chura or Bhangi, was put together with the latter category of population in 2011. For comparability, population of Chuhre in 1971 has been added to the category of Balmiki, Chura or Bhangi
4. In 1971, Sarde caste was treated independent of Sarera and Sarehde but was treated as one category with the latter category of population in 2011. For comparability, both category of population was clubbed together to make one category for 1971 also.
5. Similarly, Pherera and Phrera treated separate categories in 1971 were put as one category in 2011. For comparability, both categories of population we put under one category for 1971 also.
6. Rehar and Rehara were also merged to make one category in 2011. For comparability, the two populations were added under one category for 1971 also.
7. Daule and Daole, treated separately in 1971, were merged into one category in 2011. For comparability, the two populations were added under one category for 1971 also.
8. In 1971, no population was reported for five castes of Barwala, Gandhila, Gagra, Marija and Perna, but reported in 2011.

Against the high population growth rate among the Halis and the Lohars, the Koris/Kolis, Chamars, Julahas, Dooms, Chanals and Batwals are growing at a rate, which is quite close to average growth (1.73 per cent) of the state as a whole. Literacy rate among the Chamars was 71.0 per cent,56.0 per cent of their workers were engaged in non-farm activities, and another 40.0 per cent cultivators. Koris/Kolis were though predominantly rural by residence and had relatively low literacy level but 70.0 per cent of their main workers were cultivators.

III

SC Population in Himachal Pradesh Spatial dispersion and concentration

The geographical distribution of *Dalit* population in the state reveals that there are areas of concentration and dispersal too.

Of the twelve districts at the time of 2011 Census, four top ranking districts in numerical strength of SC population, in combine, stole more than a half (57.4 per cent) of total such population in the state. In this category are included Kangra, Mandi, Solan, and Sirmaur districts. Kangra district alone shared roughly two-fifths or 18.5 per cent of total SC population, and this district along with Mandi had more than one-third (35.5 per cent) of total such population in the state. On the other side of the scale, six lowest ranking districts had only about one-fifth or 19.5 per cent of the total SC population in the state. This category included Una, Chamba, Hamirpur, Bilaspur, Kinnaur, and Lahul and Spiti districts. Among these districts, two tribal majority districts, Kinnaur, and Lahul and Spiti, had, in combine, only about 17 thousand SCs, making less than 1.0 per cent of total such population in the state. The size of SC population in Kangra district is so large that it is almost equal to the combined SC population of three districts of Una, Chamba, and Hamirpur.

However, the picture differs when examined in term of SC share in the total population

of individual districts.Sirmaur district had the highest proportion (30.4 per cent) of SCs in its total population, placing it among the top twenty districts in the entire northwestern region in this context. In five districts (Bilaspur, Shimla, Kullu, Solan, Mandi, and Sirmaur), SC population made more than one-fourth in their total population. In other words, in each of these districts more than one among each four persons belong to this or that SC community. On the other side of the scale, the two districts, Lahul and Spiti and Kinnaur, had this share of less than 20.0 per cent or one-fifth. However, except Lahul and Spiti all other districts in the state had SC share higher than the national average (16.6 per cent).

Table 3: District-wise shares of SC population in Himachal Pradesh, 2011

District Name	Share in total population (%)	Share in total SC population (%)	Index of concentration
Kangra	18.47	22.00	0.84
Mandi*	16.99	14.56	1.17
Shimla*	12.48	11.86	1.05
Solan*	9.51	8.45	1.13
Sirmaur*	9.30	7.72	1.20
Kullu*	7.09	6.38	1.11
Una	6.68	7.59	0.88
Chamba	6.46	7.56	0.85
Hamirpur	6.32	6.62	0.95
Bilaspur*	5.72	5.56	1.03
Kinnaur	0.85	1.23	0.69
Lahul and Spiti	0.13	0.46	0.28

*Districts having higher share of SC population than their share in total population of the state

Notes:

1. Generally, the districts having territories formerly ruled by Princely rulers have high concentration of SC population than those under the British rule.
2. Index of concentration has been calculated by taking ratio between the percentage share of a district in total SC population of state and its share in total population of the state. Index value than of higher than 1 for a district indicates to relatively higher concentration of SC population and vice versa.

At least, six districts in the state have a higher concentration of SC population. This category included Mandi, Shimla, Solan, Sirmaur, Kullu and Bilaspur districts. Against this, very low concentration districts included Kinnaur and Lahul and Spiti, having high concentration of tribal population (Table 3).

How different SC castes are ranked at the local or district level make an interesting part of their local and regional level distribution. In other words, which one of the SC castes in a district make the first ranking caste, and whether the

same caste also make the majority among all such castes in that district makes an interesting aspect of distributional pattern of SC population at the local level. For the purpose, the proportional share of the top or first ranking caste in total SC population for individual districts was calculated and mapped for 1981, 1991, 2001 and 2011 Census decades. The main objective behind such an exercise is to understand the internal composition of SC population at the local level. The concentration of a particular caste in a district or a group of districts carries a great significance in distribution of welfare benefits, political mobilization and riding the ladders of political power. As already stated that the Koris/ Kolis is the largest SC community in the state. In 2011, they made first ranking SC caste in five districts of Kullu, Sirmaur, Shimla, Kinnaur, and Mandi, except Kullu all having former princely ruled territories. Also, Koris formed the SC majority caste in all but Mandi district of this category (see Table 4 and Fig.1). The Chamars, the second largest SC caste in the state, was the first ranking caste in another five districts, including Una, Bilaspur, Kangra, Hamirpur, and Solan, except Bilaspur all fall in former British ruled territories. Also, they formed SC majority caste in Una and Bilaspur districts. Hali, the sixth ranking SC caste in the state, made the first ranking caste in Chamba district, but not a majority caste, and the Chanal, the ninth ranking SC caste in Himachal Pradesh, forming the first ranking as well as the majority SC caste in Lahul and Spiti district. Thus, in seven of the twelve districts in the state the first ranking SC caste also made the majority caste. Koris made majority SC caste in maximum number of districts (four) followed by the Chamars(two), and the Chanals(one). In four districts, two SC caste combination made the majority. In Chamba district, it was Hali-Sipi combination, in Mandi, Kori-Chamar combination, in Hamirpur, Chamar-Julaha combination, and in Solan, Chamar-Kori combination. In the remaining district of Kangra, it was three caste combination: Chamar-Julaha-Lohar. In this way, Kangra district has the most diversified SC caste structure, against this Shimla having the least diversified one. Among different SC castes, the Koris and the Chamars are not only the two largest and most widely distributed castes in Himachal Pradesh but also find them highly concentrated in areas of their dominance. Against this, Lohars, Julahas, Dooms, and Balmikis are though in the category of major SC castes in the state but have a widely disperse distribution in the state.

Such a distributional pattern of SC castes in the state, at least of first ranking castes in districts, has remained continued since 1981 with few changes: the Chanals replacing the Koris,

Table 4 A: First Ranking SC Caste by Districts in Punjab, 2011

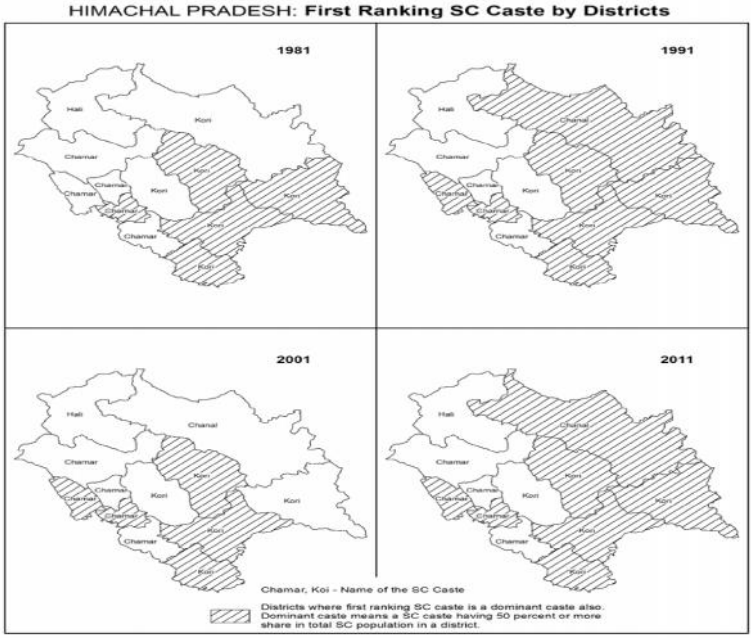
Name of the District	Name and share of First Ranking SC Caste (%)	Name of the District	Name of First Ranking SC Caste
LAHUL & SPITI	Chanal, 50.7	Chamba	Hali, 36.8
KULLU	Kori/Koli, 68.1	Kangra	Chamar, 34.0
UNA	Chamar, 58.6	Mandi	Kori/Koli, 33.6
BILASPUR	Chamar, 51.5	Hamirpur	Chamar, 47.7
SIRMAUR	Kori/Koli, 59.1	Solan	Chamar, 36.0
SHIMLA	Kori/Koli,69.2	KULLU: Districts, where first ranking SC caste is also a dominant caste	
KINNAUR	Kori/Koli, 58.3		

Table 4B: Two/Three SC Caste Majority Districts in Punjab, 2011

Name of the District	Name and share of SC Caste (%)	
Chamba	Hali (36.8)+ Sipi (17.3)	= 54.1
Kangra	Chamar (34.0) +Julaha(12.0)+Lohar (8.9)	= 54.9
Mandi	Kori/Koli (33.6) + Chamar (23.7)	= 57.3
Hamirpur	Chamar (47.7) + Julaha (22.1)	= 69.8
Solan	Chamar (36.0) +Kori/Koli (25.3)	= 61.3
	Total	= 05

as the first ranking caste in Lahul and Spiti; Chanals and Koris losing their dominant SC caste status in Lahul and Spiti and Kinnaur, respectively in 2001 to regain in 2011; and Chamars acquiring SC dominant caste status in Una after 1981 (Fig.1).

Yet, another way of looking at the geographical distribution of SC population is to ex-



amine in terms of urban-rural distribution. Urban mobility transforms not only their occupational structure but also enhances awakening against the caste based discriminations and prejudices, helps in political mobilization and upward socio-economic mobility. In general, SCs are predominantly rural by residence. In Himachal Pradesh, only 7.1 per cent of them were residing in urban areas against the state average of 10.0 per cent in 2011. Within the SC castes, there were sharp inter-caste differentials in degree of urbanization. While, the Sipis, Meghs,Chanals, Sanhais, Ods, Bansis, Darains, Dagis, Dhakis, and Dooms were among the least urbanized SC communities in the state, Dhaogris, Thathiars, Gagras, Dhanaks, Marijas, Pernas,

Nats, Khatiks, Pasis, Sapelas, Balmikis, and Sikligarswere highly urbanized castes (Table 5). Except, Balmikis, Dooms, and Sipis, none of above mentioned castes come among the top ranking SC castes in the state. Two top ranking SC castes in the state, Koris (4.4 per cent) and Chamars (5.8 per cent), fared below the average (7.1 per cent) for all such castes in the state. In the case of castes such as Nats, Balmikis, Sepelas and Nats, it is the nature of crafts/occupation the people from the castes perform that makes it necessary to stay in urban areas, otherwise it hardly makes any visible difference in their income/educational/professional levels.

It is generally believed that there is a high positive association between urban living, on one hand, and high literacy level and occupational diversity, on the other. However, this has not been found true in the case of SC castes in Himachal Pradesh. Rather, there are glaring exceptions to this, resulting in a negative association (r = -0.138) between urbanization and literacy rate. For example, there is a high level of literacy and occupational diversification notwithstanding the moderate to low level urbanization among the Lohars, Dumnas, Chamars, and Julahas in Himachal Pradesh. In contrast, the level of literacy is quite low among the Bangalis, Baurias/Bawarias, Dhanaks, Sapelas, and Khatiks in spite of high degree of urbanization. This indicates that it is the arts and crafts, which some of these castes perform compel them to move to urban areas, otherwise urban living hardly makes any significant dent on their living standards and social awakening.

Table 5: List of the least and the high urbanized Dalit Castes/Communities in Himachal Pradesh, 2011

Urbanization Level	Name of Caste with degree of urbanization (in %)
Least Urbanized	Sipi (1.8), Megh (2.1), Chanal (2.3), Sanhai (2.6) Od (2.7), Bansi (3.0), Darain (3.1), Dagi (3.2), Dhaki (3.4), Doom/Doomna (3.5) Total=10
Highly Urbanized	Dhaogri (25.3), Thathiar (31.6), Gagra (33.3), Dhanak (34.3), Marija (34.6), Perna (40.0), Nat (42.8), Khatik (52.1), Pasi (55.6), Sapela (58.1), Balmiki (67.8), Sikligar (85.0) Total= 12
State Average: 10.0 %	SC Castes Average = 7.1 %

Note: Bandhelas and Sirkibands were completely rural by residence

In Himachal Pradesh, the majority of SC main workers (50.4 per cent) in 2011 was working as cultivators. This is the highest share for any state in India. Among Koris, the largest SC caste in the state, this share was as high as about 70.0 per cent, 58.1 per cent for Halis, 45.0 per cent for Lohars, and about 40.0 per cent for Chamars. Among Dagis, though a small population sized SC caste in the state, this share was as high as 76.2 per cent. Only a small share of SCs main workers (3.6 per cent) was employed as agricultural labourers. This share was as low as 1.8 per cent for Halis and 3.1 per cent for Koris/Kolis. However, some of the small population sized SC castes such as Bandhelas and Gagras were heavily dependent on farm labour to earn their livelihood. Proportional share of agricultural labourers was as high as about 82.0 per cent in the case of Bandhelas. Some of the SC castes such as Sikligars, Banjaras, Dooms, Ods, and Sanhals were still engaged in traditional household industries. The share of household industries workers among Sikligars was 13.5 per cent, against the state average of about 2.0 per cent for such castes. On the other side of the scale, some of the SC castes such as Balmikis, Pasis and Khatis had highly diversi-

fied occupational structure, in each case more than nine-tenths of their worker were engaged in non-farm activities and good proportion of their population having urban living. For example, majority of Khatiks (52.1 per cent) were living in urban areas of the state. In the case 45 out of 57 SC castes in the state, the share of non-farm workers was more than one half, and for 24 SC castes this share was as high three-fourths or more. Pernas, Sapelas, Sirkibands, Sikligars, Balmikis, Mazhabis, and Sanhals were the top ranking caste in the context, each having more than 95.0 per cent of their main workers engaged in non-farm activities. Interestingly, in the neighbouring Punjab, Mazhabis are predominantly rural and agricultural. In this way, SCs in Himachal Pradesh are, generally, literate and educated, working mostly as cultivators in the farm sector or employed in government/private sector owned industries/services. They are well aware of the issues and problems facing their communities, but are not radicalized, as in the case of the neighbouring Punjab. In Punjab, they fight tooth and nail against the upper castes in the case of caste based discriminations, and reply the Jat Sikh youths in their language (see Judge, 2004:100-131; Vairagi, 2003:5). In Himachal Pradesh, SCs do not have their separate temples or gurdwarawas, as in case of Punjab. Of the nearly 13 thousand villages in Punjab, about 10 thousand villages have separate Dalit Gurdwaras (see Chachrari, 2003:33).

Conclusions

India has a massive size of SC population. Account for 201 million persons as per the 2011 Census, their population was higher than the total population of Brazil- the fifth largest country in the world. These castes, however, differ widely across states and districts in their demographic and socio-economic characteristics. Officially known as the Scheduled Castes, they prefer to be addressed by *Dalit* identity.

Himachal Pradesh, a progressive hill state located in the northwest India, has one-fourth share of SCs in its total population, against the national average of one-sixth or 16.6 percent. Its SC population of 1.73 million persons in 2011 was more than the entire population of Arunachal Pradesh or Goa. SC population in the state differs widely in size, growth, and spatial distribution. The four topmost districts, in numerical strength, subsumed more than a half (57.4 per cent) of the total SC population in the state, against this the six lowest ranking districts had, in combine, only about one-fifth of the total such population. At the level of individual districts, while Kangrawas at the top with 3.2 lakh persons or 18.5 per cent of the total SC population in the state, Sirmaur had the highest proportional share (30.4 per cent) of SC population in its total population, placing it among the 20 topmost districts in the entire northwest region in this context. Eleven of the twelve districts in the state had this share much higher than the national average of 16.6 per cent.

There were 57 SC castes in the state, the highest number of such castes in the entire northwest region; seven of them are ex-criminal tribes, notified as Scheduled Castes. Four of the 57 SC castes in the state were so large in their numerical strength and geographical spread that these, in combine, had about three-fourths or 74.3 per cent of total such population in the state. Koris/Kolis, the largest SC caste, alone had 28.9 per cent of total such population and along with the Chamars subsumed more than a half or 55.4 per cent in total such population of the state. The Koris made the dominant SC caste in four of the twelve districts in the state, the Chamars in another two districts, and the Chanals in one district. In general, Kori/Koli caste was most widely and dominantly distributed in former princely ruled territories, while the same was true of the Chamar caste in territories formerly ruled by the British ruler in India. On an average, there were 27 SCs after

100 persons in former princely ruled territories, against less than 24 in former British ruled territories, indicating to a higher capacity of feudalism to sustain a class of people providing menial services to upper castes in the society. During 1971-2001, SC population in the state grew at a much faster rate (2.04 per cent per annum) than the total population (1.73 per cent). The majority of small population sized SC castes were growing at a very fast rate; Bauria/Bawaria recording a growth rate of 16.8 per cent per annum. Among the major castes, it is only Lohars, Halis, Balmikis, Sipis, Badhis, Jogis, Chhembe, Sarde and Darais, who recorded a growth rate higher than the state average for all SCs. Growth rates of the Lohars and the Halis, making the third and the sixth ranking castes in the state, need the special attention of the state government to spread family welfare program among these two castes for uplifting their social wellbeing. Both the castes are agricultural and predominantly rural by residence.

Like other parts of India, the SCs in Himachal Pradesh are predominantly rural by resident. The degree of urbanization among SC castes was 7.0 per cent, against 10.0 per cent for the state as a whole. Nevertheless, some of the SC castes are highly urbanized and have a high degree of occupational diversification. Interestingly, some of the SC castes are though predominantly rural by residence but have high level of literacy and occupational diversification. More than one-half the SC main workers were reported as cultivators by 2011 Census, the highest share for any state in India.

Acknowledgement: The paper has been prepared with financial assistance from the University Grants Commission, grant given in the form of a Major research project. The author is thankful to the U.G.C., New Delhi for the financial assistance.

References

Initially, Untouchability was the main criterion but now there are castes and communities in the scheduled list of castes and communities which never experienced untouchability. Ex-criminal tribes, such as Bangalis, Baurias and Sansis in Punjab list and several OBC castes such as Lohar, Jogi and Dhobi in Himachal Pradesh list come in this category.

Census of India (1991), *Primary Census Abstract: Himachal Pradesh, Part II-B*, Directorate of Census Operations, Himachal Pradesh, Shimla, p.21.

Chandra, Bipin, MridulaMukerjee and Aditya Mukerjee (2008), *India Since Independence*, Penguin Books, p.637.

Charchrari, Mohinder S. (2003), Lessons that can be learnt from the Talhan episode, *The Spokesman Weekly's Monthly Issue*, July.

Judge, Paramjit S. (2004), Interrogating changing status of Dalits of Punjab, In Harish K. Puri*ed.Dalits in Regional Context*, Rawat Publications, Jaipur.

Parvathamma, C.(1989), *Scheduled Castes at the Cross Roads*, Ashish Publishing House, Delhi

Rao, YagatiChinna*ed.* (2009), *Dividing Dalits: Writings on Sub-Categorisation of Scheduled Castes*, Rawat Publications, Jaipur, p.9.

Sachchidanand (1977), *TheHarijan Elite*, Thompson Press, Faridabad.

Sharma, K.L. *ed.* (1995), *Social Inequality in India, Profiles of Caste, Class, Power and Social Mobility*, Rawat Publications, Jaipur.

Singh, K.S. (1993), *The Scheduled Castes: People of India Series, Vol.II*, Oxford University Press, New Delhi.

Vairagi, Karnail (2003), Talhankanddharmosamajlayeeiksharamnaakghatna, *Begumpur a Shahar* (Punjabi Weekly) June 23.

●●●

NGJI, An International Refereed Journal
(NGSI-BHU, ISSN: 0027-9374/2017/1679)
Vol. 64, No. 3-4, Sept.-December, 2018

Tourism Supply as a Catalyst of Tourism Development in Bishnupur District, Manipur

Shabina Hussain andAteeque Ahmad

Abstract

Abstract: Tourism industry plays a key role for the development of any region where it has immense beauties that may be natural or man-made. It can offer diverse job opportunities to boost the other economic activities. Economic activities can be developed through the development of tourism products include: transportation services, marketing system, accommodation services, communication system, entertainment, recreation and many more; and these are interlinked with the financial influx of the nation. Tourism industry is drivenwith the physical, cultural, religious, and historical attractionsat each and every destination region. With these immense potential of attraction the backward and geographically isolated North-eastern region has a lot of opportunities to develop tourism industry by increasing the opportunities for employment and boost up their economy. Attractions and the allied economic activities of tourism industry are the fundamental elements for tourism development which has been considered as tourism supply at the destination. Bishnupur district is one of the smallest districts of the isolated and backward state Manipur having potential of physical, cultural, religious and historical attractions but it has not been develop due to the inadequacy of its basic elements. The study explored the attractiveness evaluation of nine tourist regions and examined the availability of tourism infrastructure at the destination by using observation method and schedule method through visitors as respondents during field visit. Principal component analysis method has been used to analyze the motivational factors of destination region and arbitrarymethod has also been used. The findings of the study highlight the various tourism attraction activities and also discovered the various suggestive features for the promotion of tourism industry.

Keywords: *backward, catalyst, demand,tourism supply*

Introduction

Tourism industry plays a key role for the development of the economic condition of the developing countries like India. It directly effects to increase the opportunities of jobs and

1. Research Scholar, Department of Geography, Aligarh Muslim University, Aligarh, U.P. - 202002, Email : shabinahussain827@gmail.com
2. Professor and Chairman Department of Geography, Aligarh Muslim University, Aligarh, U.P. - 202002, Email : ateeque2227@gmail.com

foreign exchange earnings of the countries. It is the largest and fastest growing industry in the globalized world (Das, 2013) and also the most vibrant tertiary activity in India (Patel, 2012). It is the multi-billion that generatessecond highest revenue next to oil industry since the last decade (Kakkar and Sapna, 2012) and therefore, it is identified as one of the major source of the economic growth in the developing and least developed areas. India is unique in diversities with endless varieties of physical features and cultural patterns and thus India is "epitome of the world". These diversities are the major reasons for the development of tourism industry in India to attract more foreign tourists.The foreign tourist arrivals (FTAs) in India during 2014 witnessed 77.03 lakh with a growth rate of 10.6% which is higher than the medium growth rate of 4.7% witnessed in global international tourist arrivals (UNWTO, 2015). The FTAs in 2013 has witnessed 69.68 lakh and it has to be increased with the foreign exchange earnings (FEEs) of Rs. 1, 20,083 crores with a growth rate of 11.5% in 2014 (Annual Report, 2014-15). It witnessed 80.3 lakh during 2015 and it has increased to 88.9 lakh (provisional) with a growth of 10.7% in FTAs in India and its FEEs from tourism were Rs. 1,55,650 crores (provisional) with a growth of 15.1% in 2016 (Annual Report, 2016-17). Major parts of the country are having lots of potential for tourism but it has not been too develop and not familiar to the modernized world due to the inadequate tourism infrastructures.Like, north-eastern region of the country is well-blessed by nature and rich cultural heritage which can make easily a tourism destination and it canboost up its economy through tourism development.

This is one of the most backward regions of the country and its socio-economic condition get disturbed due tothe common political instability, insurgent activities and ethnic clashes. Manipur is one of the small states in north-east India wherein arises many questions about the poor performance and slow progress of tourism sector, Bishnupur is one of the smallest districts of the state Manipur but it can have an opportunity to generate many direct and indirect jobs related to tourism and also to increase the economy of the state. Government of India has announced two new schemes viz.Pilgrimage Rejuvenation and Spiritual Augmentation Drive (PRASAD) and *SWADESH DARSHAN* in the Budget 2014-15 to promote the tourism industry in the country. Initially, Himalayan region, North eastern region, Coastal region, Krishna and Buddhist circuits have been identified to developunder *SWADESH DARSHAN* to provide the opportunities of jobs through the rich culture, historical, religious and natural heritage of the country (Annual Report, 2014-15). In order to develop and promote the tourism industry in the North eastern states, the 3rd International Tourism Mart was organized at Shillong in state Meghalaya from 13th to 15th October, 2014 to showcase the tourism potential of North eastern states of the country at international level (Annual Report, 2014-15). Considering the development of tourism potential in Bishnupur district, little attention has been given to explain the supply and demand components of tourism. Tourism supplies including attractions and infrastructures are the basic components of tourism development whether it act as a catalyst of visitors' demand (shown in figure 1). Realizing the opportunity to increase the inflow of visitors (both excursionists and tourists) the Directorate of Tourism Department has taken initiatives to reduce the infrastructure gaps at the destination. This results the creation of many millions of jobs to the peoples as well as destination region and also promotes the GDP growth and per capita income of the nation through the smokeless industry, i.e. tourism.

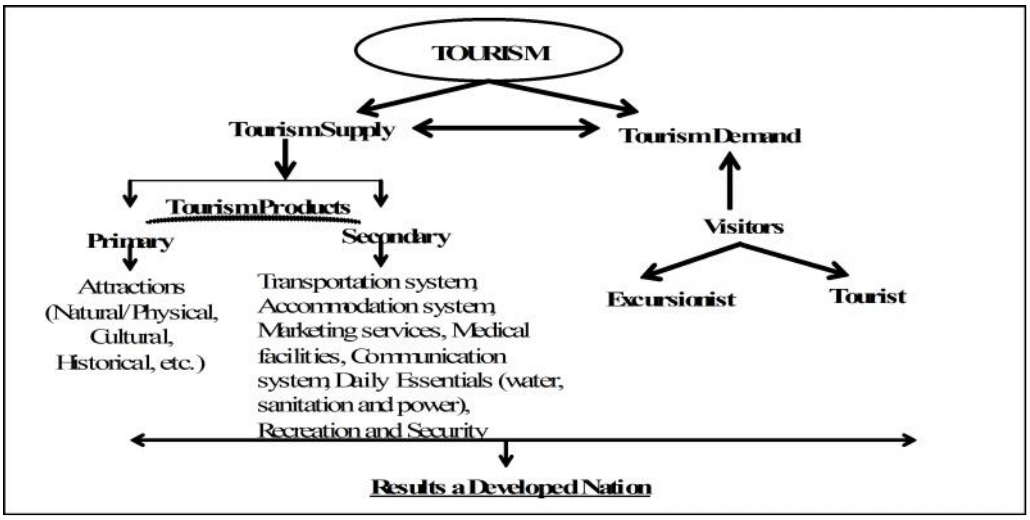


Fig. 1: Framework of development through tourism industry

Objectives

To examine the availability of tourism products at various identified tourism destinations.

To highlight the determining factors of tourism development.

Study area

The study area, i.e., Bishnupur is one of the smallest districts of the state Manipur, covering an area 496 sq.km. Manipur has the land area of 22,327 sq. kmof which 90 percent is covered by hill ranges and 2,238 sq. km by beautiful oval shaped valley. Bishnupur district is located in the south-west of Manipur Central Valley that stretches between 24010' N and 24045'N latitudes and 93045'E and 93052'E longitudes with total population of 237,399 which gives a ranking of 583rd (640) in India (Census 2011). The district is well characterized with moderate humid climate which can attract tourists from all over the world. With ample scope of natural tourism the district is the abode of attractions of cultural and historical form of tourism.

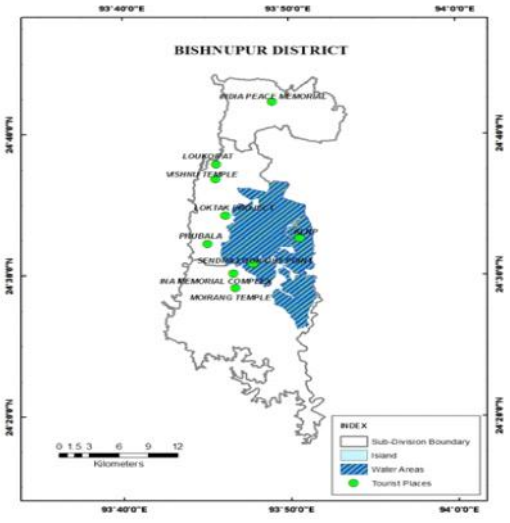


Fig. 2 Study area

Data base and methodology

Thepresent study is based on both primary and secondary sources of data. Various literatureon identifying the tourism destination are obtained from the tourism department of Manipur as secondary sources of data that are collected fromOffice of the Superintendent of Police/CID (CB), Imphal, Manipur. The primary data and information are collected and observed through field visit and interview to visitors who visit in the various destinations of the district. Both qualitative and quantitative type of data have been studied and collected through observation and schedule method. The availability of

tourism infrastructures viz. transportation system, accommodation, market, medical, communication system, daily essential facilities, recreation, safety and security facilities are collected and counted around three kilometer buffer zone of each destination through the observation during field visit and thereby if the variables is found, it mark as "Yes" which is equivalent to one while it is not available then it means "No" as zero. All these collected data are necessary to standardize to equalize all units i.e., unit less through the Z-Score technique:

$$Zi = (Xi-X\ ?)/SD \quad \ldots\ldots\ldots\ldots (1)$$

Where,Ziis the standard score

Xi is the original values of individual values for observation (i)

X ?is mean for the variables

SD is the standard deviation

$$\text{Composite Z-score} = \sum Zi/N \quad \ldots\ldots\ldots (2)$$

N = Total numbers of Variables

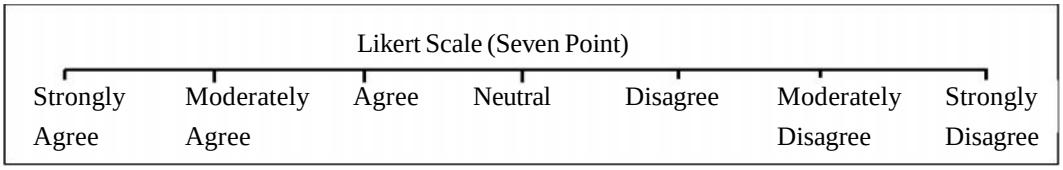
On the other hand, Seven point Likert Scale ranging from +3 (Strongly Agree) to -3 (Strongly Disagree) with a mid-point of 0 (Neutral) has been used in the study to analyze the data towards the perception of visitors through schedule method. It has been converted into quantitative data too for the analysis of tourism demand.

The converted quantitative data has been analyzed through the Principal Component Analysis method due to the reduction of factors consideration and the value of 1.000 and more than 1.000 are taken into consideration for the extraction of Eigen. Further, the rotation with Varimax iteration has been applied to obtain the result in the form of factors for the data reduction. Also, the spatial distribution of various destinations has been analyzed using the factor score value. Arbitrary method has also been used to compare the supply level within the destination regions. 1 and more than 1 value signifies the high influencing region followed by the value between 0.1 and 1 as influencing medium and less than 0.1 values as low influencing region. The analyzed data should be represented in the form of tables, graph and maps using the various software viz. MS Excel 2010, IBMSPSS v20 and ArcGIS 10.1.

$$\text{Factor Score}ik = \sum D_{ij}\ L_{jk}$$

Where, Dij = the standardized value for observation i on variable j

L_{jk} = the loadings of variable j on component k



Sampling design

Three kilometer buffer zone has been considered for the identification of various tourism supply of each destination region. Two hundred respondents are taken as sample size of the study because these respondents are those who visit at the various destination places of district during the several visits of researcher in the study area. Therefore, the sampling design of the study is based on the researcher convenience and randomized visit of the tourists or visitors.

Elements of tourism

Tourism infrastructures have played key elements of tourism industry to promote the economy of thedestinations and therefore it extends the provision of maintenance, management and promotion of tourism facilities and tourism resources by the host governments. Tourism supply components can be classified according

to four different elements- natural or environmental, cultural, human and technological resources (Gunn and Var, 2002). Natural or environmental resources constitute the fundamental measure of supply which are more sustainable and benefit in the future. Tourism supply in this regard includephysiography, landforms, flora, fauna, water bodies, air quality and similar natural phenomena. Cultural resources embrace the elements like the folklore traditions of locals, art and culture, historical monuments, architecture and museums that are needed to flourish tourism in the destinations. Natural and cultural resources are the primary components for tourism supply. Human and technological resources are tourism related facilities that are required for the maintenance, management and promotion of tourism natural or cultural resources. Tourism facilities that are transportation, accommodation, market, and supportive infrastructures say medical facilities, daily essentials (power, water supply system and sanitation facilities), leisure, recreation, safety and security. These elements are necessary to promote tourism industry in the destinations and are considered as secondary components. Both primary and secondary components of tourism are related to each other which are taken into consideration for tourism potential of destinations.

Primary components are the attractions ranging from natural to cultural which are qualitative in nature and it is too difficult to show the variation of attractiveness as the supply. Therefore, it is opt that the spatial variation of the primary elements supply is examined on the basis of preference of visitors (both excursionists and tourists) like to visit. All the visitors visited the Sendra destination which is the unique fresh water floating lake in the world and significantpercentage of visitors visited the other destination regions like Indian National Army Memorial Complex (INA) followed by Keibul Lamjao National Park (KLNP), Loukoipat, Moirang temple, Red Hill, Vishnu temple, Loktak Project and Phubalawith 95.5, 67.5, 64, 55.5, 47.5, 23.5, 6.5 and 1.5 respectively (table 1 and figure 3). Depending on the preference of visit to the various destination regions the primary component supply can be determined quantitatively and thus Sendra and INA destination come under high supply of attractions; KLNP, Loukoipat and Moirang Temple under medium supply and remaining (Red Hill, Vishnu Temple, Loktak Project and Phubala) are low primary supply (table 2).

Tourism industry is a superstructure to include facilities that constituted the primary sup-

Table 1: Visitors preference of Visit

Destination Region	Frequency	Percentage
INA	191	95.5
KLNP	135	67.5
Loukoipat	128	64.0
Moirang Temple	111	55.5
Loktak Project	13	6.5
Phubala	3	1.5
Red Hill	95	47.5
Sendra	200	100.0
Vishnu Temple	47	23.5

Source: Primary Survey, 2015

port of visitation and visitors activities, and is highlighted in form of its immense business opportunities with tourism hospitalities (Patel, 2012). The supply hospitality elements include national and state highways, district and village roads, navigable waterways, hotels, restaurants, food stalls, market facilities, medical stores and other associated facilities, tourism communication system, waste disposal, security, leisure, recreations, etc. and these secondary supply components of tourism can be determined for each destination.

Table 2 clearly shows that the secondary components of tourism elements supply highest at Sendra (1.16) due to its most popular destination where visitors are always prefer because of its unique features of Loktaklake. Moirang temple (0.91), INA (0.70) and Loktak project (0.13) as medium supply and Loukoipat (-0.22), KLNP (-0.34), Phubala (-0.43), Red Hill (-0.57) and Vishnu temple (-1.33) are low supply. Total supply of tourism elements in various identified destination regions of the district have been shown in figure 4. Only one destination namely Sendra is high supply of tourism elements; it means that it has highest potential of attractions in the district whereas INA and Moirang temple are medium that are better in condition as compared to remaining tourism places of Bishnupur district.

Tourism demand

Tourism demand is a broad term that covers the various factors governing the different motives of the visitors. Cooper (2004) defines demand as "a schedule of the amount of any product or service that people are willing and able to buy at each specific price in a set of possible prices during some specified period of time" and such demandsgenerated by visitors/ tourists in a particular placeare called as tourism demand for that tourism destination. Tourism demand is a special form of demand for tourism products and tourism products are the bundle of complementary goods and services (Morley, 1992). It is usually the measurement of the use of goods and services by the visitors (Frechtling, 2001). Table 3 represents the demographic profile of visitors including same-day (excursionist) and overnight (tourist) visitors in the various tourism destination of Bishnupur. It signifies that domestic tourism plays a key role to promote tourism industry because major percentages of visitors are native of Manipur and mostly they are the students who visited the place as Excursionist for relaxation and entertainment. Whereas, foreign tourists are

Table 2: Components of Tourism Supply

Destination Region	Primary Components	Secondary Components	Total
INA	1.25	0.70	0.76
KLNP	0.46	-0.34	-0.25
Loktak Project	-1.26	0.13	-0.03
Loukoipat	0.36	-0.22	-0.15
Moirang Temple	0.12	0.91	0.82
Phubala	-1.41	-0.43	-0.54
Red Hill	-0.11	-0.57	-0.52
Sendra	1.38	1.16	1.19
Vishnu Temple	-0.78	-1.33	-1.27

Source: Calculated value based on field survey, 2015

found only 17 percent according to field report. The reason behind this is the poor communication system and advertisement about those tourism destinations in the world modernized market.

Tourism demand is simply expressed as the relationship between individual motivation to travel and their ability to do so (Pearce, 2005). It means that there are various factors influencing the tourism industry in both generating and destination region. Smith (1995) observed the demand at four different levels including: "the amount of products that will consume at various prices, actual levels of participation, the unsatisfied component of participation, and the desire for emotional and psychologically based experiences". BurkartandMedlik (1981) explained the demand into two components - determinants and motivations. Determinants are the extrinsic factors including government policies, media communications, marketing, societal norms and pressures, etc. that shape the general demand for tourism within the society. Another, motivations refers to the personal factors that affect the individual and are expressed as tourism desires and choices. However, three types of demand for tourism viz. actual, suppressed and latent demand has been studied. Actual demand is the demand come from tourists/same-day visitors who are actually involved in the tourism. Suppressed demand is a type of tourism demand that is created by two categories of people who are unable to travel due to circumstances beyond their control; and last demand type is latent demand which relates to the spatial and temporal expression of demand at specific destination.

Actual demand is the most effective for tourism industryand it can be defined in various ways depending on thegeographic, cultural, economic, social, and political factors.All these factors are taken into consideration and twenty one variables are selected to examine the level of tourism demand related to its motivations of visitors to the various destinations. These twenty one variables are reduced into four factors through the Varimax rotation method of Principal Component Analysis technique (table 3) and the reduced four factors are named individually-according to the explanation of variables: factor 1- Natural and Socio-cultural attraction potential (10 variables),factor 2 - Historical and Architectural Potential (3 variables),factor3 - Hospitable Society and Infrastructures potential (7 variables) and factor 4 - Cost Factor (1 Variable).Factor 1 is the most demanding factor of visitors and it can be evaluated from the perception of visitors, then followed by factor 2, factor 3 and factor 4 because these factors explain the Eigen value 12.124, 4.033, 2.287 and 1.534, respectively. A scenic attraction of the district plays a key factor to promote the tourism industry and helps to fulfill the demand of same-day visitors/tourists. The demand scores of each factor have been shown in table 4. Factor 1 includes ten variables explaining more than 75 percent has taken into consideration and the remaining variables are least influenced and rejected.

Factor 1 explain ten variables constituting Scenic beauty have a great attractions; Fairs and festivals are a source of attraction for tourists; Climate as an important element to attract tourists; Food is delicious local traditional touch and safe to eat; Bandh/strikes/political riots disturbs tourism development; Religious places provide peace of mind and have great historical, architectural and religious values; Safe to travel without and fear of bearing robbed, theft and sexual harassment; People must be good friendly and cooperative in nature; Guides must beknowledgeable and good mannered; and Unique handicraft and folklore activities; these are the factors that explained the 57 percent of variance with high demand at Sendra, medium at INA, Loukoipat, KLNP and low at Moirang temple, Red hill, Vishnu temple and

Loktakproject in table 4.

The variables explaining more than 89 percent under factor 2 include three variables: Notable history have attracted tourists; Museums and galleries are good source of information about the past and also local life; and Historical buildings have a great architectural and historical values with high demand at INA, medium at Moirang Temple, Red Hill, Sendra and low at others in table 4. Due to the highest percentage

Table 3: Rotation Method: 4 Components/Factors Extracted Varimax with Kaiser Normalization.a Rotation converged in 6 iterations.

Variables	Factor 1	Factor 2	Factor 3	Factor 4
Scenic beauty have a great attractions	0.968	-0.026	-0.175	-0.027
Fairs and festivals are a source of attraction for tourists	0.938	0.277	0.176	-0.064
Climate as an important element to attract tourists	0.910	0.395	0.108	0.005
Food is delicious local traditional touch and safe to eat	0.897	0.285	0.281	0.026
Religious places provide peace of mind and have great historical, architectural and religious values	0.878	0.253	0.098	-0.052
The area is safe to travel without and fear of bearing robbed, theft and sexual harassment	0.819	0.541	-0.109	-0.121
People are good friendly and cooperative in nature	0.780	0.579	0.036	-0.095
Guides in the area are knowledgeable and good mannered	0.765	0.629	-0.088	0.009
Handicraft and folklore activities carries local touch and make them unique	0.740	0.217	0.449	-0.384
Bandh/strikes/political riots disturbs the tourism development	-0.692	-0.151	-0.216	0.598
Notable history have attracted tourists	0.242	0.929	0.079	-0.096
Museums and galleries are good source of information about the past and also local life	0.268	0.925	0.106	-0.202
Historical buildings have a great architectural and historical values	0.351	0.892	0.065	-0.139
Medical facilities are good for the emergencies of tourists	-0.110	-0.061	0.941	0.169
Shopping places are good and up to date and attract tourists	-0.306	-0.078	0.913	-0.095
Recreation parks and gardens are a source of attracting tourists visitors	0.473	-0.167	0.805	-0.304
Accommodation facilities are good	0.156	0.492	0.795	0.228
Daily essentials are in good condition	0.547	0.280	0.731	-0.002
Transport facilities are good	0.376	0.584	0.637	-0.305
Communication facilities are good for the source of information	0.483	0.418	0.583	0.461
The place is expensive destination	-0.115	-0.396	0.087	0.882
Total Eigen Value	12.124	4.033	2.287	1.534
Total Variance (%)	57.731	19.202	10.89	7.303
Cumulative Variance (%)	57.731	76.934	87.824	95.127

Source: Extracted value from Factor Reduction Analysis (PCA)

of variance explaining the factor 1 and also the variable "scenic beauty have a great attractions" explains about 97 percent which has been the most influenced among all the variables taken into consideration and here it has been explained that the natural God's gifted scenic beauties are the major reason of attraction for visitors in the district.

Hospitality industry and other tourism infrastructures come under factor 3 which explains 11 percent of variance consisting seven variables with high demand at Sendra, medium at INA and Moirang temple and others are low demand. Then, the last factor can be rejected because it can explain by 7 percent variance. This is due to the fact that major visitors are

Table 4: Score of the Demand factors

Destination Region	Factor 1	Factor 2	Factor 3	Factor 4
INA	0.7701	2.1785	0.6967	-1.6500
KLNP	0.3394	-0.2582	-1.7639	0.5181
Loktak Project	-1.1581	-1.0212	0.0276	0.4092
Loukoipat	0.4164	-0.3020	-0.3858	-1.8243
Moirang Temple	0.0476	0.7111	0.8793	0.4201
Phubala	-1.2399	-1.0774	0.0328	0.7142
Red Hill	-0.3222	0.1210	-0.6953	0.5399
Sendra	1.8918	0.2182	1.6686	0.7142
Vishnu Temple	-0.7450	-0.5700	-0.4601	0.1586

Source: Calculated value based on field survey, 2015

native of Manipur and the destination is not more expensive but it also shows little variation between the destinations according to the perception of visitors in table 4.

Constraints of Tourism Development

Tourism as an industry that can boost up the economic growth and so, the country must have mater plan for tourism development. It may either long-term or short-term vision prepared by a group of experts taken into account with various intervening factors such as basic facilities, exploitation of resources, availability of funds, site development, amenities, safety, environmental protection, market analysis, publicity drive, private participation, risk factors, etc.(George, 2006). The problems have been highlight that the variable "Bandh/strikes/political riots disturb tourism development" has influenced as the first component in the potentials of tourism explaining 69.2 percent that shows the negative correlation between the other variables of first, second and third component. Therefore, it reveals that this variable is the major cause to reduce the tourist influx in the region and it is one of the major discouraging factors to the development of tourism industry. Bandhs and economic blockades are so common in the state Manipur and it has caused tremendous economic loss to the state. These bandhs, blockades, strikes and curfews are called by various organizations viz. illegal organization (say, insurgency groups), student organization, meira-paibilup (women organization), and many other JACs (Joint Action Committees), etc. to keep up their demand to the government. Insurgent groups of the state have been demanding a separate independent state Manipur. Table 5 reveals that the number of days affected in the state Manipur is

highest in the year 2016 as compare to others.

Despite, hospitality and infrastructures regarding the tourism development such as hotels, restaurants, recreational parks, sanitary system, medical facilities, shopping facilities, transport facilities, etc. are available but the quality is in bad condition and therefore "Hospitable Society and Infrastructure potential" is explained as third component by only 11 percent of variance that clearly shows the less influencing factor to encourage tourist attraction. Whether tourism infrastructure is not better in condition then there is no more effect on the socio-economic development through tourism industry. Inadequacy of advertisement about its destination beauty has also been the major issue to reduce the development of tourism. People of other states of the country still do not have any idea of the north-eastern states and this is the reason of the negligence of government.

Table 5: Number of disturbed days caused by bandhs/blockades/general strikes

Years	Economic Blockades			Bandh/General Strikes	
	No. of economic blockades		No. of days affected/ disturbed	No. of Bandh/ Strikes	No. of days affected disturbed
2008	4	87		10	22
2009	4	87		53	96
2010	3	130		48	106
2011	4	98		51	174
2012	1	6		46	93
2013	4	15		45	103
2014	3	19		83	165
2015	10	34		95	118
2016	8	105		118	263
2017 (till 7th April)	2	79		12	22
Total	43	660		561	1162

Source: Office of the Superintendent of Police/CID (CB),Imphal, Manipur

The burning issue in the transportation system is "No railway connectivity in the state hub till now". Initially, then Prime Minister Manmohan Singh laid the foundation stone for the rail head at Jiribam in 2004 from Jiribam to Tupul and this plan stretches uptoImphal, MalomMakhaLeikaiBoroimakhong(Meitei, 2010) but its construction is stillnot completed in 2017. Here it clearly shows that the process of development is very slow and this is the major cause of forming the various political conflicts and riots.Despite, roadway and air connectivity is not in better condition as compare to other tourist circuits of the country. The conditions of major and minor roads are not better and therefore it may cause the road accidents during the travel. Major domestic flights are available at ImphalTulihal Airport connecting with few cities viz. Delhi, Kolkata, Guwahati, Aizawl, Bangalore, Silchar, Agartala, Pune and Thiruvananthapuram but only one international flight to Mandalay has been connected (Wikipedia).

Tourist home, rest houses and hotels are available for accommodation at various destination regions but only Sendra tourist home and

the Lake View hotel are working and remaining others are as usual not good in condition. The condition of Sendratourist home was not good when it was run under the State Government of Manipur in the past. Recently, it has some changes of improvement due to the private - public partnership since 2013 (Interview with a Worker of Restaurant, 2015) to maximize tourism development and for the sustained growth of tourism. Presently, it is run by a private agency "The Classic" and provides essential facilities to the hotels and restaurant. Department of Tourism did not found any tourist in the past days but in 2014 it has been recorded. These are the positive effect of the improvement of accommodation facilities. Even good facilities are found in the Imphal city, natural lovers want to stay at Bishnupur district to look out the scenic view of Loktak Lake. Other tourism related facilities say market system, medical care, recreation parks, and daily essentials including power, water and sanitary system are also essential for the promotion of a good tourism but these are poor facilitated in various destinations of the district Bishnupur. However, the district needed a serious concern to solve out these various constraints facing in tourism development and promotion.

Conclusion and suggestion

The basic aim of the study was to examine the tourism supply in Bishnupur district withrespect to the demand of the visitors (excursionists and tourists both) to promote the economy of the state Manipur. Attractions consisting natural, historical and cultural potential are the major influencing factors that can promote tourism industry. These attraction resources are the only important way to develop both the social and economic condition of the state. Due to the rugged topography and political instability of the state it is less developed in every aspect of resources. It is clearly mentioned as the above the variable "Bandh/Strikes/ Political riots disturb tourism development" has been influenced under the first factor with the explanation of 69 percent. Almost all the major goods and services used in the state are the inputs from other states of the country and neighboring country such as from Myanmar, China, Thailand, Bangladesh, etc. In every months of each year, numbers of bandhs, strikes, economic blockades and curfews are common in the state due to uncountable reasons say kidnapping, Inner Line Permit (ILP), land acquisition, etc. Therefore, the whole state Manipur is always disturbed to the normal life and it is one of the major reasons to discourage tourist because they feel insecure to visit those beautiful places of the state. Also, it affects the state economic growth and development as it is fully economic dependent on others.There is a serious need to develop the economic condition of the state. For the development of economy in the state, the tourism industry is the main factor which needs to improve the tourism supply; mainly the secondary supply that includes transportation, accommodation, marketing facilities, communication system, daily essential amenities, recreation activities, safety and security. Security and safety are needed much for the development of the state through any form of industry like tourism. Despite, the security and safety, other tourism infrastructures have also been important to boost up the tourism industry. Government of Manipur has emphasized to give more supply at Sendra destination than others and therefore, visitors always prefer to visit the Sendra destination to look out scenic view of Loktak Lake. Meanwhile, there are lots of possibilities to develop tourism at other destinations of Bishnupur but it is still in inadequacy of tourism infrastructure comparing the supply at Sendra. Considering the discussion of supply and demand of tourism in the district, following suggestions have been made so that the state socio-economic development through tourism can flourish in a

sustainable manner.

Proper connectivity, accessibility of transportation and communication are urgently needed to facilitate tourists to enjoy the scenic beauty of nature and also distinct cultural and ethnic diversities.

The sense of security shouldprevail in the area so that people from other parts of India and abroad may not hesitate to visit the state.

For the sake of better development and enhancing the existing potential of tourist sites the local participation should be encouraged in different tourism products and they should be trained to guide, supervise the tourists in a very friendly and passionate manner.

Resorts like hotels, motels and restaurants should be developed at different sites for overnight stay of tourists so that local economic loss in the form of excursion may be reduced.

Advertisement for the potentiality of destination through magazines, broachers, newspapers, television, radio and internet should be improved in the present globalized and modernized market of the world.

Government, NGOs and quasi government agencies should make aware people living in rural areas regarding the potentials of tourism, and how it can transform the area in to developed one.

If all these suggestive measures are taken into consideration in a pragmatic manner, it is hoped that the frequency of tourists will be increased in the future that will not only bring prosperity and also a prolonged economic relief to the reeling of socio-economic deprivation faced by the state.

References

Annual Report, 2014-15, Incredible India; Ministry of Tourism, Government of India.

Annual Report, 2016-17, Incredible India; Ministry of Tourism, Government of India.

Burkart, A.J. and Medlik, S.,1974, Tourism: Past, Present and Future; London: Heinemann Professional Publishing.

Census of India, 2011, Government of India.

Clare A. Gunn and TurgutVar, 2002,Tourism Planning: Basics, Concepts, Cases; (Fourth Edition) Routledge,Taylor and Francis, London; xxii+442pp. ISBN: 0-415-93268-8, ISBN 0-415-93269-6 (pbk).

Cooper, C., 2002,Knowledge Management and Research Commercialisation Agendas; *Current Issues in Tourism*, vol. 5, no. 5, pp. 375-377, January, ISSN 1368-3500.

Das, D., 2013, Tourism Industry in North-East Indian States: Prospects and Problems; *Global Research Methodology Journal*, V0l-II, 7th issue, Nov-Dec-Jan www.grmgrlaranya.com ISSN 2249-300X; pp.1-6.

Frechtling, D., 2001, Forecasting Tourism Demand: Methods and Strategies; Butterworth-Heinemann, *Oxford*.

George, P., 2006, Strategic Management in Tourism; In M. Biju, *Sustainable Dimensions of Tourism Managemnt* (p. 89). New Delhi: Mittal Publishers.

Interview with a Worker of Restaurant, 21/06/2015.

Kakkar, L. and Sapna, 2012, Impact of Tourism on Indian Economy; International Journal of Marketing, *Financial Services and Management Research*; Vol. No. 4; ISSN 22773622;pp.70-75; online available at indianjournals.com.

Loktak Atlas. Developmental Activities and their Impacts on Wetlands, (http://www.loktak.org/Atlas/Contents/Development and general features.htm); Retrieved on 03-05-2014.

Meitei, A. C., 2010, May 10. Free Expression from Angomcha Chingkhei Meitei; Retrieved March 19, 2017, from Railway Map of Manipur: http://acmeitei. blogspot.in/2010/05/railway-map-of-manipur.html.

Morley, C., 1992,A microeconomic theory of international tourism demand; *Annals of Tourism Research*, Vol 19, pp 250-267.

Patel, R., 2012, India's Tourism Industry - Progress and Emerging Issues; *ArthPrabhand: A Jour-*

nal of Economics and Management (APJEM); Vol. 1, Issue 5, August, ISSN 22780629, pp. 1-10.

Pearce, P.L., 2005, Tourist behavior: Themes and conceptual *schemes;Clevedon*, UK: Channel View; ISBN 1-8451-022-X/EAN 978-1-84541-022-3 (pbk).

Singh, E., 2005, Tourism Development in Manipur; Manipur: A Tourist Paradise, BR Publications; ISBN 978-81-7646-506-9/ ISBN 81-7646-506-2.

Smith, S. L. J., 1995, Tourism Analysis: A Handbook; (2nd ed.). Harlow: Longman; ISBN 13:978-0-582-2510-1 (pbk).

Statistical Yearbook Manipur, 2013, Directorate of Economics and Statistics, Govt. of Manipur, Manipur, India.

The Indian Express (Daily Newspaper), 20/03/2017

Trisal, C.L.,2002,Integrated Wetland and River Basin Management - A Case Study of Loktak Lake;Ramsar Convention website (The Ramsar Library); Wetlands International - South Asia; Case Study from the Ramsar Handbook4,15-Oct; http://www.riverbasin.org/newsmaster.cfm?andmenuid=113andaction=viewandretrieveid=546; Retrieved on 07-09-2015 .

UNWTO Annual Report, 2015 (January), accessed on 29/07/2017

Wikipedia, (n.d.), *Imphal International Airport*. Retrieved March 20, 2017, from Free Encyclopedia Wikipedia: https://en.wikipedia.org/wiki/Imphal_International_Airport.

●●●

NGJI, An International Refereed Journal
(NGSI-BHU, ISSN: 0027-9374/2017/1680)
Vol. 64, No. 3-4, Sept.-December, 2018

Livelihood Crisis and Distress Seasonal Migration: A Study of Beed District in Maharashtra

Abdul Jaleed C. P. and Aparajita Chattopadhyay

Abstract

Seasonal migration is widespread in rural central and eastern Maharashtra where agriculture is mainly rain-fed. Our study explores 350 seasonal migrant households that is defined as a household having, at least, one member who stayed away from the village for the purpose of employment for at least one month and not more than six months during the dry season. After sowing the Rabi Crops, villages face severe seasonal unemployment. To tide over the lean season, thousands of small and marginal peasant households migrate to other districts of the state, and even outside, in search of livelihood opportunities in sugar factories and brick kilns. Drawing connections between seasonal migration and rural crisis, our narrative shows how seasonal migration compensates for the lack of employment opportunities during the dry season and it reduces seasonal income variability of the poor households in Beed district.

Keywords: *seasonal migration, poverty, maharashtra, social cost, food insecurity*

Introduction

Seasonal migration is perceived as a response to poverty and environmental change. It has long been a part of livelihood strategy (as an alternative route for an income through wage labour) of the people of rural areas (Rogaly, 1998; Haberfeld, et al, 1999; Rao, 1994; Rogaly, et al, 2001; de Haan, 2002). Studies have found that people belonging to remote rural areas, the chronically poor, landless, and with low educational attainments are more likely to migrate seasonally/temporarily (Jan Breman, 1978, 1985, 1994, 1996; Deshinkar and Farrington, 2009; Keshri and Bhagat, 2010). The ability of seasonal migration to serves to reduce vulnerability and increase livelihood security of the poor is widely recognised (Black, Bennett, Thomas and Beddington 2011; Scheffran, Marmer and Sow 2012; Tacoli, 2009).

Seasonal migration is widespread in rural Maharashtra where agriculture is entirely rainfed (Breman, 1978; Teerink, 1995). After sowing the Rabi Crops, the villagers have no work and face the prospect of a lengthy period of unemployment. In order to tide over the lean season, thousands of small and marginal peasant households migrate in search of work op-

1. Research Fellow, International Institute for Population Sciences, Mumbai.
2. Associate Professor, International Institute for Population Sciences, Mumbai.

portunities in sugar factories, brick kilns, stone quarries. Their destinations may be other districts of the state, or even beyond state boundaries. Such seasonal migration is undertaken largely in anticipation of the adverse effects on livelihood and to prevent or minimise the damage they can cause. This paper, which is based on our fieldwork in Beed district, attempts to draw connections between seasonal migration and the rural crisis.

Marathwada region of Maharashtra consists of eight districts of Maharashtra: Aurangabad, Beed, Latur, Osmanabad, Parbhani, Jalna, Nanded and Hingoli. This has historically been a rain shadow region with average annual rainfall of about 700 mm, but in districts like Beed, it dips down to 600 mm. Apart from the Godavari, no major rivers originate or flow through Marathwada. The region was always backward regarding the availability of natural resources and access to capital investment. Similarly, Solapur is a drought prone area, drained by Bhima River (a head stream of Krishna river) that remains dry except during monsoon. Beed district is in Aurangabad division of Maharashtra. It has often drawn media attention for its drought and farmer distress. With a semi-arid topography, below average rainfall, and limited irrigation infrastructure, the predominantly rural district subsists through rain-fed agriculture and wage employment. The climate is marked by the alternation of a wet and dry season with annual rainfall confined to 3 to 4 months from June to August/September with a peak in July. During our field work, people reported a late onset of the rainy season and more worryingly, its shortened duration. There are more and longer dry spells, as well as increase in extreme weather events. For many households, at the end of the rainy season, there are hardly any possibility of earning a living. Households deal with the situation of severe unemployment, through a bundle of short-term coping and long-term adaptation strategies, such as the sale of assets (especially livestock), reduction in food consumption, diversification of crops (shifting to cotton and sugarcane, and abandoning the traditional crops), borrowing money, and taking up seasonal migration.

Beed and Solapur have usually been prone to droughts since historical past. Almost every twenty years, a big drought has hit the region, while smaller droughts keep occurring in the interim. Extreme 4 weather events have become more frequent in the region. There were little rains in 2010, 2011 and 2013 and severe droughts in 2012. Marathwada constitutes 31 percent crop area of the state but it uses only 14 percent of the state's surface water, on the other hand, Western Maharashtra has 36 percent crop area of the state, but uses 47 percent of the water.

In the last two decades, traditional crops of the region like groundnut, jowar and soya bean that gave sustainable food and income to the farmers with less water have largely been replaced by cash crops. With failing returns from traditional crops, distressed farmers are turning to the more lucrative but water-intensive sugarcane. Sugarcane needs more than 2,000 mm of rainfall. Since there is no rainfall, whatever little surface and groundwater is available in the region is guzzled by sugarcane growing farmers at the cost of those who grow traditional staple crops. The impact of this entire on rain fed farmer has been catastrophic. The incidence of drought remains a threat to agricultural production and to the livelihoods of people depending on agriculture because cultivation has become a gambling with the monsoon. The people live in hand to mouth economy such as landless labourers, and small marginal farmers do not have enough stock to sustain in the event of a drought take up many coping strategies where seasonal migration is a prominent one. In this context, this study examines the nature of sea-

sonal migration, economic and social cost- benefits, women's health issues and quality of life of this disadvantaged group,

Methodology

We conducted a cross-sectional survey of seasonal migrant households in Beed district between September and November of the year 2013. We did a household listing in 14 randomly selected villages of the district to identify the households of seasonal migrants. Then we used simple random sampling method to select 350 (targeting 25 samples from each village) of the households. A seasonal migrant household is defined as a household having, at least, one member who stayed away from the village for the purpose of employment for at least one month and not more than six months during the dry season (November to May).

An interview schedule for obtaining social, economic and migration details was administered to the selected households. The interviewers sought verbal consent from all the participants before conducting the interviews. In this way, information was collected from 340 seasonal migrant households. We also collected qualitative data through in-depth interviews with 30 seasonal migrants. This paper provides an insight into the lives of the households of seasonal migrant households in the rural areas of Beed district. Typically, these households have few resources to mitigate the contingencies that they must face in their day to day lives.

A detailed questionnaire covering questions on household information, pattern and causes of migration is canvassed for data collection. Household and migration information is collected from the head of the households (if the head of the household is not migrant then migration information is collected from a male migrant member of the household). Information on the social costs of seasonal migration was collected from a female migrant member of the household.

World Health Organization (2004) defined "quality of life" as the individual's perception of their position in life in the context of culture and value systems in which they live and in relation to their goals, expectations, standards and concerns". The WHOQOL-BREF consisting of four domains: physical health, psychological health, social relationships, and environmental health. The physical health domain includes items on mobility, daily activities, functional capacity, energy, pain, and sleep. The psychological domain measures include self-image, negative thoughts, positive attitudes, self-esteem, mentality, learning ability, memory concentration, religion, and the mental status. The social relationships domain contains questions on personal relationships, social support, and sex life. The environmental health domain covers issues related to financial resources, safety, health and social services, living physical environment, opportunities to acquire new skills and knowledge, recreation, general environment (noise, air pollution, etc.), and transportation.

Observations

We conducted household listing in 14 villages in the district and identified the households of seasonal migrants. From this list, we derived the level of seasonal migration in each of the selected villages. During the dry season of 2012, of the total households in the 14 villages selected for the study, 16 % were found migrated. Among the selected villages, the level of seasonal migration ranged from 4% to 90 %.

Table 1 shows the demographic dynamics of seasonal migration within the selected households. In almost all (99 %) instances of seasonal migration, whole families migrate. Total of 1881 persons were covered by the survey. Average household size was 5.5 persons per household and the average number of seasonal migrants per household was 3.6. In the dry season of 2012, in one-third (33 %) of the migrant households included in the survey, two mem-

Table 1: Demographic characteristics of the seasonal migrant population (movers), and the population who remained at home (non-movers) within seasonal migrant households

	Population from selected seasonal migrant households								
	Seasonal migrants			People who remained at home			Total population		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
Age group (%)									
0-14	22	17.5	19.9	55.1	54.6	54.9	33.8	30.1	32.1
15-59	72	79.3	75.4	36.4	33.3	35.1	59.2	63.9	61.4
60+	6	3.2	4.7	8.5	12.0	10.0	7.0	6.0	6.5
Sex composition (%)	53.5	46.5	100.0	55.6	44.4	100.0	54.2	45.8	100.0
Migrants/non-migrants (%)	64.2	66.2	65.1	35.8	33.8	34.9	100	100	100
Persons (n)	653	572	1225	365	291	656	1020	861	1881

bers had migrated. The number of migrants in 43% of the households was three. In the remaining households (24%) more than three persons had migrated. The demographics of the population that stayed back (did not migrate) can also be seen in Table 1. Of the 1881 persons (from 340 households) in the sample 54% were males and the remaining were females. Thirty-two percent were children (0-14 years), 61.4% were in the working group (15-59 years), and 6.5 % were elderly (60 or above years). Out of every 100 persons, 65 did migrated during the dry season of 2012. Out of every 100 working age people 80 (78 out 100 males and 82 out of 100 females) had migrated out. Therefore, seasonal migration is a significant event for these households. Of every 100 who migrated during the dry season of 2012, 20 were children (12 from 0-5 years and 8 from 6-14 years), 75 were working-age population, and 5 were elderly. Likewise, of every 100 people who stayed back 55 were children, 35 were from the working age group and 10 were elderly.

Table 2 shows the socio-economic characteristics of the seasonal migrant households selected for the study. The sample households consisted of 84% Hindus, 13% Buddhists and 3% Muslims. The majority (84%) of them belonged to either the Scheduled Tribe/Nomadic Tribe (ST/NT) or Schedule Caste (SC) groups; 72% of the households had electricity, 24% had access to improved sources of drinking water and 14% had improved sanitation facilities. Only 4% had access to clean cooking fuel. As per the District Level Household and Facility Survey-4 (2012-13), the corresponding figures are 96.5 % (of the households with electricity), 90.3% (with access to improved source of drinking water), 17.8 % (with access to improved sanitation facilities), and 8.7 % (having access to clean fuel) for the rural areas of Beed district. The differences in access to basic amenities between rural households in general and the households of seasonal migrants in the district are possible indicators of the relative economic backwardness of seasonal migrant households (Figure 1).

Seasonal migration is, typically, a strategy for avoiding loss of income during the dry season. It is a common coping mechanism of the landless (58%) and households with marginal land holdings (11%). In the villages, wage work is the key means of livelihood (as is the case with 55% of the surveyed households). Our

Table 2: Socio-economic characteristics of sampled seasonal migrant households

Household characteristics	n (%)
Religion of the head of household	
Hindu	286 (84.1)
Buddhist	44 (12.9)
Islam	10 (3.0)
Caste/Tribe of the head of household	
Scheduled Tribe/Nomadic Tribe	172 (50.7)
Scheduled Caste	113 (33.3)
OBC and Others	54 (16.0)
Ration Card	
No ration card	85 (25.1)
Below Poverty Line card/other entitlement ration card	177 (52.2)
Above Poverty Line card	77 (22.7)
Principal economic engagement in village	
Cultivation	132 (38.7)
Wage labour	188 (55.3)
Others	20 (6.0)
Household food security status	
Food secure	27 (8.3)
Food insecure with without hunger	201 (59.0)
Food insecure with hunger	112 (32.7)
N	340 (100)

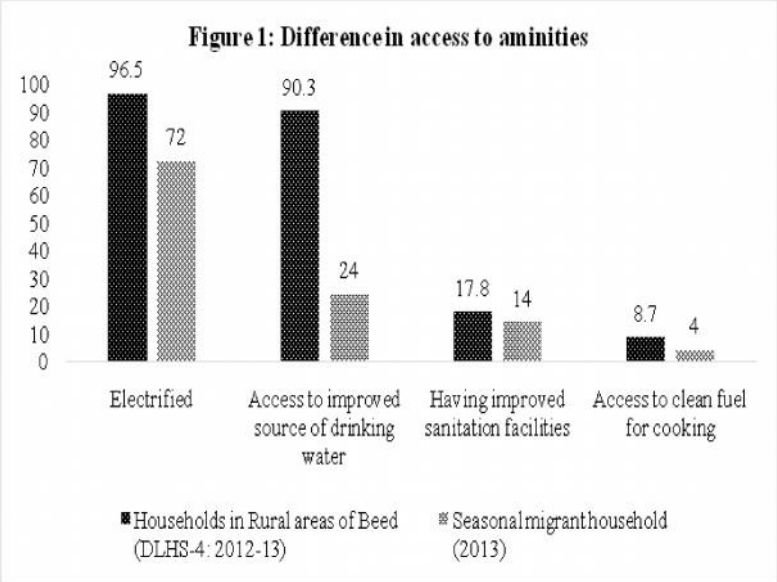


Fig. 1

study found that 39% of the households was engaged in subsistence agriculture, predominantly using traditional farming methods. Only 6% derived the major portion of their income from small trade or other economic activity.

State of food security among seasonal migrant households

The link between poverty and food insecurity is straight forward. An economically poor household is less likely to have access to adequate food, especially when food has to be purchased. Food security defined as "access by all people at all times to enough food for an active, healthy life," is recognised nationally and internationally as a key to nutrition security and health (Centre of Nutrition Policy and Promotion 1996, Life Science and Research Office (LSRO), 1990). Food security includes at a minimum; (1) the ready availability of nutritionally adequate and safe foods, (2) an assured ability to acquire acceptable food in socially acceptable ways (e.g.,, without resorting to emergency food supplies, scavenging, stealing, or other coping strategies). Before categorising the households as food secure and food insecure by the number of affirmative responses reported by them, the researcher presents the responses given by each of the households for each of the questions. This tells us the ability of households to access food. For example, head of the households of 90 percent sample households reported that "I worried that our food would run out before we got money to buy more". This happened to 90 percent of the sampled households at least once in last 12 months. It shows the lack of food stocks available to the households or the lack of savings to meet the necessities by the households. The response indicates the extent of perceived food insecurity of the households. Further, 89 percent sample households reported that "the food that they bought just didn't last, and they didn't have money to get more". This is the experienced food insecurity where these household have gone through such a situation at least once in last 12 months. 89 percent households reported that "they couldn't afford to eat balanced meals' due to their financial inability, and 84 percent reported that "they relied on only a few kinds of low-cost food to feed their chil-

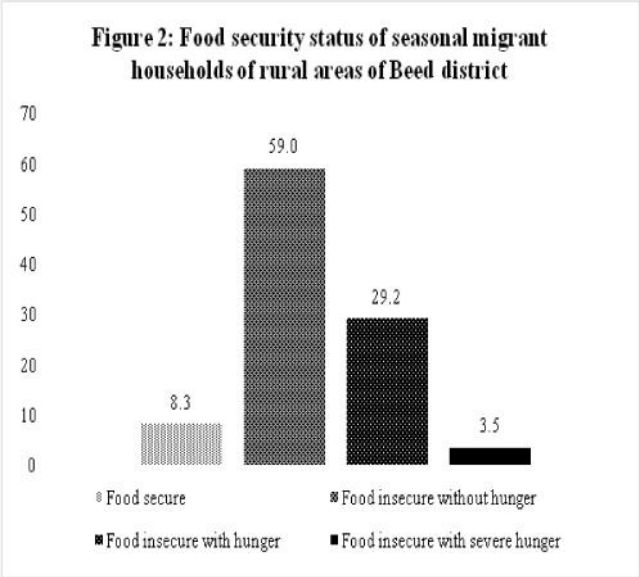


Fig. 2

dren because they were running out of money to buy food". All these are indications of severe economic inability even to fulfil the fundamental need i.e., food.Household food security is at stake, particularly during the lean season. Our data shows that only 8% of the seasonal migrant households had food security, 59% were food insecure without hunger and 33% were food insecure with moderate or severe levels of hunger (Figure 2).

Government's response to protect the livelihoods of these people is almost non-existent. During the 2011-12 seasons, only one-fifth of the selected households had received employment under Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA). When asked about MGNREGA and its functioning in the village, a male seasonal migrant replied: "two years back, I got 10 days of work. I received my wages after several months. What is the point of doing such jobs? Payment needs to be made immediately or at least soon after the work. Otherwise, how can we survive?". A woman stated: "we have no hope and now, we don't wait to be given jobs". Such statements indicate the lack of regularity and assurance of wages from the scheme. From the discussions with the Gramsevaks and Surpanch, it appears that there is no will among the local self-governments as well as the state bureaucracy to realise the potential of MGNREGA in enhancing the livelihood resource base in rural areas. Many of the seasonal migrant households were aware only about the scheme and not its details, such as the right to work, unemployment allowance, etc.

Pattern and causes of seasonal migration

Seasonal migration flows from the study area reveal a dominant pattern of seasonal rural-rural migration. During the dry season of 2012, people from 90% of the sampled households left their villages in October and 87% returned to their villages in April. Thus, the duration of migration was six months. The migration is reckoned to be seasonal because the migrants return home once the pre-monsoon showers hit and agricultural activity gains momentum. The main destinations for the migrants of Beed district are Karnataka (58%) and other districts within Maharashtra (42%), particularly the agriculturally developed districts in western Maharashtra. The migrants are mainly engaged in cutting of sugarcane (98%) and brickmaking (2%). The migration history of households in terms of number of seasonal migration during last five years (2008 to 2012) shows that 75 % had migrated in all the five dry seasons. This is an indication that seasonal migration is an annual routine act for most of the households.

Seasonal migration is a dry season event chiefly because of the changes in the village economy. To understand the causes of seasonal migration, several questions were asked to migrant households about their economic circumstances and employment opportunities in the village. Nine out of 10 seasonal migrant households reported that they were forced to choose the migration option. The main reasons for migration were 'seasonal unemployment' (76 %), 'less wages in village' (20%), 'need of a large amount of money to meet emergency expenditure' (4%). Sixty percent of the households reported having outstanding debts/loans (mostly informal). Hence, we may infer that by and large, seasonal migration is integral to the struggle for survival of the rural poor. The reasons reported by the majority of the households are driven by a situation where they are unable to earn sufficiently in their villages to meet even basic needs. Thus, it is economic hardship that drives people out of the village to offer their labour for a wage. The situation is a pointer at the fragile nature of the livelihood opportunities available to the population in the district. Thus, it can be said that seasonal migration is largely distress-driven.

Seasonal migration from Beed district is based on advances paid to the migrants, or repayment of debt through manual labour. The arrangement is called the Koita system wherein a work unit comprising a husband, wife and one child or two children is given work on a piece rate basis. The role of labour contractor (Mukhadam) is vital in channelizing seasonal migration. Labour recruitment takes place almost entirely through the Mukhadam. When asked about the recruitment process, a seasonal migrant replied: "The Mukhadam comes to the village and informs us about employment opportunities. He sets the wages and pays an advance. A work unit (Koita) is paid Rs. 25,000/- in advance for working for six months. This advance helps to keep us alive when we are jobless in villages". 83% of the surveyed households had received advance payments from a labour contractor for working in the dry season of 2013.

Economic aspect of seasonal migration

Seasonal migrants are offered work and onsite residence. Work at the destination entails long working hours, averaging about twelve hours daily. They are paid a part of their wages during the employment period on a weekly basis. The remaining amount is settled at the end of the season. This binds the worker to his/her employer. The carryover of advances from one season to the next ensures the availability of workers for the next season. After 5 to 6 months of work in the dry season of 2012, only 54 % of the migrant households could repay the advance amounts taken from the labour and have a surplus. The remaining could not repay even the advance amount they had taken. This binds the worker to the labour contractor, a relationship that is 'strengthened' through loans/debt. It denies the employee various freedoms, including the freedom to negotiate the terms and condition of his/her contract. The average duration of such 'relationships' was found to be 6.6 years. This is indication of the vicious cycle of debt they are trapped into.

Figure 3 explains the economic aspect of seasonal migration. The share of income from seasonal migration in the annual wage income of a work unit (Koita) is found to be 80%, confirming the necessity of seasonal migration for

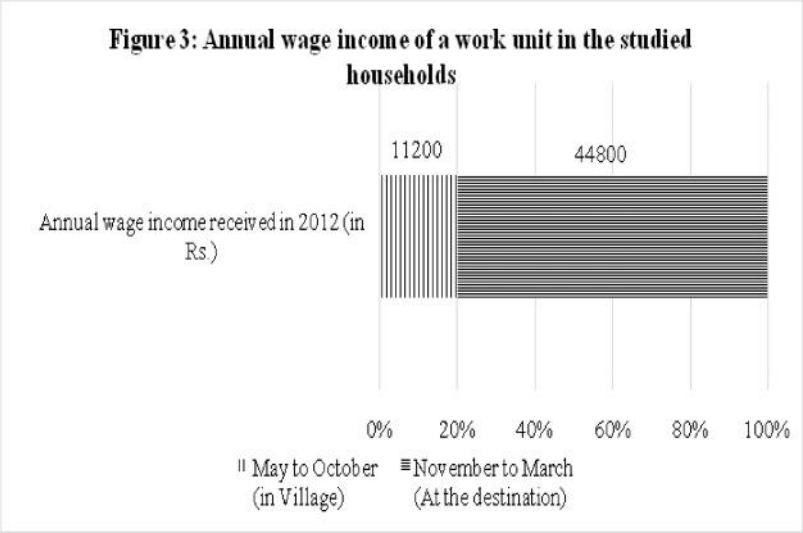


Fig. 3

ensuring a livelihood for the households. After repayment of the advance amount taken from the labour contractor, only 54% of the seasonal migrant households had a surplus left. Of these 51% could save less than 10,000/- rupees and the rest, more than 10,000/-. Households that had a surplus (savings) were asked what they did with the money. 41% of the households reported that they had spent this amount on food and other expenses needed for daily living. There is not much disposable income and thus, the amounts earned from seasonal work are used to meet essential needs and paying off of debts. This finding is also an indicator of the dependence on seasonal migration for survival.

Social cost of seasonal migration

Besides its economic benefits for the migrants, seasonal migration has significant negative consequences, such as poor living conditions in the destination locations, loss of school days for the children, experience of fear and insecurity by the women migrants, and adverse impact on health. At the destination areas, most of the migrants (97 %) live in temporary shelters near their workplace; 98% reported that there is no provision for toilets. 49% of the respondents reported that they do not have access to safe drinking water. When asked about life at the destination areas, a seasonal migrant woman replied: "All this [the living conditions] comes after food; there is no meaning in having a good place to stay without anything to eat. We have been living this life for years and are now habituated to these conditions."

Seasonal migration takes a severe toll on the education of the children of the migrants as they are never at one location throughout the academic year. Most households of seasonal migrants keep their school-going children in villages so that they would not miss school. But many children were staying alone when their parents migrated. In the Koita system, children are an essential (though informal) part of a work unit. They are made to do hard labour that jeopardises their lives, safety, and physical development. There were 604 children (0-14 years) in the sample population of which 360 (60 %) remained in villages during the dry season of 2012. It is found that 3 out of 10 children aged 6?14 years (school going age) had migrated; and six out of 10 children of school-going age were working at the destination. These children usually help their parents in their work and look after their younger siblings. Many children begin doing small chores at the work sites and eventually become absorbed into the labour force. A first-time woman migrant woman with two children (age 6 and 8 years), who was interviewed at the destination, stated: "It was so painful when I left my children… I miss them so much". Another woman also spoke along the same lines, "my two children are at home; one is in class five and another is in class six, they are alone there". When asked about her work, a 14-year old girl who was working with her parents for a sugar factory in Ahmednagar district replied "my sister and I help my mother in her work because the volume of work matters to us. If we work more, we are paid more". While talking to a school teacher on the reason why many children in the villages were out of school, she replied: "many migrants take their young children to their workplaces so that they can look after their siblings while the parents are working. These children miss school and eventually, many leave school early to become labourers".

In the overall population, among the children of school-going age, 14 % had never been to schools, or had dropped out. Of the 277 children of school-going age, 113 (40.8 %) were found to be studying in a grade that was lower than what was appropriate for their age. "My daughter is in the eighth standard. After we go back, she will resume her studies". Such responses were common. Of 95 children who were aged 16 to 19 years, only 18 % had completed their 10th grade. Thus, there is sufficient

evidence to show that the migrant community will remain deprived of educational opportunities and be stuck in a vicious cycle of economic backwardness. Although the Right of Children to Free and Compulsory Education Act (2009) guarantees education to all children up to the age of fourteen years, the children of seasonal migrants remain largely excluded.

Another negative aspect of seasonal migration is the fear and insecurity of women migrants in the destination areas. The decision on women's migration is usually taken by other members of the household, mostly the husbands or fathers/fathers-in-law (94%). A woman seasonal migrant woman said "…it is all decided by my husband. He runs the house. He takes money from the Mukhadam and spends it for us. When he asks me to move, I follow him. It has been the way of our life."

When asked about her prior knowledge of the destination and the nature of work there, a first-time seasonal migrant woman working for a sugar factory of Ahmednagar said "I was not aware of the place I was going to, nor about the work I would be doing and the wages I will be getting. I have not travelled so far from my home. We move our workplaces every day. Today we are working here. Tomorrow it will be someplace else. We go wherever we are told to by the Mukhadam". Most (87 %) of women workers reported that they feel safer in their home villages than the places they were working in. A high proportion of them (45 %) said that were afraid of their workplaces. When asked about life at the workplace, a seasonal migrant woman responded: "like everybody else, we are also more comfortable in our village. But what can we do? We have to live." It is found that women migrant workers are forced to live in vulnerable circumstances.

Exposure to dust and grime, lack of minimum basic facilities, and the drudgery of their work cause severe health risks among the seasonal migrants. They face unique health challenges due to their work environment, poverty status, inadequate housing, limited availability of clean water and sanitary facilities, inadequate access to healthcare, and lack of insurance. Table 3 shows the current health status (any medically diagnosed non-communicable diseases) of women who migrated during the dry season of 2012.

Table 3: Current health status of the seasonal migrant women

	n (%)
Seasonal migrant women diagnosed with any NCD	124 (36.5)
Distribution of non-communicable diseases*	
Back pain	79 (44.4)
Joint pain	63 (35.4)
Blood Pressure	8 (4.5)
Depression	7 (3.9)
Stroke	6 (3.4)
Lung disease	5 (2.8)
Cholesterol	4 (2.2)
Cataract	4 (2.2)
Heart disease	2 (1.2)
Total	340 (100)

* Denominator is 178 (the total reported NCDs by 124 women)

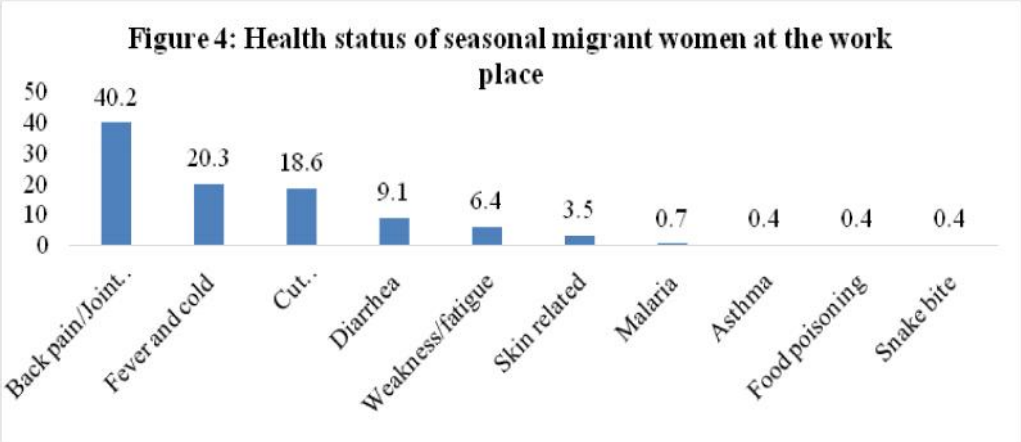


Fig. 4

The women were asked whether they were diagnosed with any non-communicable diseases during the past 12 months. Out of 340 women, 124 have reported that they were diagnosed with any one of the listed non-communicable diseases. This means that 36.5% of the sampled women had at least one non-communicable disease, totalling of 178 NCDs in 124 women. It is seen that 67% of this group of 124 women were diagnosed with one NCD, while 27.4% were diagnosed with having two NCDs. The remaining 5.6% were diagnosed with having more than two NCDs. Eighty percent of the ailments were back and joint pains which may be due to physical nature of their work. When there are high levels of exposure to the risk factors, especially in combination (e.g., repetitive lifting of heavy objects in awkward postures), there is greater risk of being affected by musculoskeletal disorders (MSDs). Given the working conditions of the women, it is reasonably certain that 80% of the seasonal migrant women are suffering from musculoskeletal disorders.

During last migration, 192 of the 340 women (56.5 %) reported that they suffered at least one illness/injury. The most frequently suffered illnesses/injuries were 'back pain/joint pain (40.2%), 'fever and cold' (20.3%), 'cuts/injury' (18.6 %) and Diarrhoea (9%). Their working conditions and the demands placed on their bodies make the women vulnerable to injuries and illness. Their poor economic status makes it difficult for them to access timely and appropriate medical care. Considering these facts, there must be targeted initiatives to bring this vulnerable section of the population under health insurance coverage.

Table 4: Descriptive statistics of each domains scores of Quality of Life

Domain	N	Minimum	Maximum	Mean	Std. Deviation
Physical	339	28.6	78.6	50.2	9.2
Psychological	339	16.7	75.0	48.9	10.7
Social relationship	339	16.7	83.3	55.6	13.6
Environmental	339	15.6	75.0	42.9	10.3

Quality of life

The result of Quality of Life tells us where the seasonal migrant women place themselves with regards to the following domains in their life: (1) physical health, (2) psychological, (3) social relationship, and (4) environmental. The details of each domain is given in the Table below:

It shows the descriptive statistics where the range of score for each domain of quality of life is given. In additional to these, mean score and standard deviation are also shown. The domain scores lies between 0 to100. The lowest score was found for the environmental domain, followed by the psychological health domain. The highest score was obtained from social relationship domain. The lowest score of physical domain of QoL is 28.6, and the highest score is 78.6. The mean score of physical domain is 50.2. The psychological domain score for seasonal migrant women falls between 16.7 and 75 (average score is 48.9). The score of social relationship domain varies between 16.7 and 83.3 (mean score is 55.6), and environmental domain score ranges from 15.6 and 75 (average score is 42.9).By using linear regression model, the researcher has analysed how the quality of life of women seasonal migrants varies by their socio-economic characteristics. For this, the researcher has used seven predictor variables such as religion, caste, age, household's size, the log of MPCE, education, and savings from migration. This model shows the significant predictors for each domain of quality of life. Results are described in Table 5.

The analysis shows that age is the single most significant predictor of quality of life for seasonal migrant women. Across domains except the environmental domain, age is a significant determinant. These values are significant at five percent level. Another important factor determines the physical quality of life for seasonal migrant women is the household size and saving. Women from large households have lower physical quality of life, and it is the other way around for savings. A unit increase in household size decreases 0.75 units from the physical domain of quality of life (five percent level of significance). When saving increases the physical quality of life also increases (an increase of 5.73 points) at the same time it makes six point increases in the environmental domain of quality of life. Non-SC/STs have an advantage of 2.04 over SC/STs in physical domain of quality

Table 5: Determinants of Quality of Life of seasonal migrant women: Linear Regressions

	Physical	Psychological	Social	Environment
			Religion	
Hindu®				
Non-Hindu	0.37	1.95	3.06	0.28
Caste				
SC/ST®				
Non-SC/ST	2.04*	-0.38	1.63	-2.9**
Age	-0.13**	-0.17**	-0.17**	-0.06
Household Size	-0.75**	0.14	0.78	0.1
MPCE	0.21	0.23	0.44*	-0.05
Education	-0.19	-0.12	-0.13	-0.06
Savings	-5.73**	2.76	3.66	6.00**

® Reference variable, ** 5% level of significance, * 10 % level of significance

of life whereas non-SC/ST is at a disadvantage of 2.9 points in the environmental domain of quality of life over SC/STs. A unit increase in MPCE increases 0.44 points in the social domain of quality of life.

What emerges from the finding is that age is the major predictor of quality of life for seasonal migrant women from rural Maharashtra. All other variables such as religion, caste, household size, MPCE, education and saving from migration have no direct impact on quality of life. The reason may be that the sampled women are homogenous in life situations even though they are heterogeneous in terms of the other background variables. The insignificance of these variables signifies that no matter what caste and religion the women belong to if there is no change in their life conditions. Likewise, the variables such as household's size, MPCE, education and savings from migration do not vary much from women to women.

Conclusion

Due to lack of water, frequent crop failure, and low returns from cultivation, agriculture in the state of Maharashtra is in a distressed condition. The situation is worse in the backward districts which have poor irrigation facilities. The peculiar geographical location of Beed district makes life even more difficult for the people who are dependent on agriculture or wage income for their livelihood. Cultivation is a gamble with the monsoon. To adapt, the relatively well-off farmers are turning towards cultivating sugarcane and cotton, which fetch better returns. Sugarcane has a guaranteed local market as the sugar cooperatives in the state buy sugarcane directly from the farmers at a remunerative price that is fixed by the state government. This is not the case with other crops. The expansion of cultivation of the water-intensive sugarcane has had adverse consequences for the marginal farmers because of the rapid depletion of groundwater. Cultivation of traditional crops has suffered. Households that are heavily dependent on wage employment and subsistence agriculture do not have the resources to adopt expensive long-term mitigating strategies. They have no option other than to resort to low-cost short-term actions like seasonal migration.

For these households, migration is clearly a coping strategy used in the face of acute unemployment and consequent income variability. It is more an ex ante risk management approach taken by households anticipating a failure in household income streams, and act before the event happens in order to cushion an income variation and its subsequent consequences such as poverty and food insecurity. The people living in such a hand-to-mouth economy such as landless labourers and small and marginal farmers who have no stocks to sustain them in the event of a drought adopt many coping strategies of which seasonal migration is a prominent one.

It is found that, as a family arrangement, adult members often decide to migrate to absorb the shock of seasonal income variability. It is a repeated annual livelihood strategy for the majority of the socially and economically disadvantaged households in the study area. This is an advance/debt-based circulation for hard manual labour, such as sugar cane cutting and transportation and by brick kilns for brick manufacturing to better-endowed areas within the state and outside the state.

The precariousness of the condition of seasonal migrant workers is a reminder of their vulnerability. Yet, paradoxically, the earnings from seasonal migration can be the only means of an income that is available to the poor households. However, it causes much discomfort, and the conditions at work sites are difficult. Among the difficulties, many talked about the lack of shelter. The vulnerable living conditions put a greater burden on the women among the seasonal migrants. The extra hardships and insecurity that fall on women are important aspects of seasonal migration. High prevalence of NCDs

(37/100 seasonal migrant women), especially of back and joint pains (musculoskeletal disorders) is found among seasonal migrant women. The most critical social cost borne by seasonal migrants is in their inability to send their children to schools. Many eligible children in the study population were found to be out of school because they are compelled to travel with their parents. As consequence, they are deprived of educational opportunities, thus perpetuating the vicious cycle of lack of education and poor livelihood opportunities.

In general, migration has great emancipatory potential for it helps to take people out of poverty and often helps them to accumulate wealth. However, the migration discussed here is distress-driven in nature and serves the purpose of mitigating the limited livelihood options available to the people in their villages. This, in the short term, helps people to just ensure their survival; however, in the long term they are at a disadvantage. One may thus conclude that seasonal migration from the villages of Beed is a compromise where the households knowingly bear the social cost for ensuring that their immediate material needs are taken care of.

References

Black, Richard, Bennett, Stephen R. G. Thomas, Sandy M. and Beddington, John R., 2011, "Climate change: Migration as adaptation," *Nature* 478 (7370), 447- 449.

Breman, J., 1978, "Seasonal migration and crushing of cane and of labour by sugar factories of Bardoli," *Economic and Political Weekly*, 13, 1317-1360.

Breman, J., 1985, *Of peasants, migrants and Paupers: Rural labour circulation in capitalist production in West India*. Delhi: Oxford University Press.

Breman, J., 1994, *Wage hunters and gatherers: Search for work in the urban and rural economy of south Gujarat*. New Delhi: Oxford University Press.

Breman, J., 1996, *Footloose Labour: Working In India's Informal Economy*. Delhi: Cambridge University Press.

deHaan, A., 2002, "Migration and Livelihoods in Historical Perspective: A Case Study of Bihar, India," *The Journal of Development Studies* 38(5), 115-42.

Deshingkar, P., and Farrington, J., 2009, *Circular Migration and Multilocational Livelihood Strategies in rural India*. New York NY: Oxford University Press.

Haberfeld, Y., Menaria, R.K., Sahoo, B.B., and Vyas, R. N., 1999, "Seasonal Migration of Rural Labour in India," *Population Research and Policy Review*, 18 (5), 471-487.

Keshri, K., and Bhagat, R. B., 2012, "Temporary and Seasonal Migration in India: Regional Pattern, Characteristics and Associated factors," *Economic and Political Weekly*, 47(4), 81-88.

Rao, U., 1994, *Palamoor Labour: A Study of Migrant Labour in Mahabubnagar District*. Hyderabad: C.D. Deshmukh Impact Centre, Council for Social Development.

Rogaly, B., 1998, "Workers on the Move: Seasonal Migration and Changing Social Relations in Rural India," *Gender and Development*, 6(1), 21-29.

Rogaly, B., Biswas, J. Coppard, D. Rafique, A. Rana K., and Sengupta, A., 2001, "Seasonal Migration, social change and migrants rights: Lesson from West Bengal," *Economic & Political Weekly*, 36, 4547-4559.

Scheffran, J., et al., 2012, "Migration as a contribution to resilience and innovation in climate adaptation: Social networks and co-development in Northwest Africa," *Applied Geography*.

Tacoli, C., 2009, "Crisis or Adaptation? Migration and Climate Change in a Context of HighMobility." in: *Population Dynamics and Climate Change*, edited by J.M.Guzmán, G. Martine, G. McGranahan, D. Schensul and C. Tacoli. New York: UNFPA; London: IIED.

Teerink, R., 1995, "Migration and its impact on Khandeshi women in the sugarcane harvest," in *Women and Seasonal Labour Migration* edited by Schenk-Sandbergen, *L. New Delhi: Sage Publications.*

●●●

NGJI, An International Refereed Journal
(NGSI-BHU, ISSN: 0027-9374/2017/1668)
Vol. 64, No. 3-4, Sept.-December, 2018

Spatial Distribution of Education Facilities in Haveri District

H Nagaraj[1] and S. L. Karlawad[2]

Abstract

Three countrywide programmes, District Primary Education Programme (DPEP); Surva Shiksha Abhiyan (SSA); and Rastriya Madyamic Shikshan Abhiyan (RMSA), have given great emphasis on reducing all kinds of disparities in access as well as participation in primary and secondary education at the district level. While secondary education is yet to be provided to all sections of population and to all the habitations, inequalities continue to persist in terms of provision of educational opportunities at all levels in the study area. The main objectives of the study are to examine the spatial distribution of primary and secondary educational facilities and to identify different levels of educational development based on the different variables at the taluka level. The present study has identified the levels of development on the basis of availability and population served by educational amenities in each taluk. Most of the taluks are found in the medium level of development and Ranebennur taluk (6.69%) is in the category of very high levels of development and Savanur taluk (3.52%) is i in the extremely low levels of development.

Keywords: *education facilities, uniform development, rural population, settlements*

Introduction

Education is a basic need of any healthy society. India, being a developing country, education here promotes the welfare of its citizens. Despite the fact that during last more than half a century, *i.e.*, after the India's independence, tremendous progress has been made in the field of education. Though the country is very vast, there is a wider perspective in its socio-cultural characterist with multi-religious and multi-linguistic dimensions that are also taken into consideration for providing educational facilities to all sections of population irrespective of their caste, class, sex or place of residence. It is specifically true for elementary education as it is a constitutional directive to the government to provide free and compulsory education to all children of the country till they attain the age of 14 years. Special measures have been taken to facilitate backward areas to ensure that they get equal opportunities of education. It is disappointing to note that the present system of education in India led to inequalities which are per-

1. Professor of Geography, University of Mysore, Mysore
2. Asst. Professor in Dept. of Geography, KLES, R.R.W. Womens College, Ranebennur

sisting in the field of education.

National Policy on Education (1986), its Programme of Action as well as its modified version of 1992, have shown great concern and given commitment for education for equality. It lays special emphasis on the removal of disparities and suggests measures for equalization of educational opportunities. District Primary Education Programme (DPEP) and Surva Shiksha Abhiyan (SSA) these two countrywide programmes have given great emphasis for all the district are related to reducing all kinds of disparities in access as well as participation in primary and secondary education.

Inequalities are still persisting in the provision of educational opportunities even at the primary and secondary level as primary and secondary schools have not yet been provided to all sections of population and to all the habitations in the study area. All India Educational Survey (2002) Primary schools have not been provided to cent percent habitations within a walking distance of one kilometer. Similarly higher primary schools within three kilometers, walking distance in the country. This is despite the fact that a uniform criterion of one kilometer in large and diverse country like India is also questionable as one kilometer distance in remote rural and backward area. This is because simple distance norm does not take into account either the physical barriers or the transport facilities available at a place for attending school.

Educational organization helps to establish codes of social conduct, behavior and status of living, that the people participating in various social, cultural and economic activities. The educational institutions and socio-cultural aspirations all of them, form such an organizational set up (K. V. Sundaram 1977). Even in tribal and backward communities, some form of a primitive organization was necessary through which could be exchange for essential requirements and thereby social, educational needs could be fulfilled. The spatial form of this organizational framework manifests as a system of hierarchy of settlements starting with the small village and encompassing the market towns, the trading centre, the large city and the metropolitan complex.

The nature of educational facilities required for social well-being in a region varies according to the general development of the region. An appraisal of educational facilities as observed in the study area, therefore, is in order. The analysis of existing spatial organization of educational facilities is necessary for the fulfillment of the aim of balanced educational development of the study area. A classification of educational facilities is presented in table-4.6. In this classification, all the existing six educational facilities have been grouped into two broad categories, i.e. primary and secondary education facilities.

Study Area

Haveri district is situated in the western sector of the Karnataka State. The district encompasses an area 485156 hectareslaying between the latitudinal parallels of 14° 19? North and 15° 09? North and the longitudes of 75° 01? East to 75° 50?East. In its shape the district may be regarded as roughly resembling an inverted square shape as per Peter Hagget's method shape index. Its greatest length from north to south is about 111 kilometers and its great extended from east to west is about 87 kilometersa. The district is bounded on the North by the districts of Dharwad and Gadag on the South by the districts of Davanageri and Shimogga and the west by the district of North Canara.

Methodology

Statistical methods have been used in working out a system of weight-age, derived from the observed data matrix. The data matrix in the deviation form is obtained by subtracting column Mean (x) from observations in their cor-

responding columns. This method obviously, has serious limitations as it begins by equalizing the variances, it seeks to explain. It has been observed that important development indicators tend to be mutually correlated and exhibit high degree of dispersion in their distribution. The taluk-wise spatial distribution of educational facilities has been categorized at three levels viz., very high, medium, low and very low on the basis of availability of educational facilities in the rural settlements. Further taluk-wise distribution has been discussed with a view to examine the concentration of educational facilities.

Objectives

1. To examine the spatial distribution of primary and secondary educational facilities.
2. To identify different levels of educational development based on the different variables.

4.8 Distribution of Primary and Secondary Schools

The primary and secondary schools are service-oriented establishments that provide educational facilities to the children. Adequate and effective distribution of educational facilities contributes immensely to the social well-being and needs of the people. In the study area attempted to provide universal educational services to the population through primary and secondary schools. Rapid population growth, widespread poverty and lack of financial resources for the provision of education facilities are identified as the key factors responsible for the uneven distribution of various categories of schools. As far as schools are concerned, there are various categories of schools in the study area.

The data presented in the table-01 shows that in the district there were 1515 primary and secondary schools out of which 79.33 percent are primary and more than 20 percent of secondary schools distributed in the study area. The primary education system is consisting of three categories i.e., lower primary, higher primary and lower primary with higher primary sections. In the Haveri district 27.78 percent schools have lower primary, 1.71 percent higher primary and 49.83 percent have both lower primary and higher primary sections. In secondary level of education has been consisting of lower secondary, higher secondary and lower secondary with higher secondary schools. As per 2011 census out of 20.67 percent of secondary school education, 18.28 percent of lower secondary, 1.12 percent of higher secondary and 1.25 percent of secondary with higher secondary schools are distributed in the district.

There are three taluks namely Savanur, Ranebennur and Haveri have more than 50 percent of primary with higher primary schools than the lower primary schools and Hirekerur (47.79 percent), Byadagi (47.58 percent), Hanagal (47.01 percent) and Shiggoan (41.05 percent) taluks are having lower than the district average percentage of primary with higher primary schools, due to large number of settlements with high size of population and rapid growth of population in these settlements the main factor for high concentration, where as in the lower primary section, only two taluks i.e., Shiggoan (36.31 percent) and Hanagal (32.66 percent) have high percentage of lower primary schools than the district (27.78 percent) average. The percentage of schools having only higher primary section is highest in Shiggoan (2.10 percent0 followed by Haveri (2.09 percent), Byadagi (2.07 percent) and Hirekerur (2.01 percent). However, such exclusive higher primary schools are more than the district average percentage.

The spatial distribution of secondary education system in the district shows that variations exist in all the categories, The pattern of lower secondary schools in southern part of the

district has more than 18 percent of the taluks like Byadagi (22.06 percent) followed by Haveri (19.24 percent), Hirekerur (18.87 percent) and Ranebennur (18.75 percent).

Generally, this part is economically prosperous and having urban centers like Kodiyal-Hospet and Rattihalli. In Southern taluks of the district five to ten villages per taluks have the facilities of the secondary school. While in the higher secondary school category of the district has low percentage of schools, hence schools coming under this category are even less 2 percent Hanagal, Haveri, Savanur and Byadagi taluks. There is not sizeable proportion of schools having lower secondary, higher secondary and lower secondary with higher secondary sections. There are 1.25 percent of secondary with higher secondary schools in the district out of 20.67 percent of secondary section. The number of schools located in a particular area is the parameter for determining educational access. In the Savanur and Hirekerur has the highest percentage of secondary with higher secondary schools, while Ranebennur, Shiggoan and Byadagi taluks have lowest percentage share of schools.

4.10 Levels of Education Development

Educational development is the result of interaction between various primary and secondary education institutional factors. The task of educational planning is to prepare a comprehensive education development plan, an integrated and co-ordinate plan between the primary and secondary schools that is between different levels of development in the study area. This part of the study deals with the measurement and

Table 1: Taluk wise Distribution of Primary and Secondary Schools in Haveri District-2011

Name of Taluks	Primary Schools	Upper Primary Schools	Primary With upper Primary School	Secondary Schools	Higher Secondary Schools	Secondary with higher Secondary Schools	Total Primary	Total Secondary	Total Primary &Secondary Schools
Byadagi	38 (26.20)	03 (2.07)	69 (47.58)	32 (22.06)	02 (1.37)	01 (0.68)	110 (9.15)	35 (11.18)	145 (9.57)
Hanagal	82 (32.66)	05 (1.71)	118 (47.01)	41 (16.33)	01 (0.39)	04 (1.59)	205 (17.05)	46 (14.69)	251 (16.56)
Haveri	57 (23.84)	05 (2.09)	127 (53.13)	46 (19.24)	0 0	04 (1.67)	189 (15.72)	50 (15.97)	239 (15.77)
Hirekerur	67 (26.90)	05 (2.00)	119 (17.79)	47 (18.87)	06 (2.40)	05 (2.0)	191 (15.89)	58 (18.53)	249 (16.43)
Ranebennur	76 (25.00)	02 (0.65)	168 (55.26)	57 (18.75)	53 (2.62)	01 (.032)	246 (20.46)	58 (15.53)	304 (20.06)
Savanur	32 (23.35)	02 (1.45)	76 (55.49)	24 (17.51)	0 0	03 (2.18)	110 (9.15)	27 (8.62)	137 (9.04)
Shiggoan	69 (36.31)	04 (2.10)	78 (41.05)	30 (15.78)	8 (4.21)	01 (0.52)	151 (14.56)	39 (12.46)	190 (12.54)
District	421 (27.78)	26 (1.91)	755 (49.83)	277 (18.28)	17 (1.12)	19 (1.25)	1202 (79.33	313 (20.67)	1515 (100)

Source: Computed by the researcher, 2011

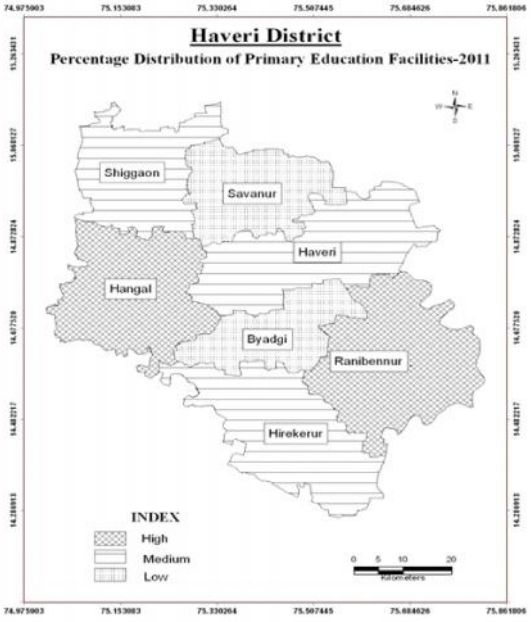


Fig. 1

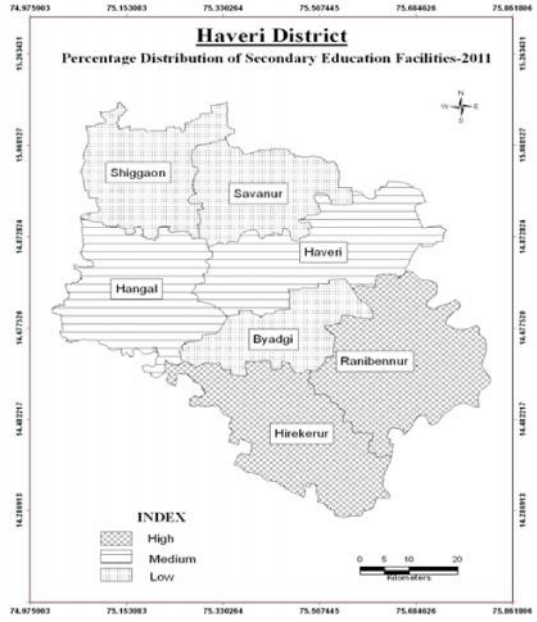


Fig. 2

analysis of levels of development on taluka level, with a view to work out imbalances in the spatial distribution of education facilities in the district.

For the purpose of inter-taluka comparison it would be desirable may absolutely essential to combine various individual indices into an overall measure to operationalized the concept of spatial distribution of educational facilities. The composite index is obtained by aggregating individual indicators of education development. The following approach the indicators of educational facilities are 1) primary education facility, 2) secondary education facility. There are two indicators calculated for each facility, one relates to percentage of the population covered and other relates to percentage of the settlements covered.

4.11 Composite Index of Educational Facilities

The education system extends from preschool provision through the statutory school-age years to a variety of further education opportunities in schools and colleges. The school is often the focal point of local social life (Kundu A.1971). It plays important role in improving the rate of literacy, living standard and the ability to face the social problems. The spatial distribution of educational facilities has been grouped in five levels. The levels of development has been derived, on the basis of two aspects, as the percentage of population served to total rural population and another is the percentage of settlement, where the facilities are available. Composite score is obtained by aggregating the individual indicators as indicated in table-02.

High Level

It has also been observed that only one taluk come under this category of high level. The maximum educational facilities exist in Ranebennur taluk, where about 94 percent of settlements are having primary educational facilities and 97 percent of the population of the taluk is covered by them, where as 35 percent of settlements and 61 percent of population has

been served by the secondary education facilities. The composite score is 4.39, naturally highest among all taluks in the district. In terms of composite score, the high level is the ranging from 4.23 to 4.51. It is to be noted that the Ranebennur taluk fall under this category in the south eastern part of the study area. It can therefore, be concluded the level of development is better in areas traversed by major transport arteries, development of agro-industries in rural areas, improvement agricultural markets in the rural areas and more number of large size of rural settlements.

Medium Level

The composite index for medium level ranges from 3.93 to 4.22. The medium level comprises three taluks namely Haveri (4.17), Hirekerur (4.11) and Byadagi (3.94) where these are making one belt in the cental part of the study region (fig-4.8). In Hirekerur taluk 97 percent of settlements are having primary school facilities and 36 percent of settlement with secondary school facilities, while 98 percent and 55 percent of population served by each school facilities respectively, where as in the Byadagi taluk 94 percent of settlements and 93 percent of population served by the primary school facilities and 34 percent of settlements and 58 percent of population is served by the secondary school facilities. While compare to the two taluks of medium category, Haveri taluk has low level of proportionate percentage of settlements with 90 percent and population with 94 percent by primary school facilities and 31 percent settlements served 61 percent of population by secondary school facilities.

Table 2: Taluk wise Availability of Educational Facilities in Rural Settlements of Haveri District-2011

Name of Taluks	Primary Schools	Upper Primary Schools	Primary With upper Primary School	Secondary Schools	Higher Secondary Schools	Secondary with higher Secondary Schools	Total Primary	Total Secondary	Total Primary and Secondary Schools
Byadagi	38 (26.20)	03 (2.07)	69 (47.58)	32 (22.06)	02 (1.37)	01 (0.68)	110 (9.15)	35 (11.18)	145 (9.57)
Hanagal	82 (32.66)	05 (1.71)	118 (47.01)	41 (16.33)	01 (0.39)	04 (1.59)	205 (17.05)	46 (14.69)	251 (16.56)
Haveri	57 (23.84)	05 (2.09)	127 (53.13)	46 (19.24)	0 0	04 (1.67)	189 (15.72)	50 (15.97)	239 (15.77)
Hirekerur	67 (26.90)	05 (2.00)	119 (47.79)	47 (18.87)	06 (2.40)	05 (2.0)	191 (15.89)	58 (18.53)	249 (16.43)
Ranebennur	76 (25.00)	02 (0.65)	168 (55.26)	57 (18.75)	53 (2.62)	01 (.032)	246 (20.46)	58 (15.53)	304 (20.06)
Savanur	32 (23.35)	02 (1.45)	76 (55.49)	24 (17.51)	0 0	03 (2.18)	110 (9.15)	27 (8.62)	137 (9.04)
Shiggoan	69 (36.31)	04 (2.10)	78 (41.05)	30 (15.78)	8 (4.21)	01 (0.52)	151 (14.56)	39 (12.46)	190 (12.54)
District	421 (27.78)	26 (1.91)	755 (49.83)	277 (18.28)	17 (1.12)	19 (1.25)	1202 (79.33	313 (20.67)	1515 (100)

Source: Computed by the researcher, 2011

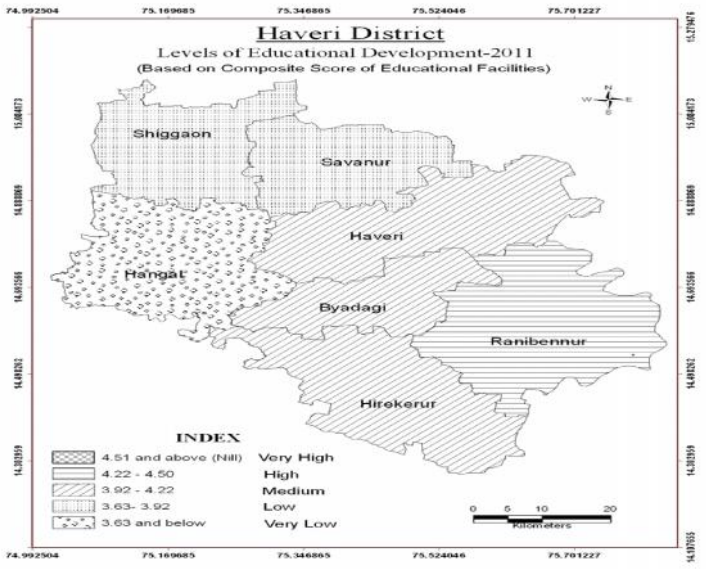


Fig. 3

taluk 93 percent villages and 97 percent population is covered by primary, while 26 percent villages and 45 percent population has access to secondary education facilities.

Low Level

The low level ranges from 3.64 to 3.92 in terms of value of the composite score. There are two taluks like Savanur and Shiggoan found in this category, located in the northern part of study region. The Shiggoan taluk is having the low level of composite score with 3.70 and Savanur with 3.77. It is noted that the 94 percent of settlement served 96 percent of population by primary education facilities and 23 percent settlements served 47 percent population by secondary education facilities in Shiggoan taluk where as in Savanur

The discussion shows that the uneven distribution of educational facilities in the study area. Minimum secondary education facilities have been observed in both the taluks. On the basis of above analysis, it reveals that educational facilities must be extended in the remote areas of the region to improve the rate of literacy and social development in rural community.

Very Low Level

There is only one taluk of Hanagal (3.46) found in the category of very low level. The value of composite score for this category is below 3.63. It is found that the north eastern part of the district i.e., Hanagal taluk has 88 percent of settlements with primary schools which covered 92 percent of population and 21 percent of settlements served 43 percent of population by secondary school education.

Conclusion

After the analysis of levels of educational development on the basis of availability of educational facilities in rural settlements of the study area, it can be concluded that most of the small size settlements are lacking from such basic facilities. The spatial distribution of facilities does not follow any pattern. Thus, it can be suggested, that disparities should be reduced on the basis of scientific spatial planning.

References

Agarwal P. C. and Khan Z. T. (1978): Spatial Analysis of the Levels of Regional Development in Madya Pradesh" Modern Geographical Trends, (Ed) by P. Pandey. p. 315.

Ahammad. E. (1952): "Rural Settlement Types in Uttar Pradesh". Annals of the Association of American Geographers, Vol. 42, Pp. 223-246.

Alvi. S. Z (1969): Age Group Structure in U. P. The Geographer, vol. 6, Pp. 27-40.

Bhat L. S. Kundu. A and Mahapatra (1976), "Micro Level planning; a case studies of Karnal Area, Haryana, India" K. B. Publications. New Delhi, Pp. 49-56.

Bose. A. N. (1992): "In Search for Alternative Direction for Development". Indian Journal of Regional Science, Vol. 24/2, Pp. 9-16.

Chand, M. and Puri, V. K (1983); "Regional Planning in India", Allied Publication Pvt. Ltd, New Delhi. p. 138.

Chandna. R. C (2009), Literacy in Punjab and Haryana-2001, Punjab Geographer, Vol. 5, Pp.116-120.

Das. H. P (1980): The Problem of Immigration in Assam: A Geographical Review and Interpretation. An Address to the National Association of Geographers, India.

Das Tapas Ranjan. (1993): "Regional Inequalities in Educational Development in Orissa". Indian Journal of Regional Science, Vol. 25.No. 1. Pp. 189-195.

Gosal. G. S. (1961), The Regionalism of Sex Composition of India's Population, Rural Sociology, Vol. 26. No. 2, p. 134.

Gosal. G.S. (1982), Recent Population Growth in India, Population Geography. Vol. IV, Pp.30-51.

Kundu. A. (1975), "Construction of Composite Indices for Regionalization: An Enquiry into the Methods of Analysis, Geographical Review of India, Vol. 37, No. 1, March, 1975, Pp. 46-59.

Mishra J. P. (1991): Development of Rural Settlement geography, in Moury S. D. (ed): Settlement System in India. Vol. I, Chough Publication, Allahabad. p. 128.

Mishra. R. P. (1969): Regional Planning Concepts, Techniques, Policies and Case Studies, Mysore, Prasarang, University of Mysore, Ed. 1969. p. 121.

Ramegouda K. S (1986); Urban and Regional Planning: Principles and Case Studies, Director, Prasarang, University of Mysore, Pp. 34-38.

Siddiqui. F. A (1984): Regional Analysis of Population Structures: A case study of Uttar Pradesh, Pp. 60-85.

Singh. K. N. (1966); "Spatial Patterns of Central Places in the Middle Ganga Valley". National Geographical Journal of India, Vol. 12, Pp. 218-226.

Vyas P. R (1991); Social Amenities and Regional Development in Mewar Region", Rawat Publication, Jaipur, 1991. Pp. 170-193.

●●●

NGJI, An International Refereed Journal
(NGSI-BHU, ISSN: 0027-9374/2017/1673)
Vol. 64, No. 3-4, Sept.-December, 2018

The Demographic Consequences of Partition of India (1947) in Punjab

Awadh Narayan Choubey[1] and Taruna Bansal[2]

Abstract

The advent of Independence in the Indian subcontinent saw some major movements of population and inter-community violence in the country especially in the Punjab province which perhaps witnessed the largest movement of mass population in modern times. Some aspects of this adversity and loss have been explored but most of the studies have not explored the demographic characteristics witnessed by the Punjab region after the partition despite the fact they nearly 9.2 million people were displaced because of this political turmoil.

In the present paper we have tried to analyse and study the magnitude of demographic debacle associated with Partition in the state of Punjab.

Keywords: *demographic consequences, partition of India, Punjab*

Introduction

The advent of Independence in the Indian subcontinent saw some major movement of population and inter-community violence in the country. Special reference needs to be made of the Punjab province which perhaps witnessed the largest movement of mass population in modern times. Some aspects of this adversity and loss have been explored by various authors and government agencies in the years since Partition. Yet the impact of Partition on demographic characteristics still remains largely unexplored.

In present times when one looks back at this historical event after 71 years it seems possible to explore the demographic significance with greater clarity. The mass movement of population on such a large scale can be recognised as an example of forced migration. One can say this because only some of it was voluntary in nature; and rest of it was a response to heightened communal tension which was of unprecedented magnitude. UNHCR (2006) throws light on the extent of what took place in the Indian subcontinent between 1946 and 1948.

1. Research Scholar, Department of Geography, Jamia Millia Islamia, New Delhi- 110025; Email- awadhonline@gmail.com
2. Assistant Professor, Department of Geography, Jamia Millia Islamia, New Delhi- 110025; Email- tbansal@jmi.ac.in

The report states they nearly 9.2 million were displaced and came under the category of refugees as a result of this mass migration. This forced migration of a huge mass population led to humanitarian catastrophe of enormous dimensions. Despite the good intentions of the policy makers and politicians, the people who were forced to migrate had to go through large hardships as they suffered grave losses of life, livelihoods and cultural heritage.

In the present paper we have tried to analyse and study the magnitude of demographic debacle associated with Partition in the state of Punjab. The paper is divided into five sections. The first section deals with the introduction. In the second section the objectives of this paper have been outlined. The database and methodology have been discussed in the third section; while the fourth section analyses the demographic changes Punjab underwent during and after the Partition. Here several indicators have been analysed which have been discussed in detail in the methodology. Conclusions are presented in the last section.

Objectives

The following objectives have been outlined for this paper :

1. To understand the demographic consequences of the Partition of India in the Punjab province.
2. To explore the variations witnessed in the rural and urban population as well as in the process of urbanization.

Database and methodology:

The main data source used for the analysis in this study is the Census of India 1951 and data collected from different literature. For a demographic analysis the following indicators have been used :

1. Population density
2. Growth rate of population
3. Variation in population
4. Birth and death Rates
5. Religious composition
6. Mass migration and displaced persons
7. Rural - urban population
8. Variation in rural - urban population
9. Process of urbanization

Each of these indicators have been analysed for 1941 as well as 1951 so that the changes that occurred during and after the partition in the study area could be examined. Due to the paucity of data the study is restricted to the state of Punjab (the districts that remained in India) and only provides a picture of the pre-independence province of Punjab (Fig. 1, 2, 7, 8). Robust methods of analysis have been used to understand the change but due to the lack of information and problem of comparability several indicators like sex ratio, movement of people from Punjab have been dropped from the analysis.

The entire analysis has been done at the district level; but, here too there was a problem of comparability as data on princely states during the British period is not available for 1941. In 1951 these states were brought under PEPSU (Patiala and East Punjab States Union), therefore a brief description has been given about the region to compare the situation in the different districts of Punjab after the Independence.

Analysis and discussion

The colonial phase of Punjab was marked by changes in its demography and it was more evident after the Partition. The region in the north-western part of the Indian subcontinent witnessed reorganisation of the administrative space, reclamation of vast stretches of wastelands by laying out of an extensive network of canal irrigation and construction of railways rendering connectivity to the region.

Nature of papulation and change

The discussion can be started with density

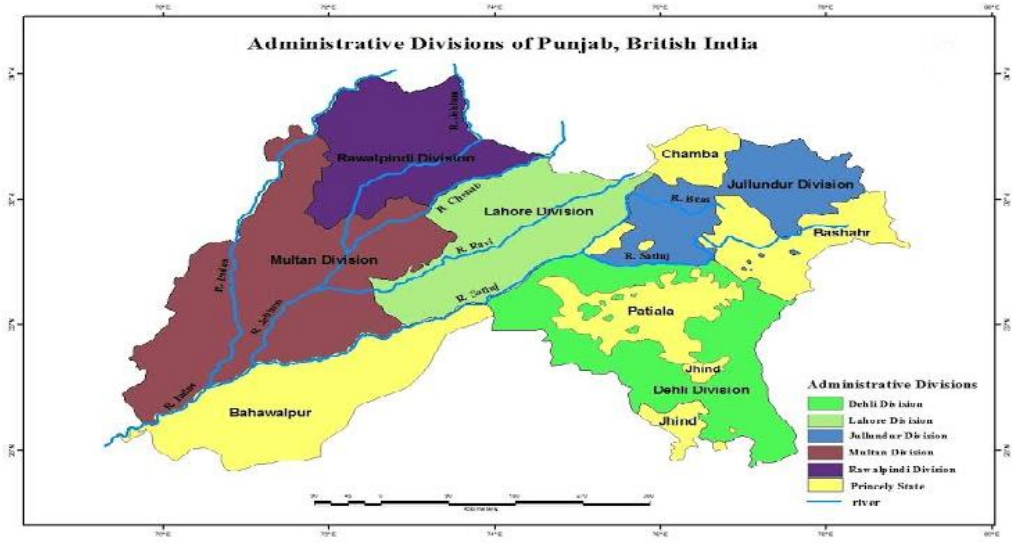


Fig. 1

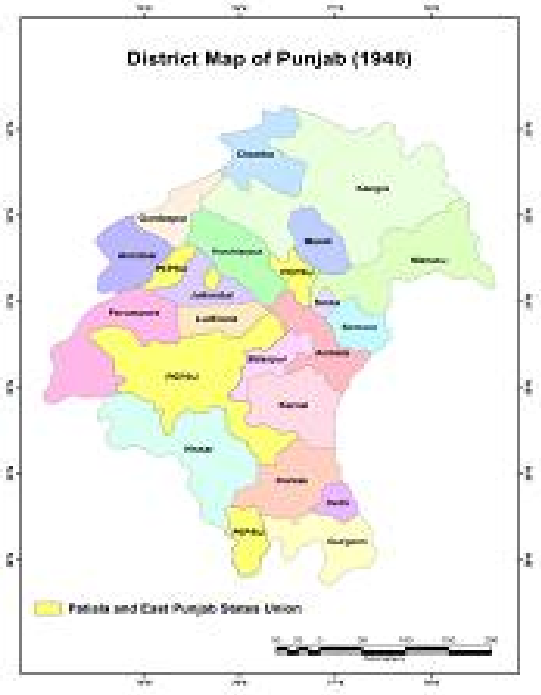


Fig. 2

of population which is measured as persons per square kilometre, growth rate of population (1941-51) and variation in population (1941-51).

The data and figures reveal that among the districts of Punjab (India) Simla experienced unprecedented change in its population figures from 1941 to 1951. This was primarily due to location of the seat of the Punjab Government at Simla following the partition of the United Punjab into Punjab (India) and Punjab (Pakistan). Another reason for this increase was administrative in nature which can be explained on two grounds--

i) the area of Simla district was dwindled down in 1951 from 1941, and,

ii) seven well populated urban estates of Bhrari, Sanjauli, Kasumpti, Patti, Rehana, Chakkar and Chotta Simla were added to the district.

Another district which experienced substantial change in its population was Delhi. This was because Delhi accommodated 495391 displaced persons. Apart from this the number grew at a faster rate in Delhi because being the capital of the Indian Union, it had wider scope for further industrial and commercial development.

The districts which show a dwindling down of population were Amritsar, Ferozepore, Gurdaspur, Jullundhar and Hoshiarpur. These districts, dwindling down of densities in 1951 was

because they had a significant number of Muslim population and the gap caused by the departure of the Muslims was not sufficiently replaced by the displaced persons. In the case of Amritsar the other reason for this dwindling down of density was its close vicinity to the state of Pakistan. Moreover, the Partition caused a major setback not only to its numerical strength but also to its industrial development.

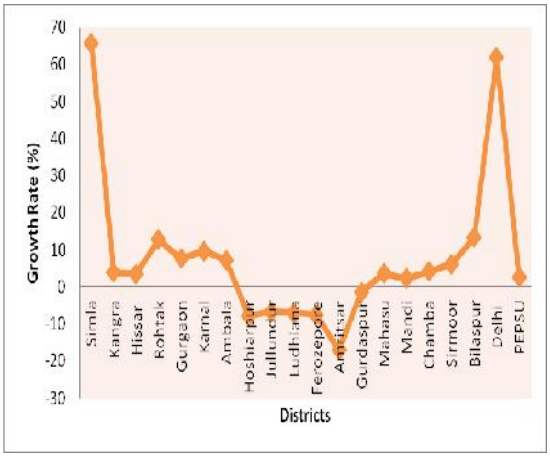


Fig. 3 Growth Rate of Population in theDistricts of Punjab (1941 - 1951)

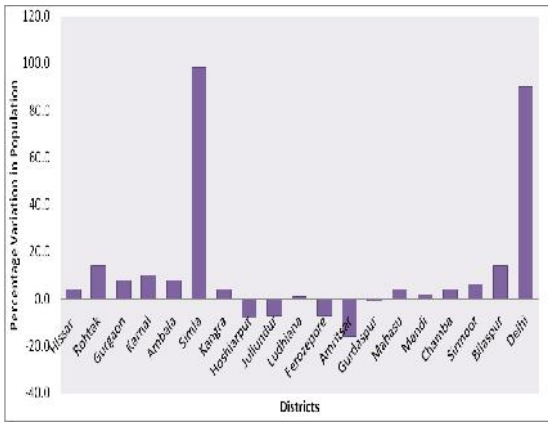


Fig. 4 Percentage Variation in Punjab (1941 - 1951) population in the districts of Punjab

Birth and death rates

In 1941 the birth and death rates were 43.2 and 26.2 per thousand persons. In 1942 there was a sudden increase in the death rates as a result of great epidemic of malaria almost in all the districts of Punjab. In 1943 the birth and death rates were 34.2 and 27.8, per thousand persons respectively. There were lesser number of births and deaths as compared with the preceding years. In 1944 and 1945 there were more births and fewer deaths as compared with the preceding years. In 1946 the birth and death rates were 40.3 and 20.0 per thousand persons respectively resulting in fewer births and less deaths as compared with 1945. In 1947 and 1948 there were fewer births and fewer deaths as compared to the figures found in the previous years. The situation changed in 1949 when the birth rate rose to 33.1 per thousand persons resulting in more births than in 1948. In the case of deaths there were fewer deaths as the death rate went down to 14.7 per thousand persons. In 1950 there were again more births and more deaths as compared with the past. Here the main cause for more deaths was the 1950 malaria epidemic in the region (Fig. 5). Therefore in the decade of 1941-1951 the birth rate dropped from 44 to 37 per thousand persons while the death rate decreased from 24 to 22 per thousand persons.

For further analysis, the birth and death rates of different districts have been analysed from 1944 to 1946 and than from 1948 to 1950. This provides us with a picture three years before the Partition and three years after the Partition. From 1944 - 46 a similar trend is found in all the districts. No visual change is evident from the data. But after the Partition a change can bee seen as birth rate in Simla district shows an increasing trend while that in Amritsar shows a declining trend.

In order to judge the effects of epidemics and deaths on the demographic pattern of the region one has to analyse the age pyramid of that particular region. This is more important in a region like Punjab because in the decade of 1941 - 51 the region witnessed not only epidem-

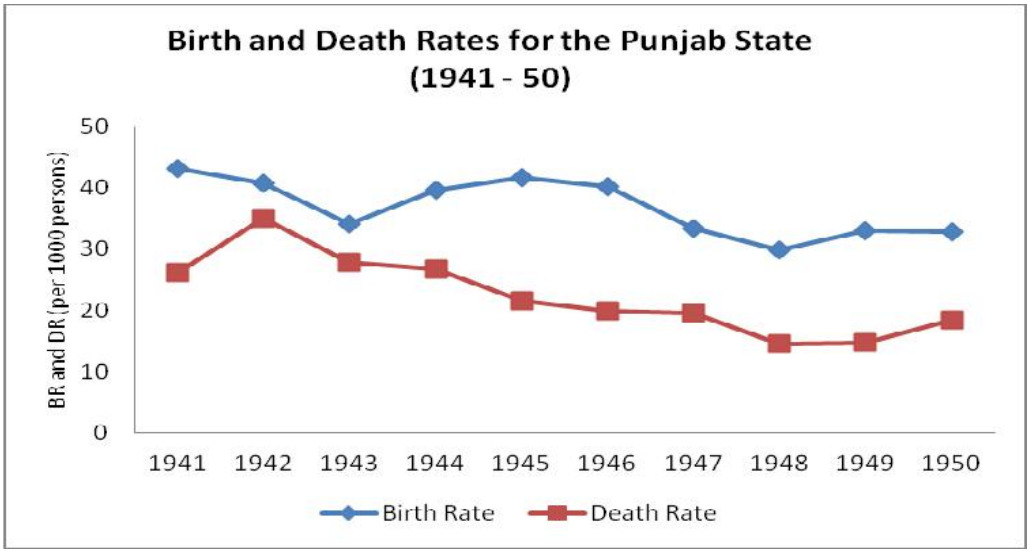


Fig. 5

ics in 1942 and 1950 but also underwent mass scale migration due to Partition. And the changes in the age pyramid (Fig. 6) is also an effect of these two reasons.

Religious composition

A striking consequence of the displacement of population in the province of Punjab at the time of Partition was the remarkable homogenization of the district populations by religion. In 1941 only four districts had a population with two-third majority of Hindus. These were Simla, Kangra, Karnal and Rohtak. Twelve districts had population with two-third majority of Muslims while in no district the Sikhs were in majority. In

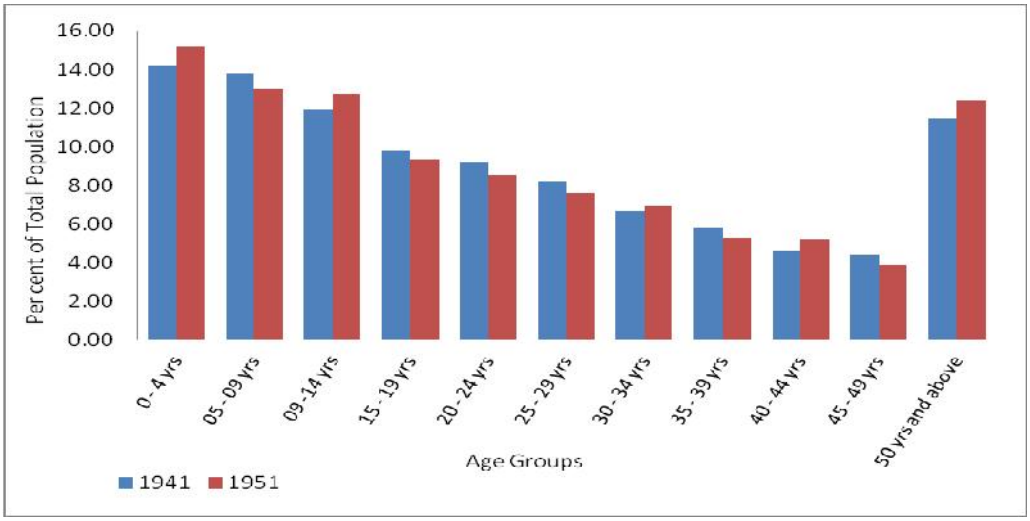


Fig. 6 Age Structure of Population of the Punjab State (1941 and 1951)

1951, 8 districts were with more than two-third Hindu majority; three with Sikh majority and none with Muslim majority. Only one district-- Gurgaon had about 17 percent of population as Muslims.

The Fige. 7 and 8 reveal that the districts in which the concentration of Hindu population increased where Hindus were in two-third majority in 1941 had nearly 80 per cent of their population as Hindus in 1951. Similarly, the proportion of Sikhs also got concentrated as the districts with 20 per cent or more Sikh population in 1941 now had nearly than 50 per cent Sikhs in 1951. The districts greatly affected by the administrative modifications in 1947 show a remarkable change like in both Jullundhar and Ludhiana where Muslim population was more than 35 per cent in 1941 reduced to less than half a per cent in 1951. It is interesting to note that the district in the Indian Punjab that retained a substantial proportion of its Muslim population in 1951-- Gurgaon showed relatively low loss rates and limited religious homogenization due to its proximity to Delhi, which with its large population of Muslims perhaps provided a sense of security or a temporary safe heaven for the Muslims in Gurgaon. The distribution of the religious communities and the changes observes in their proportion in 1941 and 1951 can be analysed in the light of the following reasons--

i) the higher rate of net migration of Muslims from India (other than Punjab) to the Punjab province of Pakistan after Partition;

ii) the higher rate of net migration of Hindus and Sikhs from the Pakistan Punjab to India outside Punjab and

iii) higher rates of mortality among the Punjabi Hindus and Sikhs in comparison to the Punjabi Muslims.

Mass migration and displaced persons

In 1947 a gigantic and an unprecedented mass migration took place from Punjab (Paecistan) to Punjab (India) and vice versa. This was the result of the Partition of the country into the dominions of Indian and Pakistan. The communal disturbances which started before the 15th of August 1947 and continued even afterwards. It was estimated that 55 lacs of Muslims migrated from Punjab (India) to Punjab (Pakistan) and 50 to 60 lacs Hindus and Sikhs

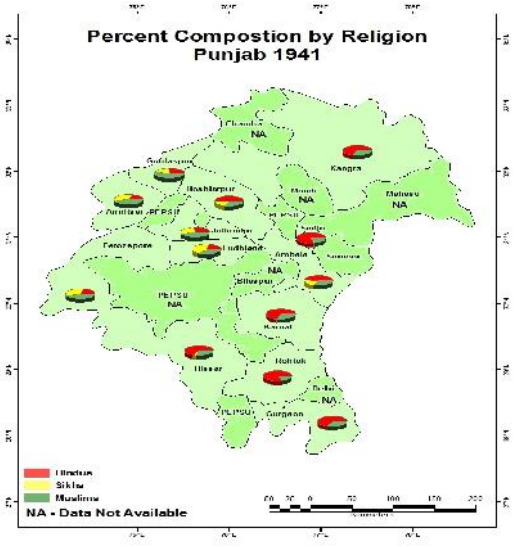


Fig. 7

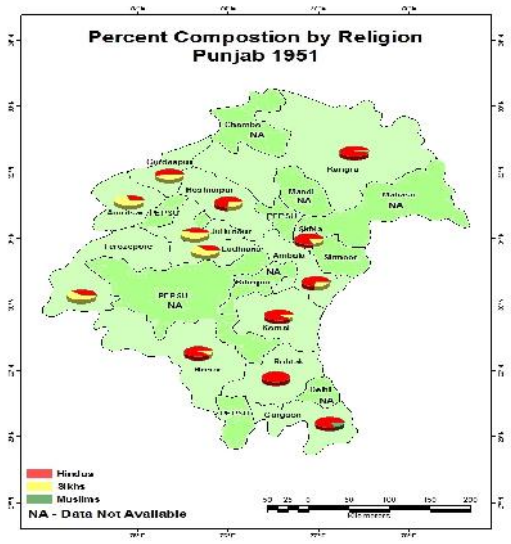


Fig. 8

crossed the border of West Pakistan to India. These disturbances had thoroughly dislocated and disorganised the civil administration of the region and in order to take the displaced persons to the place where they were to be settled, a fleet of 350 vehicles was organised. In total there were about 3,231,981 displaced persons of which 50.46 percent persons settled in rural areas while rest were provided accommodation in urban areas.

In urban areas there was shortage of houses so new model towns were built up in Jullundhar, Ludhiana, Nilokheri, Faridabad, Rajpura, Panipat, Rohtak, Karnal, Hissar, Jagadhari, Bhiwani, Hansi, Gurgaon, Palwal, Sirsa and Hoshiarpur. This scheme becomes more evident when one analyzes the pattern of settlement by displaced persons in different districts of Punjab (India). No definite pattern emerges as large number of displaced persons went back to their native villages where they had their own houses or relations to accommodate them. One who owned very little lands or no lands at all moved to a place which was suitable both from the point of view of security as well as means of earning a living.

Distribution of rural - urban population and their variation

While discussing the distribution of rural and urban population in Punjab during this period one has to keep in mind the fact that the population figures differ in these two censuses because of transfer of enclaves from one district to another within and without the states. Moreover to understand the distribution of rural and urban population in Punjab one has to comprehend the process of urbanization to the natural divisions within the state. The boundaries of the five districts, viz. Delhi, Bilaspur, Chamba, Sirmoor and Kangra did not undergo any change during the decade 1941-51. According to the census reports, the state of Punjab has been divided into the following divisions :

i) Western Himalayan region (consisting of 11 % population);

a) Himachal Pradesh and Bilaspur Division--Mahasu, Mandi, Chamba, Sirmoor, Bilaspur districts;

b) Himalayan Punjab Division--Simla and Kangra districts;

ii) Trans-Gangetic Plains region (consisting of 89 % population);

a) Punjab Plains division--Hissar, Rohtak, Gurgaon, Karnal, Ambala, Hoshairpur, Jullundhar, Ludhiana, Ferozepore, Amritsar and Gurdaspur districs;

b) PEPSU Division--Patiala, Barnala, Bhatinda, Kapurthala, Fatehgarh Saheb, Sangrur, Mohindergarh, Kohistan

c) Delhi Division--Delhi.

In the Himalayan division all the urban centres were small towns and majority of them were meant to serve as cantonments for European troops. As a result the proportion of rural population was much more than the urban population in 1941. Similar picture emerges even after the Independence. The trans-Gangetic region was much richer in urban centres even in the pre-colonial days. This was reflected in the census of 1881 when the total number of urban centres in this region was more than fifty. Large number of new towns emerged and these were evenly spread over the region (Fig-9 and 10). The analysis clearly shows that during this decade only two districts viz., Simla and Delhi had higher proportion of urban population. The reasons for this have already been discussed as the foomer became the capital of Punjab (India) and the latter capital of the Indian Union.

Another indicator to understand the change in the distribution of rural and urban population is the variation that occured during 1941-51 decade. The Fig. 6 indicates that in almost all the districts there was a positive variation with re-

gard to urban population except Amritsar. Simla and Delhi districts witnessed maximum positive change.

With respect to rural population the districts of Hoshiarpur, Jullundhar, Ludhiana, Ferozepore, Amritsar and Gurdaspur show a dwindling down trend during this decade. The reason being that a large proportion of Muslim population migrated to Punjab (Pakistan) and the replacement ratio was not enough to neutralise the impact of mass scale migration.

Urban morphology

The lop-sided urbanization existing in present - day India is a legacy of the colonial regime. The most remarkable characteristic of the process of urbanization in India is that it is top - heavy that is most of the population is concentrated in large cities especially what are regarded as class I cities. Similar scenario is evident from the data in Table 1 which shows that in 1941 the

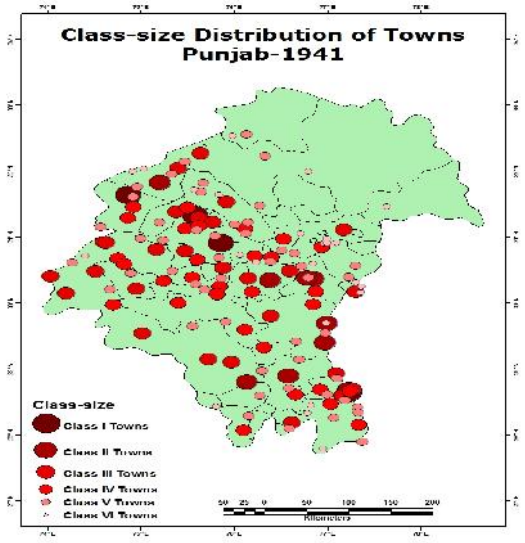


Fig. 9

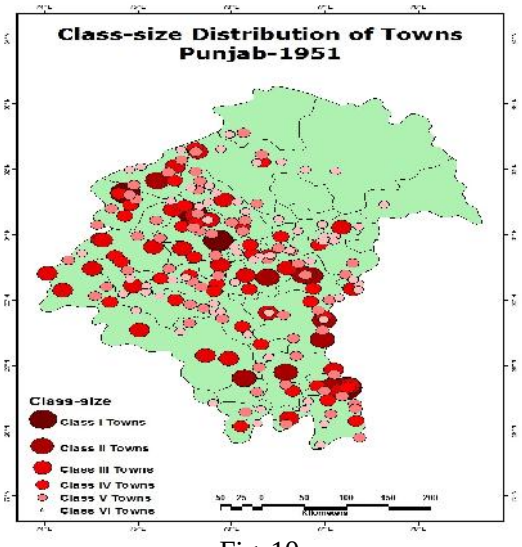


Fig. 10

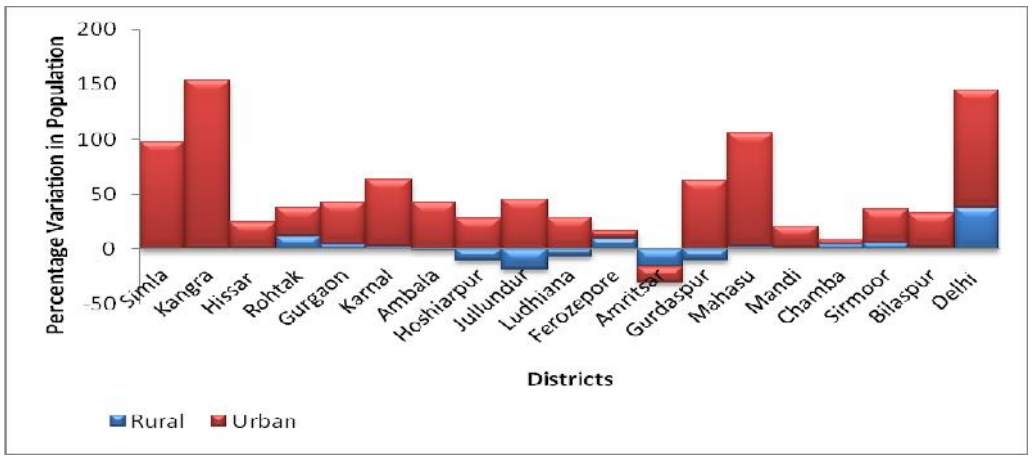


Fig. 11 Percentage Variation in Rural and Urban Population in the Districts of Punjab (1941 - 1951)

percentage of class I cities was 39.84 per cent and increased to 40.68 per cent in 1951. Class II and III cities have shown insignificant increase over the period. This is because the growth rates of bigger towns vis a vis class I towns is often higher than those of the lower order towns, the growth of the latter being determined by that of the regional economy. Class IV and V towns although have increased in number their proportion in the total urban population has decreased. In the case of class VI towns there has been increase and this is due to the new fact that several new towns came up.

Table 1: Per cent of urban population in six classes of towns in the Punjab State (1941-1951)

Class of Towns with Population Size (Persons)	1941		1951	
	No. of Towns	Per cent Urban Population	No. of Towns	Per cent Urban Population
I (100,000 +)	05	39.84	05	40.68
II (50,000 - 99,999)	09	12.93	10	15.42
III (20,000 - 49,999)	27	20.52	27	18.18
IV (10,000 - 19,999)	30	11.84	36	10.76
V (5,000 - 9,999)	51	11.99	64	10.32
VI (Below 5,000)	25	2.88	71	4.64
Total	147	100.0	213	100.0

Conclusions

The above analysis clearly demonstrates that the region under study, i.e. the Indian Punjab underwent a dramatic demographic upheaval in the decade 1941-51 as a result of the Partition in 1947. The data clearly indicates that the distribution of population changed drastically after the Partition. This was the result of mass migration from Punjab (India) to Punjab (Pakistan) and vice versa. Apart from this, the epidemics that occurred in 1942 and 1950 also had a severe impact on the population distribution. During this decade the two districts of Simla and Delhi experienced unprecedented growth while districts like Amritsar faced dwindling down of population.

Another major change that occurred in 1951 was the emergence of several new towns as large number of townships was established to accommodate and rehabilitate displaced persons. But the most striking transformation that took place was remarkable degree of religious homogenization particularly at the local level. These circumstances along with massive population movement and mortality resulted in the loss of traditional diversity and are still affecting the lives of people living in India and Pakistan and especially in Punjab.

Referens

Census of India, 1951, Volume VIII, Punjab, PEPSU, Himachal Pradesh, Bilaspur and Delhi

Davis, K., 1949, India and Pakistan: The Demography of Partition. *Pacific Affairs*, 22(3); pp. 254-264.

Grewal, R. and Grewal, J. S., 2005, Urbanization in Colonial Punjab in R. Grewal (ed.) *Five Thousand Years of Urbanization: The Punjab Region*, Manohar Publications, Delhi; pp. 149-50.

Hill, K., Selzer, W., Leaning, J., Malik, S. J. and Russell,

S. S., 2008, The Demographic Impact of Partition in the Punjab in 1947. *Population Studies*, 62 (2), pp. 155-170.

Krishan, G., 2004, Demography of the Punjab (1849 - 1947). *Journal of Punjab Studies*, 11(1); pp. 77 -89.

Kundu, A., 1983, Theories of City Size Distribution and Indian Urban Structure - A Reappraisal. *Economic and Political Weekly*, 18(3); pp. 1361-68.

Menon, V. P., 1957, *The Transfer of Power in India*. Bombay: Orient Longman.

Tablot, I. and Thandi, S., 2004, *People on the Move, Punjabi Colonial and Post Colonial Migration*, Oxford: Oxford University Press.

●●●

NGJI, An International Refereed Journal
(NGSI-BHU, ISSN: 0027-9374/2017/1678)
Vol. 64, No. 3-4, Sept.-December, 2018

Adverse Impact of Canal Irrigation on the Environment in Hyper Arid Parts of the Indian Desert

Sahila Salahuddin[1] and Salahuddin Quareshi

Abstract

Rajasthan is the largest state of 3,42,200 sq. km. It has a large population of over 70 million people with an average density of 205 persons per sq. km. Indian desert has the largest livestock pressure. Rajasthan has the largest 21.1 million hectares of land under crop landuse. It also has 3 million hectares of irrigated land. This scenario appears to be the result of obsession for bringing more area under cultivation even in the environments fragile and vulnerable to desertification. Indira Gandhi Canal has transformed the desert landscape in Ganganagar, Hanumangarh, Bikaner, Jaisalmer, Jodhpur and Barmer districts. It has brought about massive expansion of agriculture in the arid and hyper-arid lands of the Indian desert. However, there are shortages of water supply in the secondary distributary areas. Hence, the lands which were cleared off for agriculture and now with inadequate water supply have become vulnerable to aeolian processes of erosion and degradation. Their protective meagre but valuable vegetation cover was removed for agricultural expansion. The agricultural expansion even in the remote and acute desert areas did not benefit the indigenous poor people as most of the new agriculturalists in the area came from the neighbouring states of Punjab and Haryana. The present study is an environmental analysis in the Indira Gandhi Canal Command Area. The study undertakes a village level analysis of percentage irrigated area to the total geographical area of the village. The objectives of the study are to identify micro level environmental repercussions of canal irrigation in the Indian desert.

Keywords: *canal irrigation, desert agriculture, desertification, distance-decay, hyper arid, Indian desert*

Introduction

Desertification is potentially the most threatening ecosystem challenge. It has a widespread impact on the livelihood of the poor inhabitants in and around the areas susceptible to desertification. Persistent reduction of ecosystem sustainability, as a result of desertification, links the land degradation to a loss of human well-being. Dry lands occupy 41 per cent of the earth's land area and are habitat to more than 2 billion world population. Based on the research

1. Senior Research Fellow, Department of Geography, Aligarh Muslim University, Aligarh, 202002, U.P., Email : shl10@rediffmail.com
2. Professor, (Rtd), Department of Geography, Aligarh Muslim University, Aligarh, 202002, U.P.

estimates, nearly 10 per cent of the people of dry lands live in extremely desertified areas. Therefore, desertification ranks amongst the greatest environmental challenges today and is a major impediment to meet basic human needs in the remote dry lands. (UN, 2005)

The desert state of Rajasthan has the highest proportion of land under agriculture in comparison to all the deserts in the world. The main problem lies in bringing more area under cultivation even in the environments fragile and vulnerable to degradation. To meet the growing needs of irrigation, the government and farmers have largely focused on a supply side approach rather than improve the efficiency of existing irrigation systems. The world over, irrigation sector is the largest user of water. Almost 80 per cent of the water in the world is taken up by irrigation (in India, the irrigation sector uses approximately 85 per cent of its available water resources).The average rainfall in India is 1170 mm and given the geographical area of 3.2 million sq.km, gives India 4000 cu km of water. Almost 50 per cent of this water is lost to evaporation, percolation, sub-surface flows and only 1,953 b.c.m. is available for use. Because of spatial and temporal variation in the availability of water, only 1,086 b.c.m. is utilizable. (Phansalkar and Verma, 2005)

Indira Gandhi Canal initially transformed the desert landscape in Ganganagar, Hanumangarh, Bikaner, Jaisalmer, Jodhpur and Barmer districts. It brought a massive expansion of agriculture in the arid and hyper-arid lands of the Indian desert. The crucial problem of the area lies in shortages of water supply in the secondary distributary areas.

The livestock sustainable rangelands were cleared off for agriculture. Subsequently, with inadequate water supply they have become vulnerable to aeolian processes of erosion and degradation. Their protective but meagre valuable vegetation cover was removed for agricultural expansion. The agricultural expansion even in the remote and acute desert areas did not benefit the indigenous poor people, as most of the new agriculturalists in the area came from the neighbouring states of Punjab and Haryana. The study undertakes a village level analysis of percentage irrigated area to the total geographical area of the villages.

In the hyper arid areas some fragile environments are inherently vulnerable to desertification. Other environments have been rendered vulnerable to desertification by inadequate irrigation availability. The processes of desertification may be accelerated and accentuated by the agricultural practices which are quite risky in the hyper arid lands of active sand dunes, stabilised sand dunes, inter-dunal plains and the rangeland vegetation.

Database and research methodology

The study is based on data harnessed through field surveys. It also incorporates the Census data 2011. Land use and land cover data has been calculated from the Google Earth satellite imageries. Simple statistical techniques like standard deviation have been employed in data classification and analysis.

Location of the study area

The study area lies west of the Indira Gandhi Canal with mean annual rainfall less than 100 mm. Figure 1 portrays the spatial extent of the Indira Gandhi Canal in the hyper arid region along with secondary and tertiary distributaries.

The study area is not the core area of the Indira Gandhi Canal. Rather it is at the fag end of the Indira Gandhi Canal *i.e.* Stage II of the Accelerated Irrigation Development Programme, 1996-97. The Government of India tried to establish an irrigation system parallel to that of the Indus river system, to radically transform the Indian desert.

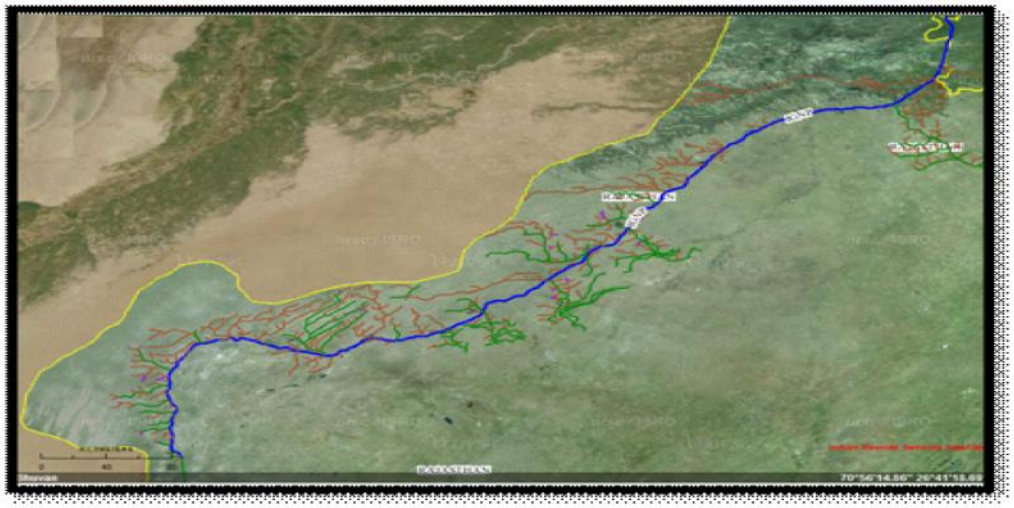


Fig.1 Network of Canal Irrigation in the Indian Desert

Farmers who have land at the end of the canal system are called tail-enders. They include farmers in the tail reach as well as those at the end of the upper and middle reaches of the canal system. It can be visualised that many of them get neither enough nor timely water. A national research study undertaken by the Development Support Centre shows that tail-ender deprivation is far more than assumed thus far. (Vaidyanathan, 1994)

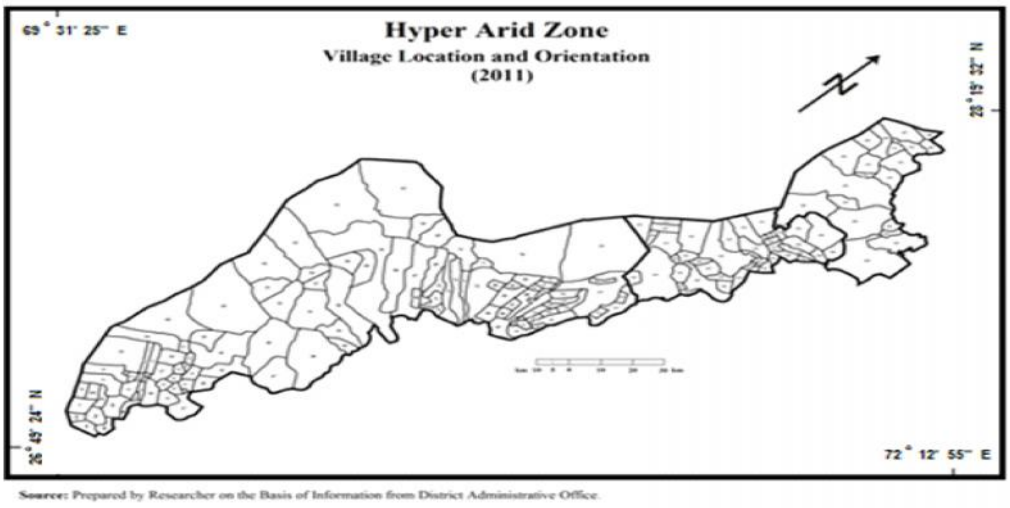


Fig. 3

Figure 2 depicts the sub-micro level divisions of the study area in the hyper arid zone. It shows the frame of absolute geographical location of the study area with reference to latitude and longitude. The locational extent of hyper arid zone covers the latitudinal extent from 26° 49° 24° N to 28° 19° 32° N and the longitudinal extent ranges from 69° 31° 25° E to 72° 12° 55° E.

The figure shows a distributional location of 175 villages comprising parts of the study area.

Out of these only 10 villages are uninhabited. The administrative profile of hyper-arid zone consists of 175 villages encompassing over a geographical extent of 16,369 sq. km. The total population of these villages has been computed as 99,837 persons in census 2011. The average population density of the study area is 6 persons per sq. km. The area covers parts of Jaisalmer and Pokaran tehsils in Jaisalmer districts and parts of Kolayat tehsil in Bikaner district.

Out of 175 villages, Jaisalmer tehsil comprises 102 villages. It obviously covers the largest extent of 11,822 sq. km. in the hyper-arid zone. It covers 72 per cent of the total area. Pokaran tehsil spreads over 43 villages in the study area. It covers an extent of 2,511 sq. km. with 15.4 per cent of the total area. Kolayat tehsil comprises 20 villages spreading over 2,034 sq. km. It covers 12.4 per cent of the total area.

Spatial variation of percentage area under active sand dunes

The percentage area under active sand dunes is one of the crucial indicators of desertification intensity. Figure 3 depicts the spatial variation of recent extent of active sand dunes in the year 2014. Areas of active sand dunes indicate the extreme desertification intensity because active sand dunes are completely devoid of vegetation. The village wise occurrence of active sand dunes varies from 1 per cent to 100 per cent of the village area.

The very high occurrence of active sand dunes has a range of 80.21 - 100 per cent of the

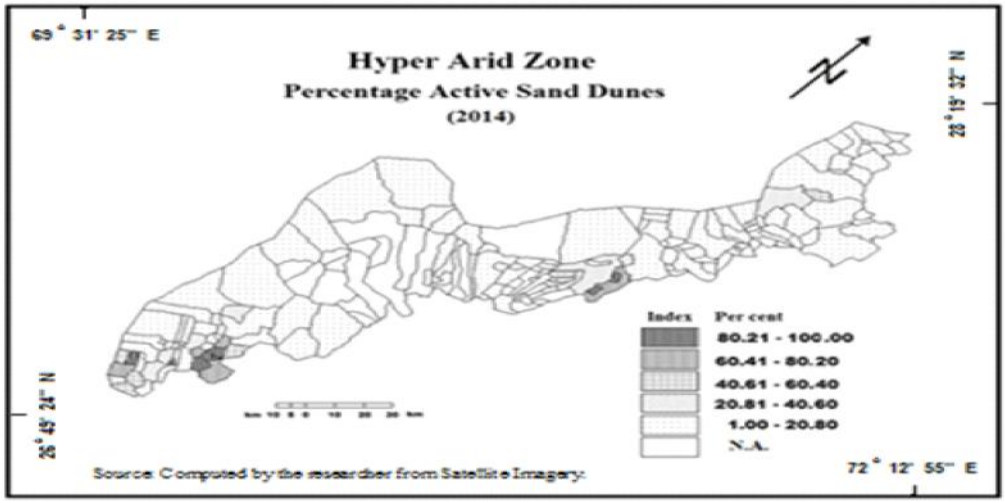


Fig. 3

village area. There are 8 villages in this percentage range. Village Muradenwala in Jaisalmer has 85 per cent of its area under active sand dunes. Phoolsar has 91 per cent. Rampura 93 per cent. Bandri 93 per cent. Shekhar 94 per cent. Mehrana 95 per cent. Bhinda Deslonwala 95 per cent. Village Bhinda Khara 100 per cent area under active sand dunes. It is crucial to note that all the villages under very high percentage of active sand dunes were found in Jaisalmer tehsil. This indicates a very high desertification intensity and very low sustainability in Jaisalmer. These villages cover 175.15 sq. km., representing 1.07 per cent of the total area.

The very low extent of active sand dunes has a range of 1.00-20.80 per cent of the village area. There are 86 villages in this per cent range.

These villages cover a total area of 10,480.74 sq. km. Which represents 64.027 per cent of the total hyper arid zone. A large number of 57 villages did not show the area under active sand dunes. They covered 3,947.47 sq. km. with 24.115 per cent of the total study area.

Spatial variation of percentage canal command irrigated area

The percentage canal command irrigated area is a measure of lands available to intensive agriculture and therefore, prone to accentuation of desertification. Figure 4 illustrates the spatial variation in the irrigated canal command area in the hyper arid lands in the year 2014. irrigated canal command area varies from 2 per cent to 95 per cent in different villages. The lower percentage is because the secondary and tertiary distributaries have been rendered obsolete due to meagre water availability and activation of dunes.

The very high occurrence of canal command area has a range of 76.41 - 95.00 per cent. There

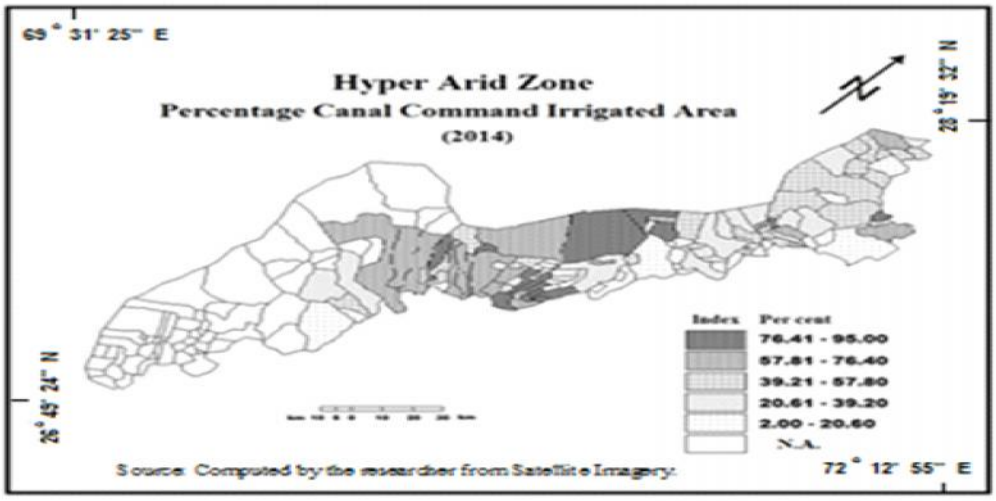


Fig. 4

are 15 villages in this percentage range. Rahimpura in Jaisalmer has 79 per cent of its area under canal irrigation. Raimala in Jaisalmer has 85 per cent irrigated area. Bahla in Jaisalmer has 85 per cent irrigated area. Nehdai in Jaisalmer has 92 per cent irrigated area. Deega in Jaisalmer has 95 per cent irrigated area. Village 21 C.W.B. in Kolayat Tehsil has 95 per cent irrigated area. The very high category 15 villages cover an area of 1,497.52 sq.km. This represents 9.148 per cent of the total hyper arid land.

The very low occurrence of canal command area has a range of 2.00 - 20.60 per cent area in different villages. There are 8 villages in this percentage range. Village Bandha in Jaisalmer has 5 per cent and Shekhon ka Tala in Pokaran has 5 per cent irrigated area. Tilak Nagar in Jaisalmer Hariyar in Pokaran have 10per cent irrigated area. Village Manuj Nagar in Jaisalmer records 11 per cent in Kolayat tehsil Barsalpur has 13 per cent. Ravlotan ka Tala 15 per cent. Beekampur 18 per cent irrigated area. The 26 villages in this category cover 1,498.65 sq. km. represents 9.115 per cent of the total area. There are 67 villages which have no irrigation facility. These villages comprise an area of 6,279.19 sq. km. comprise 38.36 per cent of the total study area.

The water-logging of other areas because

of excessive irrigation and eventually rendered saline and alkaline, is another major problem. The Ministry of Water Resources shows total area waterlogged, saline and alkaline, as 6 million ha. Considering the fact that surface irrigation projects have only irrigated 38 million ha so far, this is a considerable loss of cultivated area. (Vaidyanathan, 1994 and MoRD, 2006)

Spatial variation of percentage double cropped area to net irrigated area

The double cropped area is cultivated more than once. The double cropped areas are vulnerable to accentuation of desertification. This is because the soils are regularly stripped of their vegetative cover and they are prone to disaggregation. Figure 5 portrays the spatial variation in the double cropped area to net irrigated area in the hyper arid lands in the year 2014. Double-cropped area spatially varies from 1 per cent to 95 per cent in different villages.

The very high occurrence of double cropped area has a range of 76.21 - 95.00 per cent area in different villages. There are 13 villages in this percentage range. Five prominent villages have been selected for double-cropped area analysis. The village Shastri Nagar in Jaisalmer has 77 per cent. Raimala 85 per cent. Nehdai 92 per cent. Deega 95 per cent. The 13 villages in very high percentage category have an area 1,447.28 sq.km. covers that 8.841 per cent of the total area.

The very low occurrence of double-cropped area has a range of 1.00-19.80 per cent area in different villages. Village Kakab 5 per cent. Bandha 5 per cent. Drablapar 12 per cent. Ramsinghpur have 12 per cent each double-cropped area. Brahm Nagar 19 per cent. All the villages in this category have an area of 1,497.94 sq.km. Which represent 9.152 per cent of the total area. As many as 76 villages did not show any double cropped area. These are most vulnerable to desertification and cover 6,429.08 sq.km. that comprise 39.275 per cent of the total study area.

Spatial variation of cumulative desertification vulnerability levels

Cumulative desertification vulnerability is an important measure of desertification vulnerability as well as intensity. The land cover indicators used for this exercise were the spatial variation in the percentage occurrence of active sand dunes. The land use indicators for ascertaining

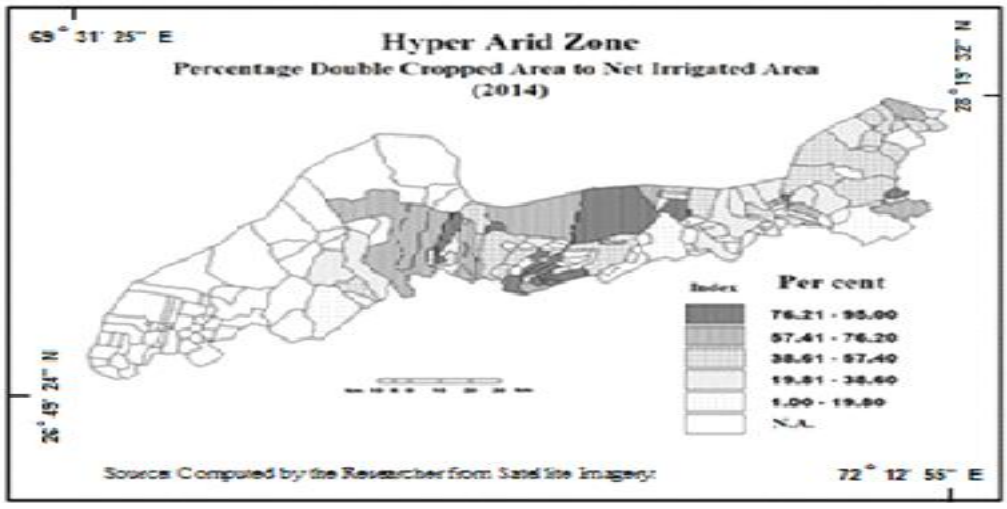


Fig. 5

the desertification intensity were percentage variation in the canal command irrigated area and the extent of double-cropped area. Figure 6 depicts the levels of cumulative desertification vulnerability in the hyper arid zone in the year 2014. The village wise cumulative desertification vulnerability estimates in the hyper arid zone varied from 16 per cent to 100 per cent in different villages.

The very high incidence of desertification intensity has a range of 82 to 100 per cent in different villages. There are 23 villages in this percentage range. Out of these, 6 prominent villages have been selected for the analysis of desertification intensity. Village Birma in Jaisalmer tehsil has 82 per cent cumulative desertification intensity. Shahra in Jaisalmer has 84 per cent. Shekhar 94 per cent and village Khuifatoonjanwali 95 per cent desertification intensity. Village 21 C.W.B. in Kolayat tehsil has 95 per cent desertification intensity while Sampat Nagar (Jaisalmer) has 97 per cent desertification intensity.

The very low percentage occurrence of desertification intensity has a range of 16 - 20 per cent in different villages. There are 40 villages in this percentage range. Out of these 40 villages, 7 prominent villages have been selected for the analysis of desertification intensity. Village Devawala Gaon in Pokaran has 16 per cent desertification intensity, Sadrau in Jaisalmer has 17 per cent. Shekhon ka Tala and intensify. Tawari Nagar and Mirhura each in Pokaran have 17 per cent desertification Rampura in Pokvan and Chakrau in Jaisalmer have 19 per cent desertifieation intensity each. These 40 villages cover an area of 3,666.13 sq.km. They represent 22.396 per cent of the total hyper arid zone.

Indira Gandhi canal and environmental degradation

Cover for agricultural expansion, several areas of second order distributaries and many areas of third order distributaries have suffered the reactivation of wind erosion and deposition in the inter-dunal plains along the Indo-Pak international border. One can visualize even worse water scarcity and environmental vulnerability up to the fourth order drains leading to the immediate fields. Many agricultural fields have been abandoned. The farmer's fortunes hung in

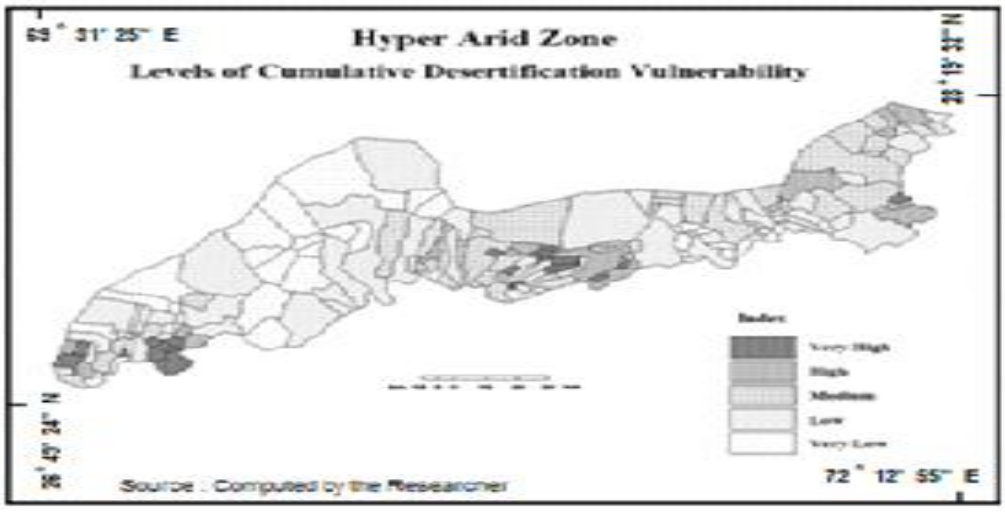


Fig. 6

deprivation and the fate of the environment in jeopardy. This indicates that much of the canal water is drawn by the dominant, commercial farmers of multiple cropping along the first order distributaries. This is further leading to micro-level regional imbalance and social inequality in the inherently marginal lands.

Conclusion

The present study analyses micro level environmental repercussions of canal irrigation in the hyper arid region of Indian Desert. The choking of secondary and tertiary distributaries of the Indira Gandhi Canal is a major problem in the area. The hyper arid lands which were sustainable to livestock rearing have been converted into risky crop husbandry system. There is decreasing canal water availability in the secondary and tertiary distributaries as one moves away from the main canal. Hence, there is an apparent evidence of Distance-Decay in canal water availability. There are evidences of the distributaries being worn down and left redundant due to local area mismanagement. In the absence of sustained water supply the distributaries at many places are prone to sand dune encroachment, silting and suffocation. There are evidences where farmers are abandoning the canal irrigation due to erratic and inadequate water supply. Alternatively, the farmers are resorting to tank irrigation in lieu of canal irrigation in the Indira Gandhi Canal Command Area. Thus, the entire Indira Gandhi Canal Project appears much bigger than the Satluj and Beas rivers can afford to sustain it. Inadequate and erratic canal irrigation has shown signs of degeneration in the hyper arid environment. There is diminishing sustainability of canal irrigation in the hyper arid lands. The ecologically unsustainable canal irrigation coupled with faulty agricultural practices has further degenerated the environment in the inherently fragile desert ecosystem.

References

1. MoRD, 2006, From *Hariyali* to *Neeranchal*: *Report of the Technical Committee on Watershed Programmes in India*, Department of Land Resources, Ministry of Rural Development, Government of India, New Delhi.
2. Phansalkar, S. and Verma, S., 2005, *Mainstreaming the Margins: Water-centric Livelihood Strategies for Revitalizing Tribal Agriculture in Central India, Angus and Grapher*, New Delhi.
3. UN, 2005, Ecosystems and Human Well Being, *Desertification Synthesis* - A Report of Millennium Ecosystem Assessment, Summary for Decision Makers, pp. 1-4.
4. Vaidyanathan, A., 1994, Food, *Agriculture and Water: Second India Revisited*, Institute of Development Studies, Madras.

●●●

NGJI, An International Refereed Journal
(NGSI-BHU, ISSN: 0027-9374/2017/1672)
Vol. 64, No. 3-4, Sept.-December, 2018

Demographic Trends and Transition in Odisha: Emerging Patterns and Implications

Sibabrata Das[1]

Abstract

The Indian state of Odisha has seen remarkable demographic changes towards the end of the 20th century and the last one and a half decade of 21st century. During the same period, the state has also experienced socio economic transformations of varying degree. Demographic situation in Odisha was characterised by high birth rate and death rate in 1971. As per the National Family Health Survey (NFHS 4, 2015-16), Odisha has achieved replacement level of fertility. On the contrary, the mortality in the early years of childhood remains substantially high in spite of a declining trend. The demographic history of Odisha throws a number of surprises, one being the situation of high level of childhood mortality and low level of fertility. A perfect portrayal of demographic transition requires an investigation of the impact of demographic changes on socio-economic transformations and vice-versa. This paper examines the trends and regional heterogeneities in demographic scenario in the state by using the data from the Census of India, the Sample Registration System (SRS) and the National Family Health Surveys (NFHS).

Keywords: *demographic transition, fertility, mortality, age structure, population growth*

Introduction

Demographic history demonstrates that countries, particularly of Western Europe and North America moved from a regime of high mortality and high fertility to a regime of low mortality and low fertility. This shift has been conceptualised as 'demographic transition' which is be defined as the process of secular shift in fertility and mortality from high and fluctuating levels towards a presumed low and relatively stable levels. It was presumed that rest of the countries would follow a similar kind of shift in demographic situation. India, the second populous country in the world with a population size of 1.3 billion has experienced a demographic transition too. With Crude Death Rate (CDR) and Crude Birth Rate (CBR) above 40 during the early years of 20th century, India has seen a dramatic decline in these two vital events. According to latest figures of the Sample Registration System (SRS), CBR and CDR in India were 20.4 and 6.4 respectively in 2016 (Registrar General of India, 2016). Overall demo-

1. Department of Applied Geography, School of Regional Studies and Earth Sciences, Ravenshaw University, Cuttack. Email: sibabrata2007@gmail.com

graphic trends reveal that India is transitioning from late expanding to low stationary stage of demographic transition (Bhat and Rajan, 1997; Dyson, 1997; Guilmoto and Rajan, 2013; Visaria, 2011; Kulkarni, 2011). Given the demographic diversity of the country, it is not surprising to find different states of the country at different stage of demographic transition (Bhat and Rajan, 1990; Krishnana, 1976). It is widely known that the crux of India's population problem lies in the north-central India states such as Bihar (including Jharkhand), Madhya Pradesh (including Chhattisgarh), Rajasthan and Uttar Pradesh (including Uttarakhand). Prof. Ashish Bose had coined the acronym 'BIMARU' (in Hindi bimaru means sick) formed from the first letters of the names of these states, lagging behind in the demographic transition with poor demographic and health indicators. Because of higher Infant Mortality Rate in Odisha, 'O' (for Odisha) was added to 'BIMARU' later on culminating in the acronym 'BIMARUO'. Owing to the derogatory meaning of the term 'BIMARU', officially this group of states has been known as Empowered Action Group (EAG) States. Currently, there are eight (Bihar, Chhattisgarh, Jharkhand, Madhya Pradesh, Odisha, Rajasthan, Uttaranchal and Uttar Pradesh) EAG states in India.

What has happened to the eastern Indian state of 'Odisha' with a population size of 41.9 million? Odisha has attracted the attention of population scientists for a long time now, the reason being it has achieved a lower level of fertility in the absence of similar achievement in mortality and the general socioeconomic conditions. The impressive performance of Odisha state in the fertility front has received worldwide attention and admiration. The interest was obviously generated from the fact that in terms of per capita income and industrial output Odisha ranks among the poorest states in India. In 2011-12, the percentage of people Below Poverty Line (BPL) was 32.59 % (Government of India, 2013). Many demographers call this situation as demographic dilemma. This paper attempts to chat out the recent demographic history of Odisha by a careful scrutiny of evidence presented by various data sources and identify the key the demographic concerns highlighting their future socio-economic implications.

Database and methodology

This paper is based on the data from the Census of India, the Sample Registration System (SRS) and the National Family Health Survey (NFHS). Two rounds of National Family Health Surveys were conducted in 1990's; NFHS I was conducted in 1992-93 and NFHS 2 was conducted in1998-99. The third and fourth rounds of NFHS were conducted in 2005-06 and 2015-16 respectively. This source of data has been utilised to look into the change in fertility and mortality indicators in the recent past. However, the Sample Registration of India provides fertility and mortality indicators from the early 1970s. For the period 1950-60, estimates of birth rate and death rate from report on vital statistics and fertility survey, published as part of census of India, 1961 have been used. Analysis of population growth and age structure is based on census of India data. Different demographic indicators such as Crude Birth Rate (CBR), Total Fertility Rate (TFR), Total Wanted Fertility Rate (TWFR), Crude Death Rate (CDR), Infant Mortality Rate (IMR), Under Five Mortality Rate (UFMR), Maternal Mortality Rate and Life Expectancy are taken into consideration to portray the demographic changes. MsExcel has been used to analyse data and preparing diagrams while maps have been prepared through ArcGIS software. The definition and measurement of indicators are as follows:

The Crude birth rate (CBR) is the number of live

births per 1000 mid-year population in a given geographical area during a given year.

The total fertility ate (TFR) The number of children who would be born per woman if she were to pass through the childbearing years bearing children according to a current schedule of age-specific fertility rates.

The crude death rate (CDR) is the total number of deaths per 1000 mid-year population in a given geographical area during a given year.

The infant mortality rate (IMR) is the number of deaths of infants under one year old per 1000 live births in a given year.

The maternal mortality rate (MMR) is the annual number of female deaths per one lakh live births from any cause related to or aggravated by pregnancy or its management.

Life expectancy at birth is the average number of years that a newly born baby is expected to survive if current mortality rates continue to apply.

The dependency ratio is a measure showing the ratio of the number of dependents aged zero to 14 and over the age of 65 to the total population aged 15 to 59.

Locating Odisha in the demographic maps of India

Table 1 provides an overview of Odisha's performance in terms of socio-demographic and health indicators in national context. As per the 2011 census, the population of Odisha is 41.9 million. It experienced a decadal growth rate of 13.97 during JJ2001-2011 compared to 17.6 percent at the all India level. In fact, the state has achieved replacement level of fertility; the TFR in Odisha was 2.0 in 2016 as per the Sample Registration System (SRS). The latest round of the National Family Health Survey (NFHS-4, 2015-16) recorded a TFR of 2.1 in Odisha. On the other hand, mortality during early childhood period is substantially high. Even so far as female literacy rate goes the national average rate is higher than that of Odisha. The infant mortality rate as well as antenatal check up in Odisha had an edge over India as well. Even so far as female literacy rate goes the national average rate is higher than that of Odisha.

Table 1: Socio-economic, Demographic and Health Indicators in Odisha and India

Indicators	**Odisha**	**India**
Population (million)*	41.9	1210.2
Share of Population (%) *	3	--
Percent of Population in ages 0-6 population	12	13.1
Child sex ratio(female per thousand male in 0-6 age group)*	934	914
Sex ratio*	978	940
Percentage of People Living Below Poverty Line (BPL)	32.	21.9
Level Urbanisation (%)*	17	27.8
Area (sq. km)*	155,707	3,287,240
Population density (ersons per square km)*	269	382
Scheduled Caste population(million) *	7.2	201.3
Scheduled Tribe population (million) *	9.6	104.2
Proportion of SC population (%)*	16.5	8.2
Proportion of ST population (%) *	22.1	16.2
Literacy rate (%) *	73.45	74.4

Female literacy rate (in %) *	64.4	74.0
Total fertility rate**	2.05	2.18
Crude Birth Rate (CBR) ****	20.5	20.4
Crude Death Rate (CDR) ****	7.8	6.4
Infant Mortality Rate**	39. 6	40.7
Under Five Mortality Rate**	48.1	130
Maternal Mortality Ratio (MMR) Per 100,000 live births+	180	130
Underweight (children of age below five years)**	34.4	42.5
Stunting (children of age below five years)**	34.1	48.0
Wasting (children of age below five years)**	20.4	19.8
% of women with full Antenatal Coverage**	94.0	84.0

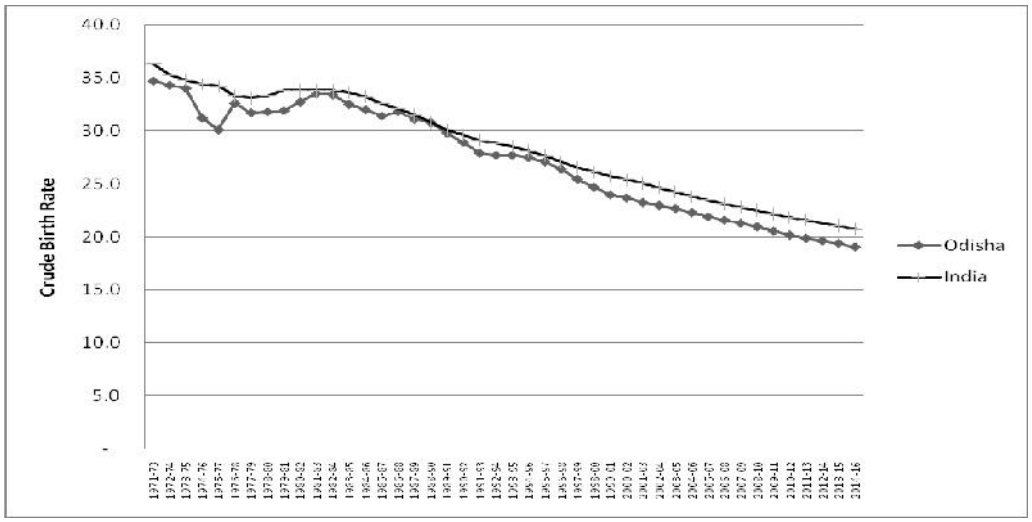
Sources: * Census, 2011: India, Registrar General (2011), ** NFHS-4: International Institute of Population Sciences and ICF (2017), *** NSSO, 2011-12: Government of India (2013), **** SRS, 2016: India, Registrar General (2016) and + SRS, 2014-16: India, Registrar General (2018)

Fertility decline over time

The CBR declined significantly from 34.6 in 1971 to 18.6 in 2016 in Odisha. Similarly, the TFR declined from 4.7 in 1971 to 2.0 in 2016. Compared to the Odisha's figure, national average for CBR declined from 36.9 in 1971 to 20.4 in 2016, and the TFR declined from 5.2 in 1971 to 2.3 in 2016. If we compare the trend line of both CBR and TFR for India as whole with Odisha, it can be observed that the pace of decline in fertility rate in Odisha has been slightly slower than the average decline in the country However, the fertility rate has been lower in Odisha than in India from 1990 onward (fig 1 and 2).

If one looks at the data on the CBR and TFR in Odisha over the last five and half a de-

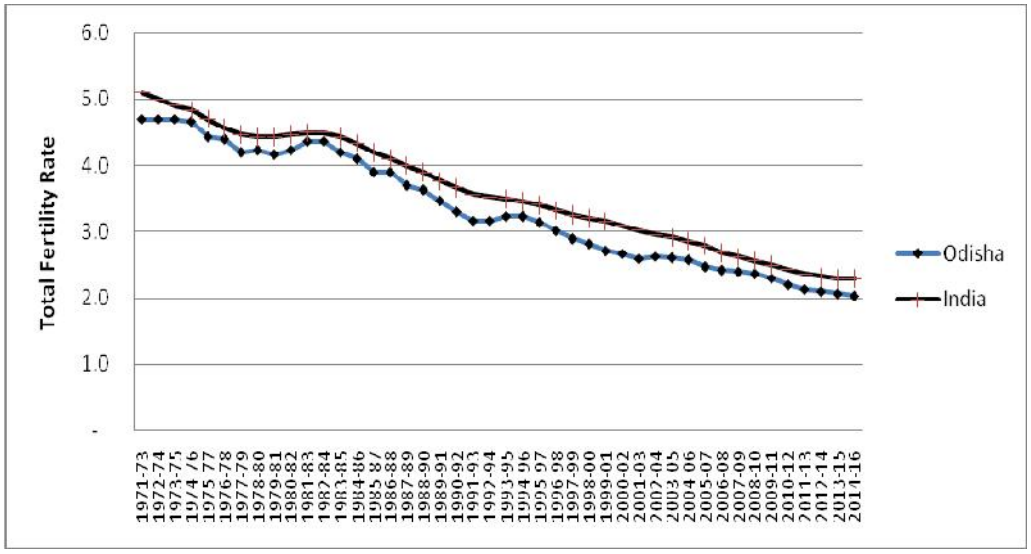
Fig 1: Crude Birth Rate in Odisha as Compared to National Figure, 1971-2016 (Based on Three Year Moving Average



Source: Based on SRS data

cades one can find some significant ups and downs, particularly in the 1970's, 80's and 90's. Even when one takes three-year moving averages to smooth annual fluctuations, one finds similar fluctuations in the 1970's and 80'sFrom the three years moving average of CBR and TFR for the state of Odisha and the country as a whole, it is observed that national figures for rural and urban are higher than that of Odisha. Though the state of Odisha has achieved the replacement level of fertility (TFR 2.1) in 2013, the country as whole has not achieved yet, indicating the heterogeneities in fertility level across states. Note that as per the SRS data, TFR in Odisha was 2.0 while the national figure stood at 2.3 (See appendix 1 and 2 for both annual and three-year moving average data).

Fig 2: Total Fertility Rate in Odisha as Compared to National Figure, 1971-2016 (Based on Three Year Moving Average



Source: Based on SRS data

Table 2: Trend in Fertility Rate in Odisha for the five-year period preceding the Survey: Evidences from NFHS Surveys

NFHS Rounds	CBR			TFR		
	Total	Rural	Urban	Total	Rural	Urban
NFHS-1 (1992-93)	26.50	27.00	23.90	2.92	3.00	2.53
NFHS-2 (1998-99)	24.30	22.40	20.10	2.46	2.50	2.19
NFHS-3 (2005-06)	22.10	23.00	17.70	2.37	2.48	1.89
NFHS 4 (2015-16)	18.10	18.70	15.60	2.05	2.12	1.73

Source: IIPS and ICF, 'National Family Health Surveys 4, Orissa'. 2015-16

All the four rounds of the National Family Health Survey (NFHS 1 to 4) also reveal a declining trend of CBR and TFR in Odisha. During the period between first and second survey

(1992-93 and 1998-99), CBR declined by 2.2 points and TFR declined by 0.5 points. CBR and TFR reduced by 2.2 points and 1 point in Odisha during the second inter-survey period (during 1998-99 to 2005-06). Further, the period between 2005-06 and 2015-16 witnessed decline of both CBR and TFR by 3 points and 0.3 points respectively. It is clear that Odisha was close to the replacement level of fertility in the first part of the first decade of the current century. As SRS data reveal the state achieved the replacement level in 2013. Further, the TFR figure for Odisha has fallen below replacement level in 2015-16.

Table 3: Total Fertility Rate by Background Characteristics

Background Characteristics	Total Fertility Rate	Total Wanted Fertility Rate
Residence		
Urban	1.73	1.50
Rural	2.12	1.72
Schooling of the Mother		
No Schooling	2.66	2.07
< 5 Years Complete	2.42	1.97
5-9 years complete	2.03	1.74
10-11 years complete	1.85	1.62
12 years or more complete	1.60	1.48
Religion		
Hindu	2.04	1.68
Muslim	2.00	1.61
Christian	2.38	1.80
Caste/Tribe		
Scheduled Caste	2.13	1.62
Scheduled Tribe	2.46	1.91
Other Backward Class	1.87	1.62
Other	1.81	1.58
Don't Know	2.16	1.81
Total	2.05	1.69

Note: Total Fertility Rate for the three years preceding the survey (NFHS 4, 2015-16)

Source: IIPS and ICF, 'National Family Health Surveys 4, Orissa'. 2015-16

The TFR in urban areas is well below replacement level and fertility is at replacement level even in rural areas (2.1 children per women). Differentials in fertility by schooling of mother and caste/tribe are wide. The gradient is clear too; higher the years of schooling lower the fertility. Women with no schooling have 2.7 children while the figure for the women with 12 or more years of schooling is 1.1. Among the social groups, the TFR figure is highest among Scheduled Tribe (ST) communities, followed by Scheduled Caste (SC), Other Backward Classes and Other castes.

Table 3 also indicates that Total Wanted Fertility Rate (TWFR) is lower as compared to the TFR in Odisha irrespective of socioeconomic backgrounds. The TWFR in Odisha is 1.69 which is well below 2.1. Obstacles to use contraceptives and social pressures to have more children are generally cited as the reasons for

the gap between TFR and TWFR. Percentage of currently married women age 15-49 with unmet need of family planning in Odisha is 13. 6 % (IIPS and ICF, 2017). The figure substantiates the hypothesis concerning the influence of obstacles to contraceptive use on the lower TWFR than TFR. Of course, no one can deny the social pressures from the elders in the family on reproductive choice of the couples. Generational change coupled with increase contraceptive (particularly modern) prevalence rate would certainly bring TFR well below the replacement level.

Trends in mortality and life expectancy

Crude death rate (CDR)

In 1970s the Crude Death Rate (CDR) figures in Odisha had fluctuated around 14 to 20 with the highest figure (20) recorded in 1972. There has been a secular trend in the decline of CDR since mid 1980s. Towards the end of the twentieth century, the CDR figure was close to 10 and it has reached 7.8 in 2016. The national figure for CDR stood at 6.4 in 2016. During the period between 1971 and 2016, the national figure continues to be lower than that of Odisha (figure 3).

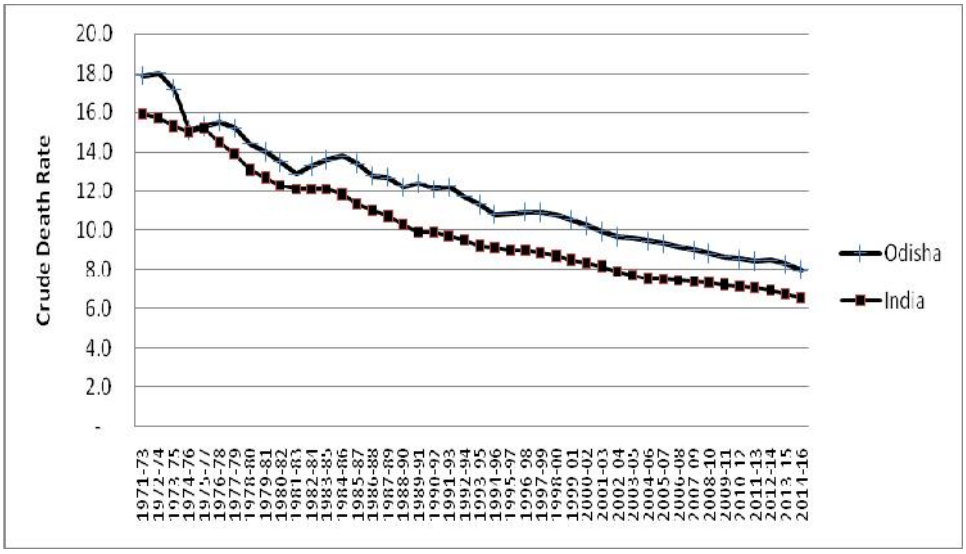


Fig 3: Crude Death Rate in Odisha as Compared to National Figure, 1971-2016 (Based on Three Year Moving Average

Source: Based on SRS data

Infant mortality rate

Infant Mortality Rate (IMR) data of Odisha prior to independence are scarce. However, data from annual reports of public health commissioner with the Government of India for the period 1940-44, do give an idea about over all Infant mortality situations in the state (Table 4). If the source is to be believed, average IMR of rural Odisha during 1937-41 was 209.3 compared to 172.5 in urban Odisha. The table 4 shows that IMR in 1943 and 1944 rose significantly from the figure of 1942. This rise in infant death can be attributed to the occurrence

of famine during 1943-44. Figures from 1944 to 1946 show a gradual decline in both for rural and urban Odisha. In 1946, the recorded IMR figures for rural and urban Odisha were 172.6 and 144.9 respectively. It can be noticed that during the period 1937-46, IMR in urban Odisha was comparatively lower than that of rural Odisha. While comparing these 1946 figures with 1971 estimates of SRS (129), it can be observed that there had been decline in IMR during this time span.

Table 4: Infant mortality rate (IMR) per 1000 live births in Orissa during 1937-46

Place of Residence	Average	1937-41	1942	1943	1944	1945	1946	1971*
Rural	209.3	191.3	203.1	209.4	178.4	172.2	131	
Urban	172.5	167.2	187.6	172.6	168.2	144.9	84	

Source: Government of India (1947), Statistical Appendices to Annual Reports of Public Health Commissioner with the Government of India for the Period 1940-44, Delhi: Government Press (cited in Maharatna, Arup.1996. The Demography of Famines, Oxford University Press, Delhi, page no. 226)

* Sample Registration System (SRS)

Infant mortality rate has declined significantly in India from 129 in 1971 to 34 in the year 2016. Compared to this national average, Odisha's IMR declined from 127 in 1971 to 44 in 2016. In 1971, infant mortality rate in Odisha was nearly same as in India (129 for India and 127 for Odisha), but surprisingly infant mortality rate in Odisha is much higher than that of India in 2016. So it is quite visible that the pace of decline is much lower in Odisha compared to the national average. This trend line for Odisha is compared with the trend for national average for the same period. Figure 4 shows the decline in Odisha's IMR for the period from 1981 to

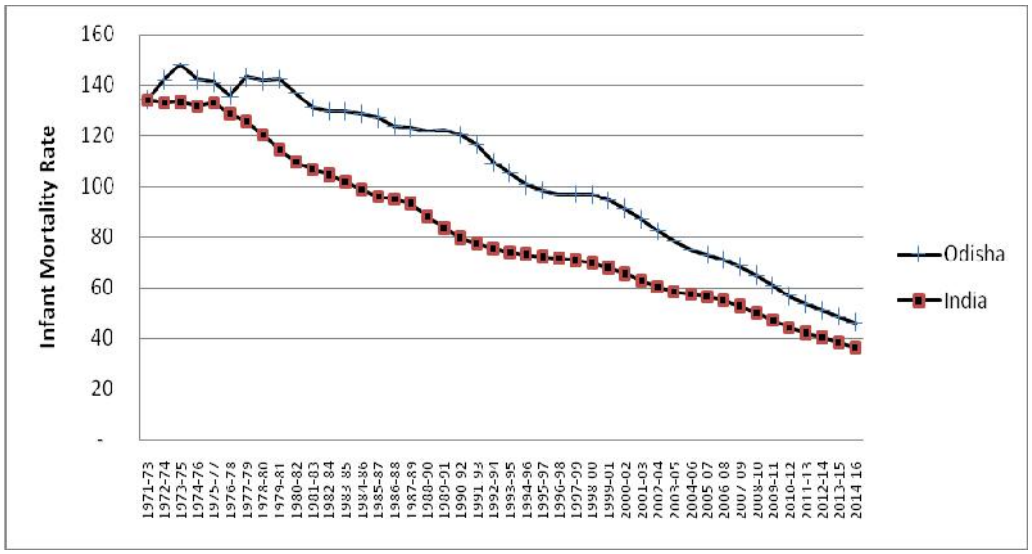


Fig 4: Infant Mortality Rate in Odisha as Compared to National Figure, 1971-2016 (Based on Three Year Moving Average

Source: Based on SRS data

2016, the last year for which SRS data have been published. It indicates that the decline in infant mortality in Odisha has been slightly slower than the average decline in the country. If one looks at the data on the IMR in Odisha over the last four decades, one deciphers some significant up-and-down movements particularly in the 1970's and 80's. Even when one takes three-year moving averages to smooth annual fluctuations, one finds similar fluctuations only in 70's. The rate was 134 in 1972, climbed to its peak at 148 in 1974, then there was a fall in this rate until around 1977, followed by a small rise and during 78-80 the figure fluctuated between 143 and 142. Since then it has started falling till 2016. The general pattern of movement in the IMR in India as a whole is quite different, as decline in IMR has been smoother during the last four and half a decades. In contrast, annual data for Odisha shows fluctuations in 1970's (see appendix for annual and three year moving average data).

Table 5: Annual Rate of Change in Infant Mortality Rate in India and Orissa

Country/state	1971-81	1981-91	1991-2001	2001-2011	2011-2016
Odisha	0.62	-0.81	-2.66	-3.73	-4.56
India	-1.47	-2.72	-1.75	-3.33	-4.54

Source: Calculated from SRS Annual Estimates

The rates of decline in IMR in Odisha in 1970s and 1980s were substantially lower than that of national average. In fact, IMR increased during 1971-81 (annual rate of change was 0.62). A steady but slow decline occurred during the 1980s in Odisha and even faster rate of decline has been noticed in 1990's and in the first decade of the twenty first century compared to the previous two decades (Table 5). The rate of annul rate decline after 1990 in Odisha was also quite higher than the figure for India. One could argue that the present higher level of Infant Mortality Rate in Odisha compared to the national average can be attributed to the slower decline in 1970s and 1980s (Das, 2011).

Table 6: Trend in Infant Mortality Rate in Orissa and India for the five-year Period preceding the Survey: Evidences from NFHS Surveys

Survey Year	IMR Orissa	UFMR India	Orissa	India
NFHS-1(1992-93)	112	79	131.0	109.3
NFHS-2(1998-99)	81	68	104.4	94.9
NFHS-3(2005-06)	65	57	90. 6	74.3
NFHS-4 (2015-16)	40.1	28.5	48.1	34.4

Source: IIPS and ICF, 'National Family Health Surveys 4, Orissa'. 2015-16

As per NFHS-4 estimates IMR was 40 in Odisha which is higher than the national figure (28.5) in 2015-16. During NFHS 1 and NFHS 4, the rate of decline in IMR in Odisha has been higher as compared to the whole country (table-6).

Under five Mortality

All the rounds of the National Family Health Survey also provide an overview of trend of U5MR in Odisha over the last two and half a decades (Table 6). The under-five mortality rate has declined from 136.9 deaths per 1000 live

births during 1992-93 to 48.1 in 2015-16. Over the last one decade (during NFHS-3 to NFHS-4), the UFMR has declined to the tune of around 42 points; it declined by around 40 points during NFHS 1 (1992-93) and NFHS 3 (2015-16). Though UFMR has declined at accelerated rate in Odisha, it remains substantially high, higher than the national figure.

Maternal mortality

Maternal Mortality Ratio (MMR) during 2011-13 was 222 in Odisha compared to the national figure of 167 (Table 7). Among EAG states, there is a great deal of diversity in the levels and pace of decline. According to SSR estimates for 2011-13, the MMR figure for Odisha is lower than Uttar Pradesh/Uttarakhand (285) and Rajasthan (244) while Bihar/ Jharkhand (208) and Madhya Pradesh/ Chhattisgarh (221) recorded a lower MMR as compared to Odisha. Though all EAG states have experienced a decline in MMR, the pace of decline in MMR has been slower in Odisha as compared to other EAG states. Note that during 1997-98, MMR in Odisha was lower than the figures for rest EAG states. Baring Assam (300), the MMR in all Non-EAG states is much below the figure of Odisha. For example, the MMR figures for Kerala and Maharashtra are 61 and 68 respectively.

Table 7: Trend in Maternal Mortality Ratio in Orissa as compared to other states

India & Bigger States	Period						
	1997-98	1999-01	2001-03	2004-06	2007-09	2010-12	2011-13
INDIA TOTAL	398	327	301	254	212	178	167
Assam	568	398	490	480	390	328	300
Bihar/Jharkhand	531	400	371	312	261	219	208
Madhya Pradesh/Chhattisgarh	441	407	379	335	269	230	221
Odisha	346	424	358	303	258	235	222
Rajasthan	508	501	445	388	318	255	244
Uttar Pradesh/Uttaranchal	606	539	517	440	359	292	285
EAG AND ASSAM SUBTOTAL	520	461	438	375	308	257	246
Andhra Pradesh	197	220	195	154	134	110	92
Karnataka	245	266	228	213	178	144	133
Kerala	150	149	110	95	81	66	61
Tamil Nadu	131	167	134	111	97	90	79
SOUTH SUBTOTAL	187	206	173	149	127	105	93
Gujarat	46	202	172	160	148	122	112
Haryana	136	176	162	186	153	146	127
Maharashtra	166	169	149	130	104	87	68
Punjab	280	177	178	192	172	155	141
West Bengal	303	218	194	141	145	117	113
Other		276	235	206	160	136	126
OTHER SUBTOTAL	184	229	199	174	149	127	115

Source: India, Registrar General (2013) SRS Compendium.

Life Expectancy

Table 8 and figure 5 shows the trend in life expectancy at birth in Odisha. Life expectancy at birth in Odisha during the period 2010-13 was 65 lower than national average (68) and many states of the country. Apart from Madhya Pradesh (including Chhattisgarh) and Uttar Pradesh, all other EAG states have higher life expectancy than Odisha. However, the life expectancy in Odisha has increased from as low as 46 years during 1970-75 to 65 years during 2010-13, registering a rise of 19 years in the expectancy during the last four and a half decades. Life expectancy has increased both in rural and urban Odisha. Rural-Urban gap in life expectancy was 10 years during 1970-75, decreased to 3 years during 2010-13. Though Female expectancy was below the male expectancy before 1980, the gap in favour of females has been noticed since early 1980s. The latest data show a life expectancy of 65.8 for males and 69.3 for females during 2010-13. A comparison with neighbouring states tells us that life expectancy in Odisha is higher than Madhya Pradesh (including Chhattisgarh) and lower than the states of West Bengal, Andhra Pradesh and Bihar (including Jharkhand) (Table 9). Among the rest of the major states of India, while the figure for Odisha is lower than that of the relatively developed states of India, Rajasthan, Uttar Pradesh and Assam have lower life expectancy as compared to Odisha.

Table 8: Trends in Life Expectancy at Birth, Odisha

Period	ALL			Rural			Urban		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
1970-75	46	46	45	45	46	45	55	55	56
1976-80	49	50	48	49	49	48	58	58	59
1981-85	53	53	53	52	52	52	60	59	61
1986-90	54	55	54	54	54	53	62	61	63
1991-95	57	57	56	56	56	55	64	62	67
1996-00	58	58	59	58	57	58	64	63	64
2001-05	61	60	62	60	59	61	66	65	68
2006-10	63	62	64	62	62	63	67	66	69
2009-13	65	64	66	64	63	65	69	68	70

Source: India, Registrar General (2013) SRS Compendium.

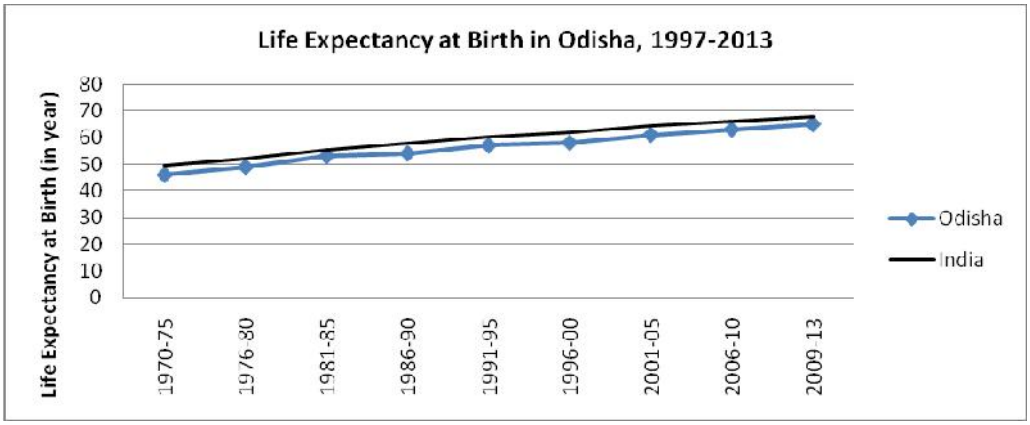


Fig 5: Life Expectancy in Odisha as Compared to National Figure, 1997-2013

Table 9: Trends in Life Expectancy at Birth in Odisha ass compared other states

Year	1970-75	1976-80	1981-85	1986-90	1991-95	1996-00	2001-05	2006-10	2009-13
Odisha	46	49	53	54	57	58	61	63	65
Andhra Pradesh	48.8	53.1	58.4	59.1	61.8	62.7	65	65.8	67.9
Bihar (including									
Jharkhand)								65.8	67.7
Madhya Pradesh									
(Including									
Chhattisgarh)	47.2	49	51.6	53	54.7	57.1	59.7	62.4	63.8
West Bengal			57.4	60.8	62.1	64.3	67.2	69	69.9
Rajasthan	48.4	51.9	53.5	55.2	59.1	62.1	64.5	66.5	67.5
Uttar Pradesh	43	46.2	50	53.4	56.8	59.2	60.8	62.7	63.8
Assam	45.5	51.1	51.9	53.6	55.7	57.4	59.2	61.9	63.3
Maharashtra	53.8	56.3	60.7	62.6	64.8	65.9	68	69.9	71.3
Punjab	57.9	60.5	63.1	65.2	67.2	66.5	68.8	69.3	71.1
All India	49.7	52.3	55.5	57.7	60.3	61.9	64.3	66.1	67.5

Source: India, Registrar General (2013), SRS Compendium 2013

Population growth and changes in age structure

In India, the first regular Census of population started in 1881, which recorded a population of 6.1 lakh and increased to 5.7 in 1991. The first census of the 20th century (the 1901 census) observed a population size of 10.3 lakhs in Odisha. Sinha (1958) by analysing the population growth in Odisha during 1871-1951 observed that 'the unprecedented rise in absolute figures and phenomenally at a faster rate towards the later few decades is striking. The total population has not only become a little less than threefold but has recorded 186.2 percent rise in 1951 over the figures of 1881. The growth when analysed in decades, reveals, loss in total population during 1911-21 in Orissa. Trend in population when viewed against a background of all India figures presents a different picture. The absolute population in India does not indicate a threefold increase but has only recorded 66.1 percent growth in 1951 over the figures of 1881. The trend, when, analysed in decades indicates, that the decades of marked increase have regularly alternated with decades of slight increase and the growth is sporadic. But from 1921 the growth in successive decades is rapid'. The present study uses 1901 as the base year to analyse the growth of population in Odisha. The absolute size of population along with decadal growth rate of population since 1901 is presented in Table 10. As evident from the table 10, negative growth rate of population was recorded during 1911-21. "Besides the global war, the devastating floods, famines and epidemics in different parts of the State brought down the number of people in Orissa as a chain event compared with the previous decadal counting"(Mahapatra, 2004: 35). Epidemics like small pox, cholera and dysentery during this decade were common in Odisha. More importantly, starting from 1917, influenza had spread its tentacles up to the year 1919. It took away a

lot of precious lives putting the rates of morality at a higher level. Besides that ravaging flood of 1917, the drought of 1918 worsened the living conditions of the people to a large extent. Coupled with bad harvest for some years, these vagaries of nature also demanded their share and created a condition of scarcity of foodstuff resulting in high market prices which led to starvation deaths. In absolute terms the 11,378,875 people in Orissa in 1911 was reduced to 11,158,586 in 1921 downsizing by about two lacs and 20 thousand people in 10 years time.

Table 10: Population Growth in Odisha (1901-2011)

Census	Population	Change in Population Size	Decadal Variation (in Percentage)
1901	10,302,917		
1911	11,378,875	1,075,958	10.44
1921	11,158,586	- 220,289	- 1.94
1931	12,491,056	1332,470	11.94
1941	13,767,988	1,276,932	10.22
1951	14,645,946	877,958	6.38
1961	17,548,846	2,902,900	19.82
1971	21,944,615	4,395,769	25.05
1981	26,370,271	4,425,656	20.17
1991	31,569,736	5,289,465	20.06
2001	36,804,660	5,144,924	16.25
2011	41,947,358	5,142,698	13.97

Source: India, Registrar General of India (2011). Census of India 2011

The highest decadal growth rate (25.05 %) was recorded during the decade 1961 - 1971. Since then the growth rate has been declining. During the current decade 2001 - 2011, Odisha has registered a growth rate of 13.97 percent compared to the growth rate of 16.25 percent the decade1991 - 2001. Fig 6 shows the steady decline in natural growth (CBR-CDR) in 1970s and 1980 and the somehow faster rate of decline since 1990s. This has happened due to the higher rate of decline in the CBR as compared to the CDR. During the same period, TFR declined at a higher rate as compared to the earlier period too. Certainly, the population growth pattern clearly corresponds to the rate of decline in natural growth. At the same time, migration as a component of population change has not played a major role in increase in population in Odisha as out-migrants from the state out- numbered in-migrants in the past. Odisha (Das, 2012).

Declining fertility along with improvement in life expectancy in Odisha has changed the population age-structure. Fig 7 and 8 are clearly showing the shrinking base of the pyramid with bulge moving upwards. The broad age group 15-59 generally labelled as working ages has gained by over three points in its share during 2001 to 2011, from 58.4 percent to 61.5 percent. The percentage of population in the young age group (0-14) declined from 33.2 to 28.8 percent, registering a decline by 4.4 points (Table 11). The old ages (60 and above) have also gained but only marginally, from 8.3 to 9.5 percent. Ageing has begun to occur in Odisha. The most conspicuous changes are seen in the shares of the young age groups.

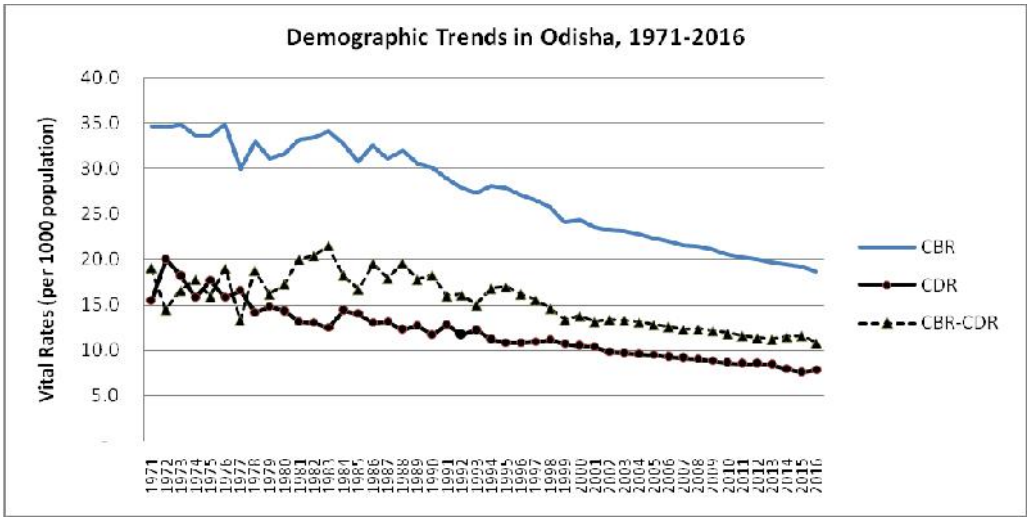


Fig 6: Demographic Trends in Odisha, 1971-2016

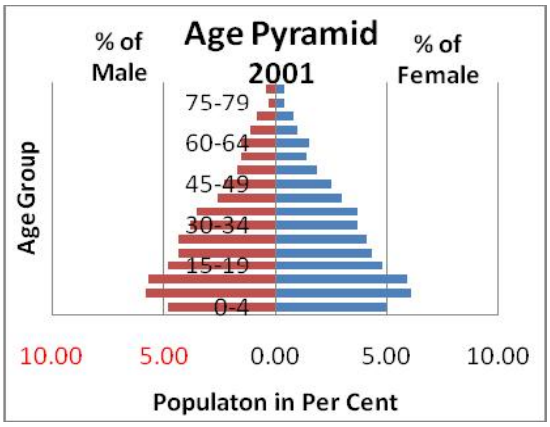


Fig 7: Population Pyramid of Odisha, 2011

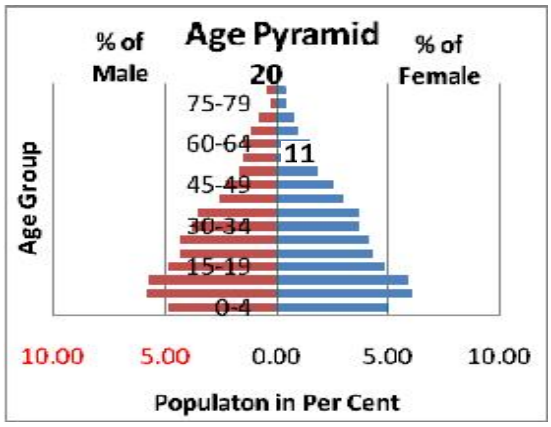


Fig 8: Population Pyramid of Odisha, 2011

Table 11: Percentage Distribution of Population in Different Age Groups in Odisha, 2011

Age group	Odisha		India
	2001	2011	2011
0-14	33.2	28.8	30.76
15-59	58.4	61.5	60.29
60+	8.3	9.5	8.58

Source: Calculated Based on Census 2011 C.D.ROM

Table 12: Trends in Dependency Ratio in Odisha, 2001-2011

Dependency Ratio	Odisha		India
	2001	2011	2011
Child Dependency Ratio	56.8	46.8	51.01
Old Dependency Ratio	14.1	15.5	14.22
Total Dependency Ratio	70.9	62.3	65.23

Source: Calculated Based on Census 2011 C.D.ROM

A positive consequence of the change in the age distribution is that the dependency ratio has fallen, from 70.9 percent to 62.3 percent (Table 12). This is accounted for by the drop in the young age dependency ratio from 56.8 percent to 4.8 percent. On the other hand, old age dependency ratio increased from 14.1 to 15.5 percent. The decreasing share of children age group is certainly a result of recent fertility decline in the state. Clearly, the burden of supporting children has come down as couples now have fewer children than in the past.

Regional variations in transition

The CBR in the four districts viz., Rayagada, Koraput, Nabarangpur and Malkangiri is more than 25 while Jagatsingpur, Puri, Cuttack, Khorda, and Kendrapara have recorded relatively lower CBR. The broad regional pattern shows that the level of CBR is high in the southern parts of Odisha and low level of CBR is recorded in the coastal part and industrially prosperous north-western districts of Odisha. Like CBR, low level of TFR is seen in coastal districts of Odisha where as high rate is seen mainly in the southern districts. Infact, TFR is well below replacement level in four districts, Jagatshingpur, Cuttack, Khorda and Puri. Kendrapara has TFR below replacement too (2.0). Bargarh, Jharsuguda and Sambalpur TFR is 2.1. In two districts (Nabarangpur and Malkangiri) of the state TFR increased between 2001 and 2011. Coefficient of Variation (CV) values indicate a slight increase in the degree of regional variation in fertility during 2001 and 2011. It is to be noted that the CV value for CBR increased from 13.59 in 2001 to 19.45. Similarly CV value for TFR increased from 12.67 in 2001 to 19.10 in 2011

State & Districts	CBR		Decadal	TFR		Decadal	Decadal
	2001	2011	change in percentage in CBR	2001	2011	change in percentage in TFR	Population Growth Rate, 2001-2011
Odisha	23.6	19.6	-16.9	2.8	2.4	-14.2	13.97
Bargarh	20.6	16.8	-18.4	2.5	2.1	-16	9.9
Jharsuguda	21.1	16.9	-19.9	2.6	2.1	-19.2	12.
Sambalpur	21.2	17.7	-16.5	2.6	2.1	-19.2	12.2
Debagarh	25.5	20.5	-19.6	3.1	2.5	-19.3	13.9
Sundergarh	22.8	19.3	-15.3	2.7	2.3	-14.8	13.7
Kendujhar	25.3	23.1	-8.6	3.0	2.8	-6.6	15.4
Mayurbhanj	26.0	21.4	-17.6	3.0	2.7	-10	13.1
Baleshwar	25.2	19.1	-24.2	2.9	2.3	-20.6	14.5

Bhadrak	24.8	18.9	-23.7	2.9	2.3	-20.6	13.0
Kendrapara	21.8	17.0	-22.0	2.6	2.0	-23.0	10. 6
Jagatsingpur	18.8	14.3	-23.9	2.3	1.7	-26.0	7.4
Cuttack	19.6	15.4	-21.4	2.4	1.8	-25	11.9
Jajpur	21.8	18.1	-16.9	2.6	2.2	-15.3	12.4
Dhenkanal	21.8	18.1	-16.9	2.7	2.1	-22.2	11.8
Anugul	23.4	18.5	-20.9	2.9	2.2	-24.1	11. 6
Nayagarh	20.9	17.2	-17.7	2.5	2.1	-16	11.3
Khurdha	20.3	16.2	-20.1	2.4	1.9	-20.8	19.6
Puri	20.2	15.8	-21.7	2.4	1.8	-25	13.0
Ganjam	24.0	18.4	-23.3	2.9	2.2	-24.1	11.4
Gajapati	27.6	24.1	-12.6	3.3	2.9	-12.1	11.0
Kandhamal	30.8	24.7	-19.8	3.6	3.0	-16.6	12.9
Boudh	27.4	22.6	-17.5	3.2	2.8	-12.5	17.8
Subarnapur	22.7	19.2	-15.4	2.8	2.5	-10.7	20.4
Balangir	22.9	21.2	-7.4	2.8	2.7	-3.5	23.3
Nuapada	25.9	23.1	-10.8	3.0	2.9	-3.3	14.3
Kalahandi	26.8	23.0	-14.1	3.2	2.8	-12.5	17.8
Rayagada	28.5	25.1	-11.9	3.3	2.9	-12.1	15.7
Nabarangpur	30.0	28.6	-4.6	3.4	3.5	2.9	18.8
Koraput	27.3	26.2	-4.0	3.1	3.0	-3.2	16.6
Malkangiri	28.8	30.0	4.1	3.3	3.5	6.0	21.5

Source: Guilmoto and Rajan (2002). District Level Estimates of Fertility from India's 2001 Census. Guilmoto and Rajan (2013). Fertility at District Level in India: Lessons from the 2011 census.

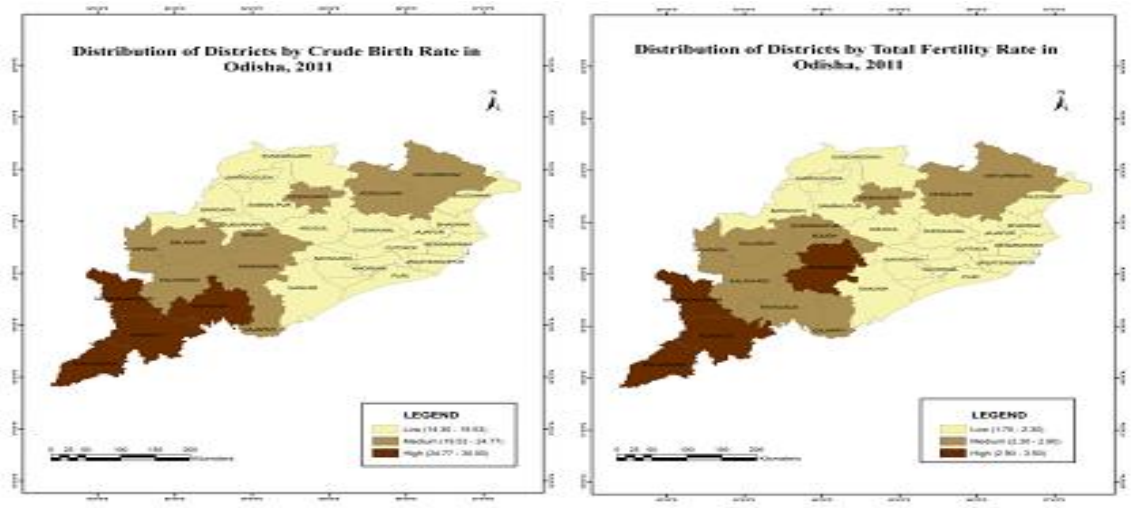


Fig 9: Crude Birth Rate in Odisha, 2011 Fig 10: Total Fertility in Odisha, 2011

Higher rate of decline in CBR is observed in the coastal districts of the state such as Balasore, Jagatsingpur, Bhadrak, Ganjam, Kendrapara, Puri, Cuttack, Angul and Khordha during 2001-2011 while it declined moderately in Kandhamal, Deogarh, Bargarh, Nayagarh. Southern and south-western districts, such as Koraput, Nabarangpur, Balngir, Kendujhar, Nuapada, Rayagada, Gajapati and Kalahandi experienced a relatively lower rate of decline. Malkangiri is the only district where CBR has increased between 2001 and 2011. Similar pattern of change is also observed in case of TFR. Regional patterns in population growth rate correspond to regional pattern of fertility decline.

Conclusions

Odisha's performance in the demographic front amidst poor socio-economic scenario has been impressive. Fertility transition in Odisha has been underway for the past four decades. This transition has covered all regions and sections of the society during the last decade, though to varying degrees. All agricultural prosperous coastal and industrially developed north-western districts have low fertility. Infact, five coastal districts along with three non-coastal districts have already reached low replacement level fertility while the tribal populated southern districts and few northern districts are yet to break the barrier. Though mortality indicators have shown declining trends, the current levels are substantially high. Southern region is lagging behind the coastal and northern regions of Odisha. However, a scenario of low birth rate along with poor economic conditions and high childhood mortality remains a matter of concern. Consequent on the decline in birth rate and death rate, Odisha has experienced continuous decline in population growth in Odisha.

The decreasing share of children population is certainly a result of recent fertility decline in the state. In broad terms, the age distribution has shifted towards middle ages, with fall in the share of the child population and a corresponding rise in the share of adults. Clearly, the burden of supporting children has come down. Ageing has begun to occur in Odisha with the marginal increase in share of old age people in the population. With the state approaching towards a low level fertility and mortality situation, Odisha would definitely be a high performing state in demographic indicators within the context of relatively poor performing social and economic variables. At the same time, the current age structure of Odisha's population with substantially high proportion of population of working age group provides windows of opportunities for economic development. To harness the demographic dividend, the state as well as union government needs to invest generously on health and education.

References

Bhat, P. N. Mari and Rajan, Sebastian I., 1990, Demographic Transition in Kerala Revisited, *Economic and Political Weekly*, 25(35-36): pp. 1957-61.

Bhat, P N. Mari and Rajan, Sebastian I., 1997, Demographic transition since independence; In Zachariah KC, Rajan SI, (eds) *Kerala's Demographic Transition: Determinants and Consequences*, Sage, New Delhi: 33-78.

Behuria, Biswa Ranjan and Das, Sibabrata., 2016, Fertility Variations in Space and Time: What has happened in the Indian State of Odisha? *Eastern Geographer*, 22(1).

Das, Sibabrata., 2012, Spatial Variations in Infant Mortality Rate in Odisha, India: Roles of Socio-economic Factors and Household Conditions, *Asian Profile*, 40(2): pp. 145-163.

Das, Sibabrata., 2012, Spatial Patterns of Urbanisation and Development in Odisha, India; in Singh T et al (eds), *Population, Development and Environment: A Contemporary Debate*, Concept Publisher, New Delhi: pp. 190-207.

Dyson, Tim., 2004, India's population - the future; in Dyson T, Robert C, Visaria L, (eds.) 21st *Century India: Population, Environment and Hu-*

man Development. Oxford University Press, Oxford.

Government of India, 1947), Statistical Appendices to Annual Reports of Public Health Commissioner with the Government of India for the Period 1940-44, Government Press, Delhi.

Government of India., *2013, Press Notes on Poverty Estimates, 2011-12*, Planning Commission, Press Information Bureau, New Delhi.

Guilmoto, Christophe Z and Rajan, Sebastian I., 2013, *Fertility at District Level in India: Lessons from the 2011 census*, Working Papers No. 30, du CEPED, Paris.

Guilmoto, Christophe Z., 2000, The geography of fertility in India (1981-1991)., in Guilmoto, C.Z., and A. Vaguet (eds.), Essays on Population and Space in India, Pondicherry:Institut français de Pondichéry:Ponditery: 37-56.

Guilmoto, Christophe Z and Rajan, Sebastian I., 2002, District Level Estimates of Fertility from India's 2001 Census, *Economic and Political Weekly*, 30(7): pp. 665-672.

Guilmoto, Christophe Z and Rajan, Sebastian I., (eds.). 2005. Fertility Transition in South India. New Delhi: Sage Publications.

India, Registrar General, 2011, Census of India, 2011, Ministry of Home Affairs, New Delhi.

India, Registrar General of India., 2011, Census of India 2001, Provisional Population Totals-Orissa, Paper-2, Volume-1, Ministry of Home Affairs, Directorate of census operation.

India, Registrar General, 2013, *SRS Compendium*, 1971-2013, Government of India, New Delhi.

India, Registrar General. 2016, *Sample Registration System (SRS) Report 2016*, Government of India, New Delhi.

India, Registrar General., 2018, Special Bulletin on Maternal Mortality in India, 2014-16, *Sample Registration System (SRS)*, Government of India, New Delhi.

International Institute for Population Sciences (IIPS) and ICF, 2017, *National Family Health Survey (NFHS-4), 2015-16: India*, IIPS, Mumbai.

International Institute for Population Sciences (IIPS) and ICF, 2017, *National Family Health Survey (NFHS-4), 2015-16: Odisha*, IIPS, Mumbai.

James, KS., 1995, Demographic transition and education in Kerala. *Economic and Political Weekly*, 30(51):pp. 3274-76.

Krishnan, T N., 1976, Demographic Transition in Kerala-Facts and Factors, *Economic and Political Weekly*, 11(31-32-33):pp. 1203-1205.

Kulkarni, Purushottam M., 2011, Towards an explanation of India's fertility transition, Paper presented at the George Simmons Memorial Lecture, 33rd Annual Conference of the IASP, Lucknow, November 11-13, 2011.

Maharatna, Arup., 1996, The Demography of Famines, *Oxford University Press, Delhi*: p. 226.

Sinha, Bichitra, N., 1958, Population Analysis of Odisha, *National Geographical Journal of India*, 4(4): 200-220.

Visaria, L., 2011, Demographic *transition in South India*; Special Series Paper, Population Foundation of India, New Delhi.

Appendix 1: Demographic Indicators in Odisha as Compared to National Figure, 1971-2016 (Annual figures)

	CBR		CDR		Natural Change		IMR		TFR	
	Odisha	India	Odisha	India	Odisha	India	Odisha	India	Odisha	India
1971	34.6	36.9	15.5	14.9	19.1	22.0	127	129	4.7	5.2
1972	34.5	36.6	20.0	16.9	14.5	19.7	131	139	4.6	5.2
1973	34.8	34.6	18.2	15.5	16.6	19.1	145	134	4.8	4.9
1974	33.6	34.5	15.8	14.5	17.8	20.0	150	126	4.7	4.9
1975	33.6	35.2	17.7	15.9	15.9	19.3	149	140	4.6	4.9
1976	34.8	34.4	15.8	15.0	19.0	19.4	127	129	4.7	4.7
1977	29.9	33.0	16.6	14.7	13.3	18.3	147	130	4.0	4.5
1978	32.9	33.3	14.1	14.2	18.8	19.1	133	127	4.5	4.5
1979	31.0	33.1	14.8	12.8	16.2	20.3	149	120	4.1	4.4
1980	31.6	33.3	14.3	12.4	17.3	20.9	143	114	4.1	4.4
1981	33.1	33.9	13.1	12.5	20.0	21.4	135	110	4.3	4.5
1982	33.4	33.8	13.0	11.9	20.4	21.9	132	105	4.3	4.5
1983	34.0	33.7	12.5	11.9	21.5	21.8	126	105	4.5	4.5
1984	32.7	33.9	14.4	12.6	18.3	21.3	131	104	4.3	4.5
1985	30.7	32.9	14.0	11.8	16.7	21.1	132	97	3.8	4.3
1986	32.5	32.6	13.0	11.1	19.5	21.5	123	96	4.2	4.2
1987	31.0	32.2	13.1	10.9	17.9	21.3	126	95	3.7	4.1
1988	31.9	31.5	12.3	11.0	19.6	20.5	122	94	3.8	4.0
1989	30.5	30.6	12.7	10.3	17.8	20.3	121	91	3.6	3.9
1990	30.0	30.2	11.7	9.7	18.3	20.5	122	80	3.5	3.8
1991	28.8	29.5	12.8	9.8	16.0	19.7	124	80	3.3	3.6
1992*	27.8	29.2	11.7	10.1	16.1	19.1	115	79	3.1	3.6
1993*	27.2	28.7	12.2	9.3	15.0	19.4	110	74	3.1	3.5
1994*	28.0	28.7	11.2	9.3	16.8	19.4	103	74	3.3	3.5
1995*	27.8	28.3	10.8	9.0	17.0	19.3	103	74	3.3	3.5
1996*	27.0	27.5	10.8	9.0	16.2	18.5	96	72	3.1	3.4
1997*	26.5	27.2	10.9	8.9	15.6	18.3	96	71	3.0	3.3
1998	25.7	26.5	11.1	9.0	14.6	17.5	98	72	2.9	3.2
1999	24.1	26.0	10.7	8.6	13.4	17.4	97	70	2.7	3.2
2000	24.3	25.8	10.5	8.5	13.8	17.3	95	68	2.8	3.2
2001	23.5	25.4	10.4	8.4	13.1	17.0	91	66	2.6	3.1
2002	23.2	25.0	9.8	8.1	13.4	16.9	87	63	2.6	3.0
2003	23.0	24.8	9.7	8.0	13.3	16.8	83	60	2.6	3.0
2004	22.7	24.1	9.6	7.5	13.1	16.6	77	58	2.7	2.9

2005	22.3	23.8	9.5	7.6	12.8	16.2	75	58	2.6	2.9
2006	21.9	23.5	9.3	7.5	12.6	16.0	73	57	2.5	2.8
2007	21.5	23.1	9.2	7.4	12.4	15.7	71	55	2.4	2.7
2008	21.4	22.8	9.0	7.4	12.3	15.4	69	53	2.4	2.6
2009	21.0	22.5	8.8	7.3	12.2	15.2	65	50	2.4	2.6
2010	20.5	22.1	8.6	7.2	11.9	14.9	61	47	2.3	2.5
2011	20.1	21.8	8.5	7.1	11.6	14.7	57	44	2.2	2.4
2012	19.9	21.6	8.5	7.0	11.4	14.5	53	42	2.1	2.4
2013	19.6	21.4	8.4	7.0	11.3	14.4	51	40	2.1	2.3
2014	19.4	21.0	7.9	6.7	11.5	14.3	49	39	2.1	2.3
2015	19.2	20.8	7.6	6.5	11.6	14.3	46	37	2.0	2.3
2016	18.6	20.4	7.8	6.4	10.8	14.0	44	34	2.0	2.3

* Excludes Jammu & Kashmir due to non-receipt of returns.

Note: 1: Estimates of vital rates at the national level upto 1995 do not include Mizoram as the SRS was not operational in Mizoram till 1995.

2 : Excludes Nagaland (Rural) due to part-receipt of returns from 1995 to 2003.

Source: India, Registrar General, 2013, SRS Compendium, 1971-2013, Government of India, New Delhi.

●●●

NGJI, An International Refereed Journal
(NGSI-BHU, ISSN: 0027-9374/2017/1667)
Vol. 64, No. 3-4, Sept.-December, 2018

Access to Basic Urban Amenities in India

M.B.Singh[1] and Nitin Kumar Mishra[2]

Abstract

An access to basic urban amenities such as housing condition, drinking water, toilet facility, waste-water outlet, electricity and clean fuel etc. are considered important for leading a good and healthy life. About 13 percent of the urban households have no access to electricity, 16 percent have no access to safe drinking water and 27 percent have no access to toilet facility as per 2001 census in India. Indeed this proportion has declined significantly in 2011 but still 7 percent households have no access to electricity, 12 percent have no access to safe drinking water and 17 per cent have no access to toilet facility. About one- fifth of urban households are also not covered by any sewer facility. This study aims to analyse access to basic amenities at state level covering 28 states and 7 Union Territories. The regional disparity in terms of basic amenities closely follows the level of urbanisation. The states with low access to basic urban amenities are also characterised by low level of urbanisation.

Keywords: *urbanization, drinking water, sanitation, waste water outlet and water borne diseases*

Introduction

Urban environment in modern India has come under a constant threat due to increasing pressure on land and the growing population (J.R.A.Grace, 2012). India is characterised by a phenomenal high rate of population growth which is about 1.67 percent per annum against 1.4 percent of the world and 1.0 percent of China. On account of high population growth, 849.47 million people were added during 1951-2011. Akin to this, the tremendous increase from 62.44 million in 1951 to 377 million in 2011 has been recorded in urban population adding around 314.67 million people during last 60 years. Moreover a large proportion of population e.g. 17.30 percent (65.5 million) resides in slums which are unconducive for leading healthy life. The pressure of population cannot be explained without describing the density scenario of the country. In 1951 there were just 117 persons per sq.km living in the country which increased to 382 persons per sq. km in 2011. Against this average combined population density, urban density in 2011 was 11 times higher (4829 persons per square km) and in 17 states/ union territories this fact was found of higher order. Population pressure in metropolitan cities is more aggravating as all the twelve major metropolises pos-

1. Professor and former Head, Department of Geography, Banaras Hindu University, Varanasi.
2. Assistant Professor, Dept. of Geography, Kartic Oraon College, Gumla, Jharkhand.

sess above 10,000 persons per sq. km. urban density and in four biggest metropolises (Mumbai, Kolkata, Chennai and Delhi) it is of much higher magnitude. The urban population is still less than one-third in the country of the total population but the absolute number is so large that economies of urbanization are placing heavier demands on government for the provision of urban public services. For providing insights of this demand, an analysis of housing condition, water supply, source of lighting, sources of fuel, sanitation condition, etc. across various states of India has been made in detail.

Study area

India is a much diverse country enjoying monsoon climate and lies between 8^0 4' to 37^0 6' north latitudes and 68^0 7' to 97^0 25' east longitudes. It commands a total geographical area of 3,287,263 sq.km. In area, it is the seventh largest country of the world. Administratively the country is divided into 29 states and 7 union territories (Fig. 1) with its total population of 1210 million in 2011. Due to non availability of data of Telangana state, the present analysis is based on total 35 states/union territories. In terms of Population, India is the second biggest country of the world after China. As per the United Nations estimate it will overtake China by 2050. No doubt population plays a significant role in modern economic development but high growth rate of population (1.76% during 2001-2011) coupled with high density (382 persons/ sq.km) poses great pressure on distribution of basic amenities.

Objectives

In backdrop of above discussion, the present study has been carried out with the following objectives:

i) to examine the progress made in the supply of basic amenities in urban areas at the state level during 2001 and 2011



Fig. 1

ii) to assess the status of sanitary provisions (latrine facility, bathroom facility & drainage outlet)
iii) to analyse the access to safe drinking water supply and unhygienic housing condition
iv) to relate level of urban amenities index to the incidence of sanitation related diseases (waterborne diseases)

Data source and methodology

The study is primarily based on secondary data. Basic amenities data of urban areas of India have been taken from table HH-14 (House listing and Housing Census, 2001 and 2011). Data on access to drinking water sources and their location, sanitation (improved and unimproved latrine facilities, waste water outlet and bathroom), housing condition, fuel types and source of lighting have been collected from census of India, 2001 and 2011. In order to facilitate the study, various tables and maps are drawn for giving insights of household's environment. Data related to waterborne diseases such as acute diarrhoeal diseases, cholera, malaria, dengue and typhoid have been collected from Ministry of Health and Family Welfare, Govt. of India 2001 and 2011. Arc GIS software (10.2 version) has been used to prepare maps. For ascertaining the overall level of urban amenities development, Z-score has been calculated.

Analysis and discussion

Access to basic amenities in urban areas:

Table 1 presents percentage of households with access to different basic services in urban areas derived from 2001 and 2011 census. In urban areas nearly one-fifth households do not have access to toilet facility. In terms of number, about 60 million population has no access to toilet facility in urban areas and they have no option other than open defecation. This has been recognized by the Central Government as one of the serious problems in the recent document of the Planning Commission (2008). Another aspect of sanitation is the waste water outlet connected with closed drainage.

The percentage of households having waste water outlet connected with closed drainage.

Table 1: Percentage of households with selected basic amenities in Urban India, 2001-2011

Amenity Group	Amenities in Percent	Urban	
		2001	2011
Housing Condition	Households with one room dwelling	35.11	32.13
	Households with 6 to 8 persons	24.39	20.16
	Households with 9+ persons	09.25	05.45
Drinking Water Facility	Households with tap water	68.66	70.63
	Households with hand-pump	16.24	11.86
Sanitation Facility	Households having bathroom facility within premise	70.40	86.98
	Households with latrine facility	73.72	81.36
	Households with waste water outlet connected to closed drainage	34.50	44.50
Fuels for Cooking	Households with LPG facility	47.96	65.03
	Households with firewood facility	22.74	20.12
Source of Lighting	Households with electricity facility	87.59	92.68
	Households with kerosene facility	11.61	06.48

Source: Census of India, (House listing and Housing Census, 2001 and 2011)

was 34.50 in 2001 which rose to 44.50 per cent in 2011.The waste water outlet connected with open drainage is not conducive for human health. Use of clean fuel is very important from health view point. In urban areas more than three-fifth of households were found using LPG in 2011 compared to two-fifth in 2001. This shows that high proportion (two-fifth) of households was using polluted fuels which are not only hazardous for health but also contribute to emission of greenhouse gases and in turn global warming. Urban life without access to electricity, toilet facility, water, fuel and drainage is unsustainable and unhealthy.

In most of the states/union territories, the situation of availability of electricity are good compared to sanitation facility namely access to toilet facility and drinking water (Table 2). Among states, the availability of electricity varies from 67 percent in Bihar to 100 percent in Lakshadweep. There is a significant improvement in the electrification of the households from 2001 to 2011 in almost every state, and this is also true for other amenities like toilet facility, drinking water and clean fuel. One of the lowest percentage of households covered by toilet facility is found in Chhattisgarh (60.20 percent) followed by Odisha (64.78 percent). On the other hand, virtually all households are found to have toilet facility in North-eastern states like Tripura, Sikkim, Nagaland and Mizoram. The developed states such as Punjab, Haryana and Maharashtra have almost all households covered with safe drinking water supply. Similarly, the states with good monsoon rains, e.g. Uttar Pradesh, Bihar and West Bengal are also showing good coverage of households with safe drinking water supply. The use of clean fuel like LPG varies from 21 percent in the state of Lakshadweep to 90 per cent in the state of Delhi.

The pattern of basic amenities closely follows the level of urbanization. The states with low availability of electricity in urban areas are also characterised by low level of urbanization. The correlation coefficient between proportion of households with electricity in urban areas and percentage of urban population as per 2011 census shows a positive significant relationship (r = 0.405 at 0.05 significant level). On the other hand, facilities like availability of toilet, drinking water and drainage are significantly correlated with level of urbanization at the state level. Apart from economic reasons, there are a variety of natural, social, cultural and behavioural factors that determine the access and use of basic services like toilet facility, drinking water and .clean fuel. The access to toilet facility is found lowest in urban areas of Odisha and Chhattisgarh and highest in North-eastern states. In most of the north-eastern states including Assam, the availability of toilet facility is of much higher order than the national average (83 per cent). The data on type of toilet show that pit latrines are prevalent in both rural and urban areas of north-eastern states. On the other hand, access to safe drinking water is low in most of the north-eastern states as a large number of households depend on streams and rivulets for water supply. Similarly, Nagaland also possesses a very low percentage of households with safe drinking water (6.02 percent) as people use tap water for drinking purposes (2011). In the states where use of clean fuel like LPG is higher, the availability of electricity is also found higher. On the other hand, toilet facility is not significantly correlated to the basic amenities like electricity, drinking water, and use of LPG in the urban areas of states and union territories. Earlier studies have also indicated that increasing level of development does not reflect improvement in the provision of sanitation facility at the households level (Kundu 1991).

Housing condition

Housing should be given high priority in planning because proper and adequate shelter is most important for healthy life and it also enhances

the performance of the residents in their domestic and economic duties (Rahman, 1998). The number of rooms in urban dwellings is an important indicator of urban wellbeing and hygienic environment. In 2001 about 35.12 percent dwellings were characterised by one room. The maximum percentage of such dwellings was found in Tripura (61.40 percent) followed by Puducherry (49.73 percent) and Maharashtra (46.71 percent). On an average the percentage of dwellings possessing one room in 2011 accounts for 32.13 percent which varies from 6.28 percent in Kerala to 62.83 percent in Daman & Diu. Out of 35, 11 states/union territories are characterised by the higher percentage of one room dwellings than the national average. In 2001 the percentage of households with no exclusive room was merely 2.64 percent which grew to 3.08 percent in 2011indicating steadily deteriorating situation. If these dwellings are clubbed with one room dwellings, the percentage of such dwellings goes around 35.21 in 2011 for entire India which was 37.76 percent in 1991. This figure ranges from maximum 66.96 percent in Daman & Diu to minimum 7.19 percent in Kerala. Almost 10 states/union territories have surpassed the country's average.

Another parameter of unhygienic environment is the number of persons residing in a house. From this perspective, the households with six and more persons are not considered conducive for good health. In 2001 on an average 33.51 percent households have 6 and more persons living in the same house. The highest percentage of such dwellings was 62.01 in Chandigarh and lowest was found in Tamil Nadu (18.90 percent). For India as a whole this figure declined to 26.06 percent in 2011. sixteen (16 No) states/union territories are endowed with such dwellings above the national average. The comparison of this fact of 2001 and 2011 provides some satisfaction.

In 2001, housing condition index (above

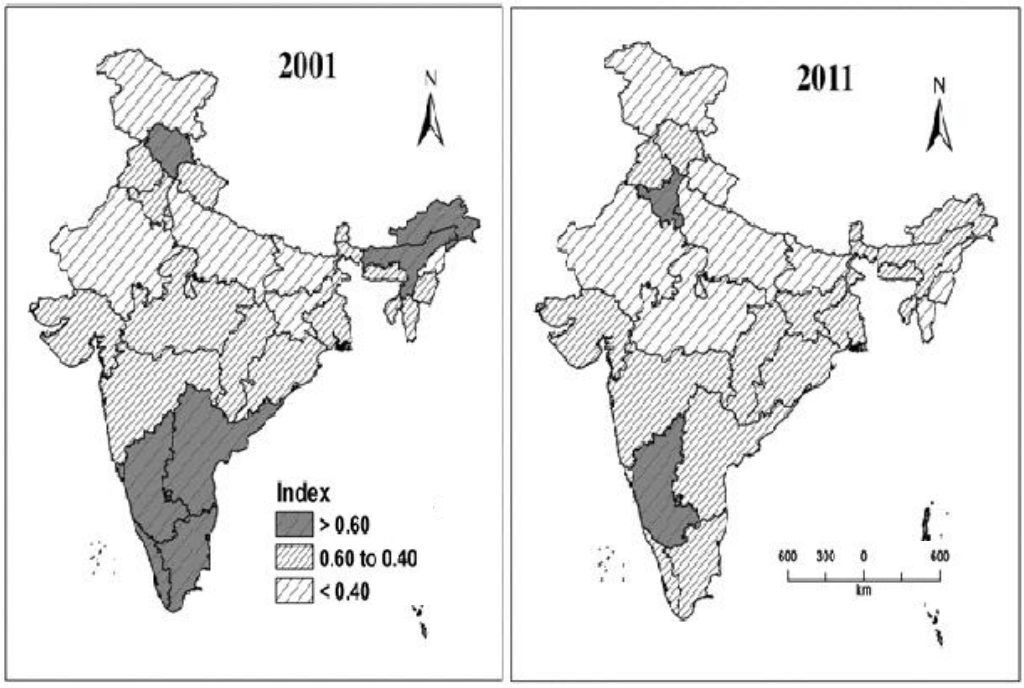


Fig. 2

0.60) shows that twelve states stretching over southern and north-eastern part of India this condition is comparatively good but in 2011 only four states (Kerala, Goa, Andaman & Nicobar Islands and Himachal Pradesh) fall in this category where as backward states such as Uttar Pradesh, Bihar, Tripura and Daman & Diu show grimmer condition by falling in low (below 0.40) category (Fig.2).

Drinking water facility

Water supply is one of the indispensable ingredients in promoting economic development and betterment of human welfare of every country (Abebe and Singh, 2011). Access to safe drinking water and sanitation is not only an important measure of the socio-economic status of the households but is also fundamental to the health of its members (Kumar and Das, 2014). The UN Millennium Development Goals (MDG) aims to reduce by half the proportion of people without sustainable access to safe drinking water and basic sanitation facilities by the year 2015. Drinking water facility includes tap water and hand pump. Safe drinking water supply is necessary for promoting sustainable sanitation. The tap water supply is regarded quite safe. The percentage of households having access to safe drinking water was 68.66 in 2001 for the country as a whole. This figure ranged from 1.16 percent in Lakshadweep to 97.31 percent in Andaman and Nicobar. There were 17 states/ union territories which had tap water supply below the national average. In this year water supply made from all sources (tap, well, tube - well and hand pump) was accounted for 98.00 percent. West Bengal and three North-Eastern states namely Manipur, Mizoram and Tripura were endowed with water supply below 90 percent from the above sources. Tap water supply in 2011 showed negligible improvement (1.97 percent).

Presently on an average 71.00 percent

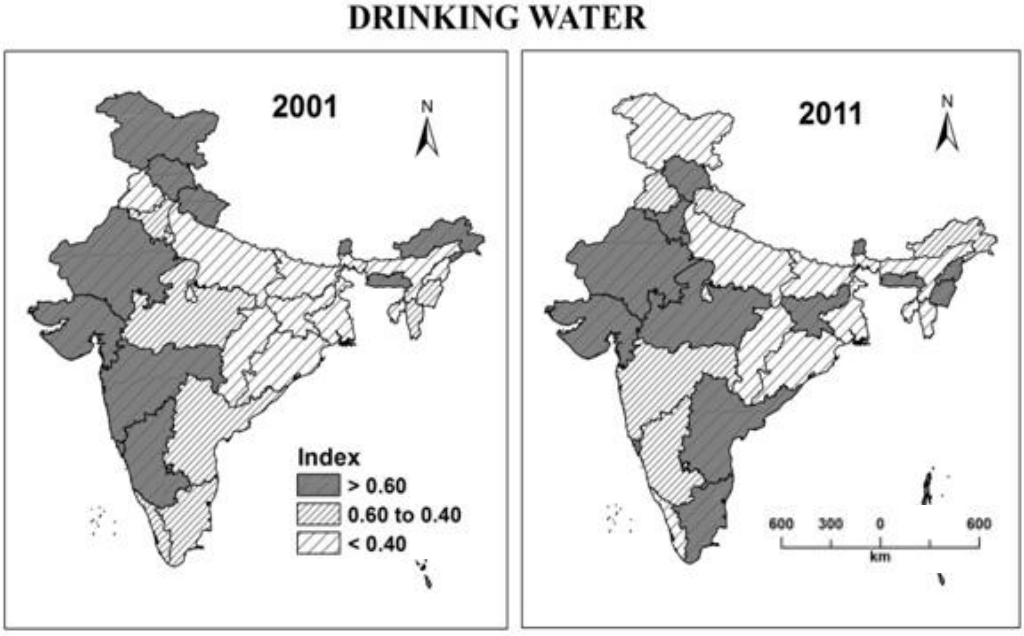


Fig. 3

households got tap water supply in India which exhibits 3.0 percent improvement in 10 years period (2001-2011). Tap water supply ranges between maximum being in Andaman & Nicobar (97.9 percent households) to minimum (16.93 percent households) in Lakshadweep. At the front of total water supply through taps, wells, hand - pumps and tube - wells India has made remarkable progress (97.54 percent) in 2011. The percentage of such households varies from 99.68 percent in Puducherry to 66.34 percent in Manipur state. There are only four states of North-East India where water supply is available to less than 90 percent households.

An important aspect of water supply is the location of drinking water source. The source is within premise, near premise and away from premise. In Indian cities 71.22 percent households have it within premise in 2011 which varies from 31.76 percent in Manipur to 92.70 percent in Punjab. This means roughly 29 percent households still fetch water from some distance. 12 states/union territories possess the percentage of households having source within premise higher than the national average. The states characterised by the lower percentage of households having location within premise belong to north-eastern, central-eastern and southern parts of India. If a comparison drawn from 2001 condition, there is no substantial improvement at the front of total water supply in 2011 as it was almost same however only 3 percent improvement is seen in tap water supply during this period.

In 2001, by combining source and location of water supply, drinking water index has been derived. In fifteen states/union territories most of the western and some northern or north-eastern states such as Sikkim, Andaman & Nicobar Islands, Himachal Pradesh, Daman & Diu, Maharashtra, Goa, Gujarat etc fall in high category (above 0.60) and twelve states fall in low (below 0.40) category (fig.3). In 2011, scenario has changed and seventeen states/union territories fall in high category stretching over north-western and south - eastern parts of India. Six states/union territories such as Punjab, Manipur, Uttarkhand, Daman & Diu, Arunachal Pradesh and Kerala lies in medium category (0.60 to 0.40) while remaining states/union territories (12) fall in low category.

Availability of sanitation facility

Sanitation is the key to healthy urbanisation. The term sanitation is a composite concept which involves provision for latrine, drainage, sewerage and solid waste/garbage disposal etc. It covers the whole field of controlling the environment with a view to prevent diseases and promote good health (WHO, 1993). In 2011 the percentage of urban households having access to bathroom facility in Indian cities and towns accounts for 77.52. This percentage varies from 96.53 in Lakshadweep to 45.73 percent in Bihar. There are 14 states/union territories which possess this proportion less than the national average that means these states/union territories are lagging behind in context of bathroom facility. Approximately, 10 percent households have bathroom facility but without roof. The percentage of such households varies from maximum 22.91 percent in Bihar to minimum 1.11 percent in Lakshadweep. In comparison to 2001 there is roughly 10 percent increase in the number of households having bathroom facility within premise in 2011 *i.e.* from 67.71 percent to 77.50 percent.

The share of households encompassing latrine facility within premise was 73.72 percent in 2001 that enhanced to 81.36 percent in 2011. This percentage varies from 98.52 in Mizoram to 60.20 percent in Chhattisgarh in 2011. There are 8 states/union territories which possess this proportion less than the national average that means these states/union territories are lagging behind in context of latrine facility. This is the pitiable sign of the country in regards to sanitation.

The painful aspect of sanitation is the waste water outlet connection to open drainage in majority of the households. In 2001 only 34.50 percent households have their waste water outlets connected to closed drainage which grew to 44.50 percent in 2011. But still it is a painful situation for the country because more than 55 percent of the households discharge their waste water in open area. The highest percentage of households endowed with this facility is found in Chandigarh where 87.35 percent households have waste water outlet connection to closed drainage. Thus, there is an urgent need to improve the sanitation facilities especially in the households which do possess flush latrine connected to other system, pit latrine without slab/ open pit, service latrine where night soil is removed by human and serviced by animal.

Sanitary facility index developed for showing average condition indicates that in 2001 thirteen states/ union territories stretching over northern, western and southern parts of India come under high category (above 0.60) leaving remaining states/union territories in medium and poor category of sanitary facility (fig. 4). In 2011 fourteen states / union territories fall in high category spread over southern, central and some pockets in northern part of India. Nine states/ union territories, *i.e.* Arunachal Pradesh, Madhya Pradesh, Tripura, Manipur, West Bengal, Bihar, Jharkhand, Odisha and Chhattisgarh come under low (below 0.40) category. These states are basically characterised by low level of urbanization, poor literacy and BIMARU states while remaining states/union territories fall in medium (0.60 to 0.40) category of sanitary facility.

Fuels for cooking

The type of fuels for cooking is an important indicator from health view point of the woman. In 2001 on an average 47.96 percent households had access to LPG facility which ranged from 80.17 percent in Daman & Diu to 23.13 percent in Lakshadweep. This figure rose to 65.03 percent in 2011 marking reasonable growth in this facility. This means 44 percent

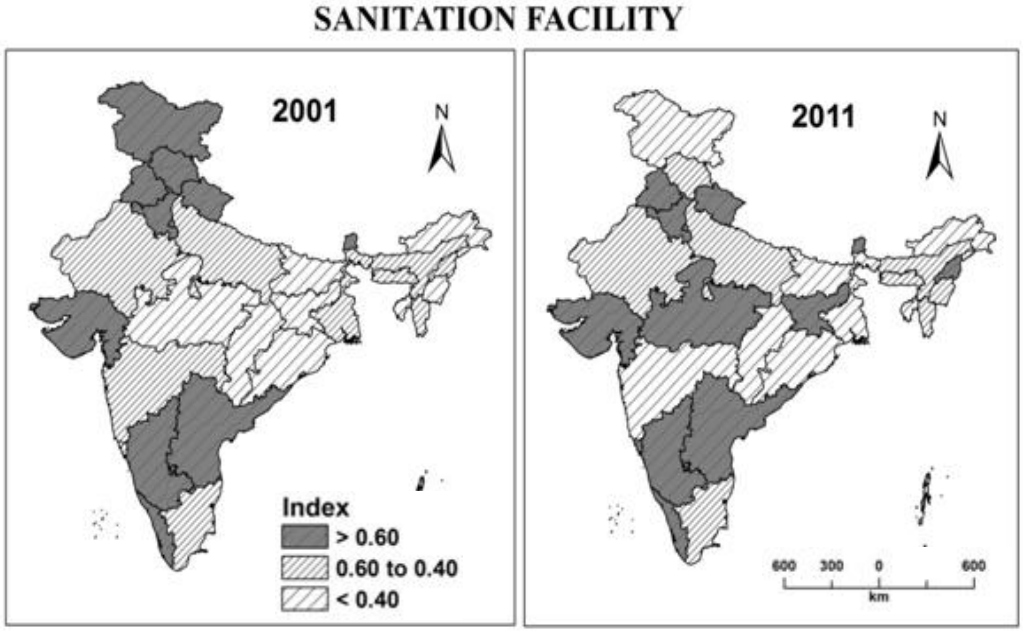


Fig. 4

households still use other source of fuels. In this context the highest percentage (98.52) has been recorded in Delhi (90.28 percent) while the lowest one (20.87 percent) in Lakshadweep. Fifteen states namely Karnataka, Uttar Pradesh, Madhya Pradesh, Manipur, Daman and Diu, Nagaland etc reveal the access below the national average and these states have to move faster in promoting LPG facility for making their people healthy specially women.

In the study area 22.74 percent households used firewood as a fuel for cooking in 2001 which declined to 20.12 percent in 2011. It means some improvement has been observed regarding smoke free fuel during this period. In 2011 households using firewood ranges from minimum 3.17 percent in Delhi to maximum 60.46 percent households in Lakshadweep. The condition of households of 14 states/ union territories seems poorer because in these states more than 20 percent households still use fire wood for cooking. In this regard the households of only 8 states reveal satisfactory condition because their proportion is less than 10 percent. It is remarkable to mention that there are substantial proportions of households in urban areas of the country which still use cow dung cake, crop residues, kerosene, coal, etc. for cooking purpose that are not good for the health of woman concern.

The fuel index derived for 2001 showed that most of the northern and western states come under high (above 0.60) category which shows the better condition in comparison to other states/ union territories in the country. In 2011 sixteen states/union territories of northern, central and north-eastern parts of India fall in high category, twelve states of western and some eastern states/union territories in low (below 0.40) category while remaining fall in medium (0.60 to 0.40) category (fig.5).

Sources of lighting

Apart from short and interrupted supply position, the source of lighting is the key concern. The main source of lighting in urban areas of India is electricity and around 87.59 percent

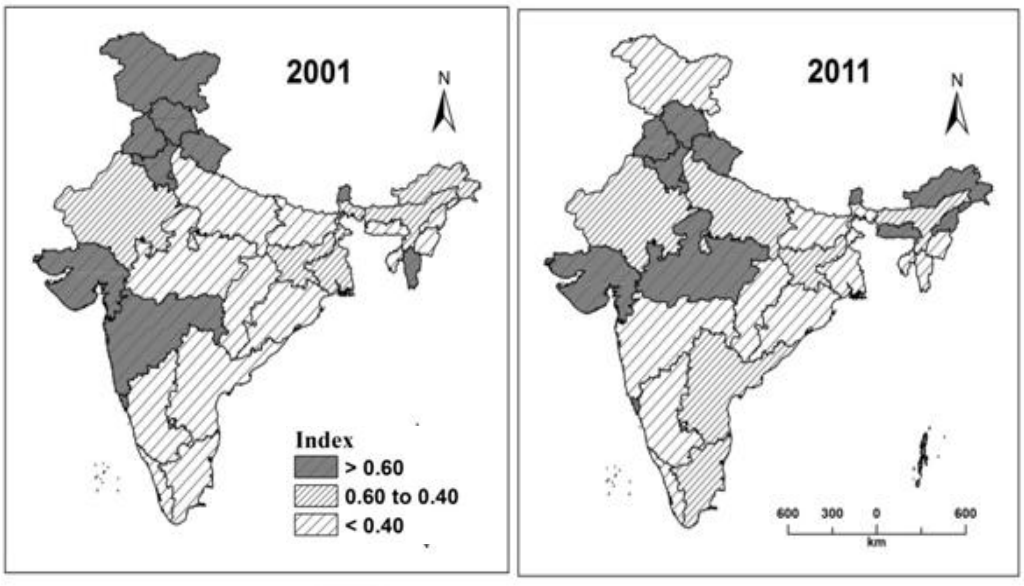


Fig. 5

households in 2001 and 92.68 percent households in 2011 do get light through this source. Kerosene is another (11.61 percent in 2001 and 6.48 percent in 2011) source and these two sources jointly share almost 99 per cent of households.

In 2011 the percentage of households covered by electricity supply ranges from maximum 99.66 percent in Lakshadweep to minimum 66.73 percent in Bihar. There are only 28 states/union territories where electricity supply covers above 90 percent households. In terms of source of lighting, the condition of 7 states/union territories is pitiable because here electricity supply covers less than 90 percent households. The proportion of kerosene users varies from maximum 32.22 percent in Bihar to minimum 0.21 percent in Lakshadweep. In 2001 seventeen states/union territories such as Lakshadweep, Daman & Diu, Jammu & Kashmir, Himachal Pradesh, Sikkim, Punjab, Chandigarh, etc stretching over central, western and northern parts of India had lied in high category (above 0.60) of source of lighting. In 2011 situation has improved slightly and twenty three states/union territories grouped in high category spreading over southern, central and some pockets in western, northern and north-eastern parts of India. Ten states/union territories fell in low category (0.40) while remaining states/union territories lied in medium category (Fig. 6).

Incidence of waterborne diseases

Haphazard water supply as well as its discharge can lead to severe consequences in the form of outbreak of water-borne diseases, such as acute diarrhoeal disease, cholera, malaria, dengue and typhoid. In India, over one lakh people die due to water-borne diseases annually. It is reported that groundwater in one-third of India's 600 districts is not fit for drinking as the concentration of fluoride, iron, salinity and arsenic exceeds the tolerance level. About 65 million people have been suffering from fluoro-

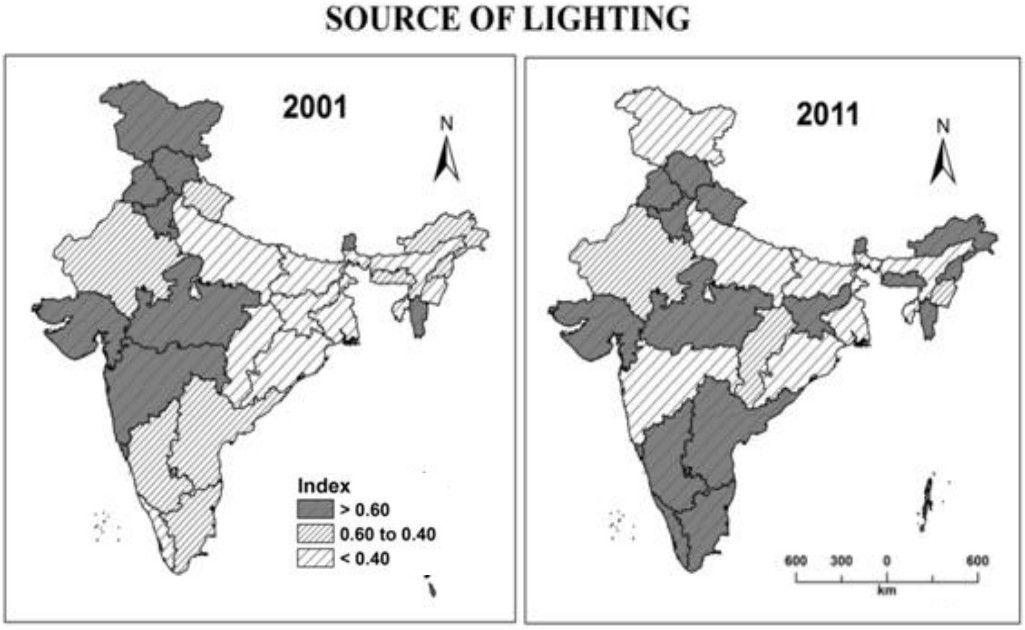


Fig. 6

sis and five million are suffering from arsenicosis in West Bengal due to high amount of arsenic content. A World Resources Report says that about 70 per cent of India's water supply is seriously polluted with sewage effluents. The UN reported that India's water quality is poor, it ranks 120th among 122 nations in terms of quality of water available to its citizen.

On an average 1150 per 100,000 persons got affected by the above unhygienic condition in 2011. More than 5000 persons per 100,000 persons got affected by these diseases are found in 8 states namely in Dadra & Nagar Haveli, Sikkim, Puducherry, Lakshadweep, Daman & Diu, Andaman & Nicobar Island, Meghalaya and Jammu & Kashmir. These states/union territories are scattered all over India. Twelve (12) states are found to have 1000 to 5000 persons per 100,000 population affected by sanitary related diseases. These states make a distinguished region lying mostly in southern and south-eastern parts excepting Himachal Pradesh and Chandigarh. With regards to sanitary related diseases, 15 states/union territories, lying mostly in central and western parts of the country, reveal better sanitary condition because they are characterised by less number of affected persons *i.e.* 1000 persons per 100,000 population. If an attention is paid on the number of persons affected by these diseases in 2001, there seems no virtual change in that scenario. Only slight improvement is marked in 2011 (Fig.7).

Level of urban amenities

For calculating the overall level of development of urban amenities, Beta values of all five variables have been computed using SPSS programme. After that composite scores are obtained and grouped into three categories-high, medium and low with the help of mean and standard deviation. In 2001,12 states/union territories of northern and western parts were classed as high amenities development category (above 3.00) followed by 14 states/union territories of central, southern and some pockets in north-

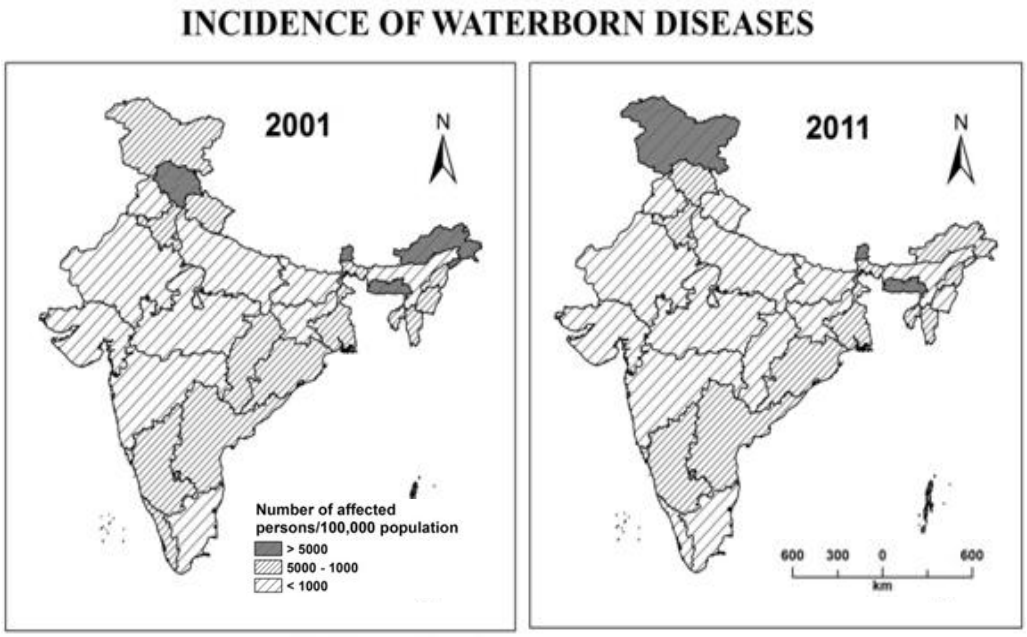


Fig. 7

eastern which consisted medium category (3.00 to 1.00). It is notable that 9 states/union territories mostly lying in northern and eastern-northern parts of India made category of low amenities (below 1.00) development which draws attention of the planners for priority development. Similar patterns of urban amenities development has also been found in 2011(Fig.8).

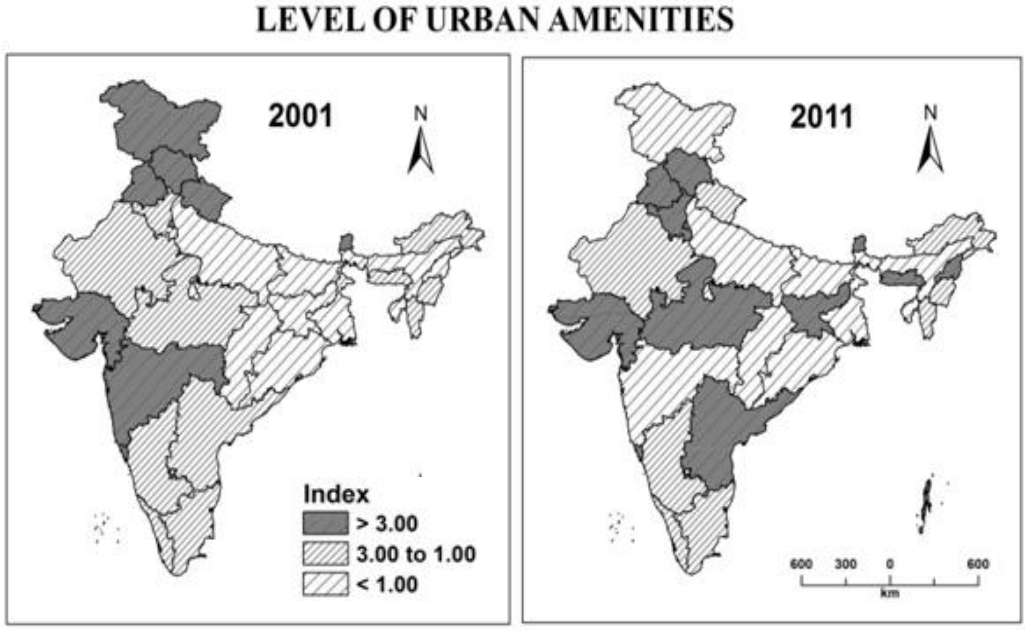


Fig. 8

Conclusions

In India the rate of urbanisation is increasing at slower rate than the world's average. The absolute number of urban population is large enough (377 million) for pressing heavier demands on States and Central Governments for improving the basic amenities. It is clear that the pace of housing and sanitation development compared with that of access to safe drinking water is relatively slower. There is an urgent need to give more attention on improving basic sanitation facilities because these facilities are more crucial to achieve the good health of people living in urban areas. In 2011, considerable reduction in disparities with regards to basic amenities is a notable achievement but in relation to availability of one room dwellings, dwellings possessing nine and more persons, drinking water availability outside premise, unimproved sanitation, dwellings without bathroom facility, dwellings with waste water outlet to open drainage and households using crop residue, coal and kerosene as fuel, continuous sincere efforts are needed.

At the front of access to safe drinking water to urban citizens, the country has made quite remarkable progress. But with regards to access to latrine facilities and their outlet connection to piped sewerage system, unhygienic housing condition and bathroom facility without roof, India has to accelerate pace of efforts for providing sustainable and healthy life to urban citizens. Ten states/union territories comprising low

level of urban amenities development index category (below 1.00) need be developed on priority basis in terms of urban basic amenities. The earlier policies were crippled with poor fund; infrastructures; awareness and participation; technology choices; capacity building; responsibility and integration among concerned institutions and government commitment. The recent *Swacch Bharat* Mission initiated by our Prime Minister seems to be comprehensive with focussed targets in achieving the Millennium Development Goals. However, a long term planning with sincere effort is needed for safe disposal and treatment of human waste, solid waste and waste water in urban areas otherwise the rise of sanitary related diseases will bound to occur posing a huge burden of expenditure on curing the ill persons and treating the precious water and soil resources of the country. Thus, the comprehensive and integrated strategies along with strong political commitment are needed to overcome the problems arised out of inadequate and unsustainable sanitation.

References

Bhagat, R.B., 2005, Rural-urban Classification and Municipal Governance in India, Singapore *Journal of Tropical Geography*, 26: pp. 61-74.

Census of India, 2001, Series-1. Tables on Houses, Household Amenities and Assets.

Census of India, 2011, Series-1. Tables on Houses, Household Amenities and Assets.

Chaplin, Susan. E., 1999, Cities, Sewers and Poverty: India's Politics of Sanitation. Environment and Urbanization, 11 (1): pp. 145-158.

Das Gupta, Monica, 2005, Public health in India: An overview. World Bank Policy Research Working Paper 3787. December 2005. Available from: http://unpan1.un.org/intradoc/groups/public/documents/APCITY/UNPAN024731.pdf; < accessed on December 05, 2017>.

Dreze, Jean and Murthi, Mamta, 2001, Fertility, Education and Development: Evidence from India. *Population and Development Review*, 27 (1): pp.33-63.

Das Gupta, Monica, 2005, Public Health in India: An Overview. World Bank Policy Research Working Paper 3787. December 2005. http://unpan1.un.org/intradoc/groups/public/documents/APCITY/UNPAN024731.pdf; < accessed on December 02, 2017>.

Grace, J. R. A., 2012, A Critical Analysis of Existing Municipal Solid Waste Management Practices in Madurai City, 32 (1): pp.27-40.

Gupta, Indrani and Mitra, Arup, 2002, Basic Amenities and Health in Urban India, *National Medical Journal of India*. 15 (4): pp.242:244.

Kundu, A., 1991, Micro Environment in Urban Planning: Access of Poor to Water Supply and Sanitation, *Economic and Political Weekly*, 34: pp.1893-1906.

Kumar P., 2011, Urban Sanitation in India: A Snapshot, Arghyan, Bangalore.

Mavalankar, Dileep and Shankar, Manjunath, 2004, Sanitation and Water Supply: The forgotten infrastructure, India Infrastructure Report , Oxford University Press. New Delhi, 2004: pp. 314-324.

Shaw, Annapurna, 2003, Urban Growth, Basic Amenities and Waste Management in India. In Challenge of Sustainable Development: The Indian Dynamics. Edited by Ramprasad Sengupta and Anup Sinha, Manak Publications, New Delhi: pp. 298-338.

UNDP., 2006, Human Development Report 2006-Beyond Scarcity: Power, Poverty and the Global Water Crisis.

●●●

NGJI, An International Refereed Journal
(NGSI-BHU, ISSN: 0027-9374/2017/1686)
Vol. 64, No. 3-4, Sept.-December, 2018

Comparative Study of Sex Ratio among Hindu and Muslim Population and their Spatial Distribution in Uttar Pradesh: A Geographical Analysis

Tariq M Usmani[1] and Shamshul Haque Siddiqui[2]

Abstract

Sex ratio in the Indian population particularly in Uttar Pradesh is becoming adverse to women. It has been rapidly declining decade by decade. It widely differs among regions and within districts. The major states that are largely responsible for the decline in the overall sex ratio in India are Uttar Pradesh, Bihar, Jharkhand, Orissa, Chhattisgarh, Madhya Pradesh, Gujarat, Maharashtra and Tamil Nadu. The major causes for declining sex ratio are: sex ratio at birth, sex-selective abortions, sex ratio of children and sex-differentials in mortality, social customs, traditions, religious beliefs, culture etc. has great influence on sex ratio. As these factors vary according to different religions, sex ratio in different religions also varies from each other. Generally, male dominating cultures have lower sex ratio. In the study region, sex ratio of Hindu and Muslims are calculated and discussed and compared with each other. This in turn leads to several consequences to men and on the society. The present paper deals with the spatial distribution of sex ratio among Hindu and Muslim population of Uttar Pradesh.

Key Words: *sex composition, social custom, sex differentials and religious beliefs.*

Introduction

Sex ratio is an important demographic and cultural index which measures the extent of the existing equity between genders in a society at a given point of time. Changes in sex ratio largely reflect the underlying socio-economic and cultural and religious patterns of a society in different ways. Determinants of changes in sex ratio among different communities particularly in Hindus and Muslims vary from sex differentials in mortality, sex selective migration, sex ratio at birth times and sex differentials in population enumeration.

Sex ratio is an important visible, indisputable and convenient indicator of social status. It is one of the basic demographic characteristics of the population. 'Among various elements of population composition, sex composition, age composition and economic composition hold a

1. Associate Professor, Department of Geography Aligarh Muslim Univarsity, Aligarh.
2. Professor, Department of Geography Aligarh Muslim Univarsity, Aligarh.

prime place for population geographers. Separate data of different communities for various types of planning and for analysis of the demographic characteristics such as natality, mortality, migration, marital status and socio-economic characteristics, etc needed. The balance between two sexes affects the social and economic complementary roles in the economy and society, the study of sex composition assumes added significance for a population geographer.'

Objectives

The present study is undertaken by keeping the following objectives.

1. To analyse the spatial distributional pattern of sex ratio among Hindus and Muslims in Uttar Pradesh.
2. To understand the variations in sex ratio of Hindu and Muslim population in the study region.
3. To compare different sex ratio among Hindu and Muslim Population in the study region.

Data base and methodology

The data has been taken from primary census abstract and census of India 2011. After the collection, the data was arranged, tabulated, calculated and analysed. The results obtained from the calculation, is further represented on the maps in five categories of Very high, high, medium, low and very low. The district level data of Uttar Pradesh for the calculation of religion wise sex ratio has been also obtained from official census website. The sex ratio was calculated at the district level as the number of females per 1000 males following the definition of Indian census as fallows;

Sex ratio = Total Females/Total Males X 1000

Study area

Uttar Pradesh; the most populous state of the country, has a geographical area of 240928 km2 which constitute7.3 % of the total area of the country. Uttar Pradesh is situated between 23?52?N-30?24?N latitude and 77?05?E-84?38?E longitude. It is bounded by Uttaranchal and Nepal on the north, by Madhya Pradesh and Chhattisgarh on the south, Rajasthan, Haryana and Delhi on the west, and Bihar and Jharkhand on the east. Despite its bifurcation in November 2000 into Uttaranchal and Uttar Pradesh, it is still one of the largest and most densely populated states in India. Uttar Pradesh is one of the poorest states in India. It has low income and low productivity levels, low degree of urbanization, widespread illiteracy, high birth and death rates, and low levels of investment. It is one of the most populous States, supporting 16.2% of India's population. The total population is 19.98 million (2011 census) of which 79.3% is rural and 19.7% urban. The population density is 689 persons per sq. km. It has been divided into 71 administrative districts.

Results and discussion

The sex ratio varied widely between Hindu and Muslim population. Both religious groups follow varied cultural practices giving less or more importance to females on the basis of their socio-cultural, economic and demographic characteristics and religious beliefs. Literacy and migration among females also depend upon religious taboos to a large extent. Dowry system is practiced differently in different religions. All these factors are closely related to sex ratio. Literacy rate also have variation among Hindu and Muslim population which is also one of the determinant of sex ratio.

Spatial pattern of overall sex ratio

Sex ratio in India according to 2011 census is 940 and in Uttar Pradesh it is 912 which is less national average. Examination of table 1 and Fig.1 reveals that the sex ratio is highest in the district of Jaunpur (1024). It is followed by Azamgarh (1017), Deoria (1017) and Pratapgarh (998) whereas the lowest sex ratio is recorded

in the district of Gautam Budhnagar (851) which is followed by Baghpat, Hamirpur (861) and Kanpur Nagar (862). Out of seventy one districts seventeen districts have sex ratio more than national average in the census year 2011.

Rural sex ratio of India is 947 whereas in Uttar Pradeh it is only 918 which again below the national average. Rural sex ratio in Uttar Pradesh is highest in the districts of Jaunpur (1032) followed by Deoria (1028) and Azamgarh (1026). The lowest sex ratio of rural population in Uttar Pradesh is observed in the districts of Baghpat (856). It is followed by Auraiya (858), Hamirpur (858) and Jalaun (859) which is below the national rural average. On the other hand sex ratio of urban population is highest in the district of Mau (951) which is followed by Azamgarh (945) and Ambedkar Nagar (941) whereas the lowest sex ratio in Urban population is found in Gautam Budhnagar (836) followed by Kanpur Nagar (859) and Allahabad (862) which is less than national average Uttar Pradesh which is 926 and 894 respectively.

Spatial pattern of religious variation in sex ratio

The majority of people in Uttar Pradesh, the study area follow Hindu religion. Their proportion to total population is 79.76 percent in 2011. The sex ratio of Hindu population in the study area as a whole is only 907 females per thousand males. The highest sex ratio among Hindu population is recorded in Jaunpur (1024) followed by Azamgarh (1019) and Deoria (1017) whereas the lowest sex ratio of the Hindu population is observed in the district of Baghpat (839) followed by Gautam Budh Nagar (851) and Kanpur Nagar (854).

The Muslim is the second largest religion in Uttar Pradesh which comprises 19.26 percent of the total population. The sex ratio of Muslim population is far more than that of the Hindus which is found to be 937 females per thousand males in general which is followed by lowest sex ratio in the districts of Gauatam Budhnagar (858), Kanshiram Nagar (870) and Chitrakoot (888).

Spatial pattern of rural sex ratio

An examination of table 1 and Fig.2 reveals that the highest rural sex ratio among Hindu population is shown by district Jaunpur (1031) which is followed byAzamgarh (1025) and Deoria (1021) whereas the lowest sex ratio in this category is found in the districts of Baghpat (835) which is followed by Budaun (854) and Auraiya (855). It is interesting to note that the highest sex ratio is found in Eastern Uttar Pradesh whereas the lowest sex ratio in Hindu population is registered in Western Uttar Pradesh.

In comparison to Hindu population the sex ratio among Muslim Community is in the favour of females. The highest sex ratio in Muslim rural population is recorded in the district of Deoria (1080) which is followed by the district of Basti (1054), Jaunpur (1045) and Azamgarh (1039) which is much higher than the Hindu population in the same category. The lowest sex ratio in Muslim rural population is found in the district of Chitrakoot (873), Hamirpur (879) and Kanshiramnagar (884) which is again higher than the lowest sex ratio of Hindu rural population.

Spatial pattern of urban sex ratio

The national average of urban sex ratio is 926 whereas in Uttar Pradesh it is only 894. Table 1 and Fig.3 reveals that the urban sex ratio among Hindu population is higest in Ambedkar Nagar (934). It is followed by Maharajganj (929), Sidharthnagar (928) and Pratapgarh (926) which is either above or equals to national average (926). Lowest urban sex ratio among Hindu urban population is in the district of Gautam Budhnagar (837) which is followed by Kanpur Nagar (845), Allahabad (845) and Mathura (858).

Table 1 : Sex Ratio Uttar Pradesh

District	Sex Ratio Total Population			Sex Ratio Muslim Population			Sex Ratio Hindu Population		
	Total	Rural	Urban	Total	Rural	Urban	Total	Rural	Urban
Saharanpur	890	890	890	903	910	892	881	878	888
Muzaffarnagar	889	886	896	918	921	913	869	866	878
Bijnor	917	917	917	938	947	925	902	902	900
Moradabad	906	904	912	918	919	917	895	892	904
Rampur	909	906	917	925	923	929	891	891	890
Jyotiba Phule Nagar	910	907	920	924	919	932	900	901	897
Meerut	886	882	890	921	919	923	867	865	869
Baghpat	861	856	880	917	919	914	839	835	860
Ghaziabad	881	880	882	905	909	903	872	866	875
Gautam Buddha Nagar	851	874	836	858	910	824	851	871	837
Bulandshahr	896	893	907	929	925	934	887	886	890
Aligarh	882	877	893	907	911	904	876	873	885
Mahamaya Nagar	871	867	867	910	901	922	867	864	878
Mathura	863	862	866	910	906	915	859	859	858
Agra	868	863	875	897	904	895	865	862	870
Firozabad	875	867	893	919	921	918	868	864	880
Etah	873	870	892	901	893	912	870	868	884
Mainpuri	881	876	910	935	935	934	878	874	905
Budaun	871	863	911	918	914	925	859	854	898
Bareilly	887	882	896	915	915	914	872	870	878
Pilibhit	895	894	897	917	918	916	886	887	883
Shahjahanpur	872	865	900	907	904	911	863	859	892
Farrukhabad	874	871	884	927	926	929	866	864	877
Kannauj	879	874	904	920	920	919	871	868	893
Etawah	870	862	897	920	933	914	866	860	892
Auraiya	864	858	896	911	903	922	860	855	891
Kanshiram Nagar	880	875	901	870	884	928	872	870	884
Kheri	894	893	901	916	914	926	888	888	887
Sitapur	888	884	915	922	919	929	879	877	904
Hardoi	868	863	899	912	909	918	861	858	888
Unnao	907	906	911	936	935	938	903	903	900
Lucknow	917	906	923	947	933	950	908	902	912
Rae Bareli	943	945	924	967	971	954	940	942	910
Kanpur Dehat	865	862	890	903	902	908	860	858	884

Kanpur Nagar	862	870	859	906	912	905	854	867	845
Fatehpur	901	901	905	953	961	933	893	893	892
Barabanki	910	911	905	9411	944	932	901	903	880
Jalaun	865	859	883	910	912	909	860	856	875
Jhansi	890	893	887	920	924	919	888	892	881
Lalitpur	906	904	916	939	931	945	905	904	911
Hamirpur	861	858	871	891	879	904	858	857	863
Mahoba	878	877	885	912	905	917	876	876	877
Banda	863	860	881	917	917	918	858	855	874
Chitrakoot	879	878	892	888	873	936	879	878	887
Pratapgarh	998	1002	936	1022	1031	959	994	998	926
Kaushambi	908	908	910	933	934	924	904	904	903
Allahabad	901	914	862	937	952	918	897	911	845
Faizabad	962	974	886	995	1014	942	956	969	866
Ambedkar Nagar	978	983	941	991	1015	950	976	979	934
Sultanpur	983	987	921	1003	1011	941	979	982	909
Bahraich	892	890	909	914	914	913	881	880	905
Shrawasti	881	880	912	914	913	921	868	867	903
Balrampur	928	928	917	971	977	922	902	901	910
Gonda	921	923	906	948	955	904	915	916	908
Siddharth Nagar	976	979	937	1029	1036	952	955	956	928
Basti	963	967	907	1014	1054	919	950	953	904
Sant Kabir Nagar	972	977	917	1012	1023	935	960	964	907
Mahrajganj	943	943	935	967	967	969	938	938	929
Gorakhpur	950	960	904	968	996	928	948	958	898
Kushinagar	961	963	917	982	986	934	956	958	912
Deoria	1017	1028	928	1064	1080	972	1011	1021	920
Azamgarh	1019	1026	945	1022	1039	976	1019	1025	917
Mau	979	987	951	984	1013	970	978	985	925
Ballia	937	939	914	959	968	933	935	937	911
Jaunpur	1024	1032	934	1020	1045	955	1024	1031	917
Ghazipur	952	955	913	950	956	930	952	955	905
Chandauli	918	920	906	925	927	920	917	919	900
Varanasi	913	932	889	915	934	910	913	932	881
Sant Ravidas Nagar	955	965	903	935	958	913	959	965	895
Mirzapur	903	907	877	906	908	902	903	907	871
Sonbhadra	918	927	871	926	930	918	916	927	864

Source: Calculated by authors from census,2011

Spatial Pattern of Sex Ratio in Uttar Pradesh (2011)

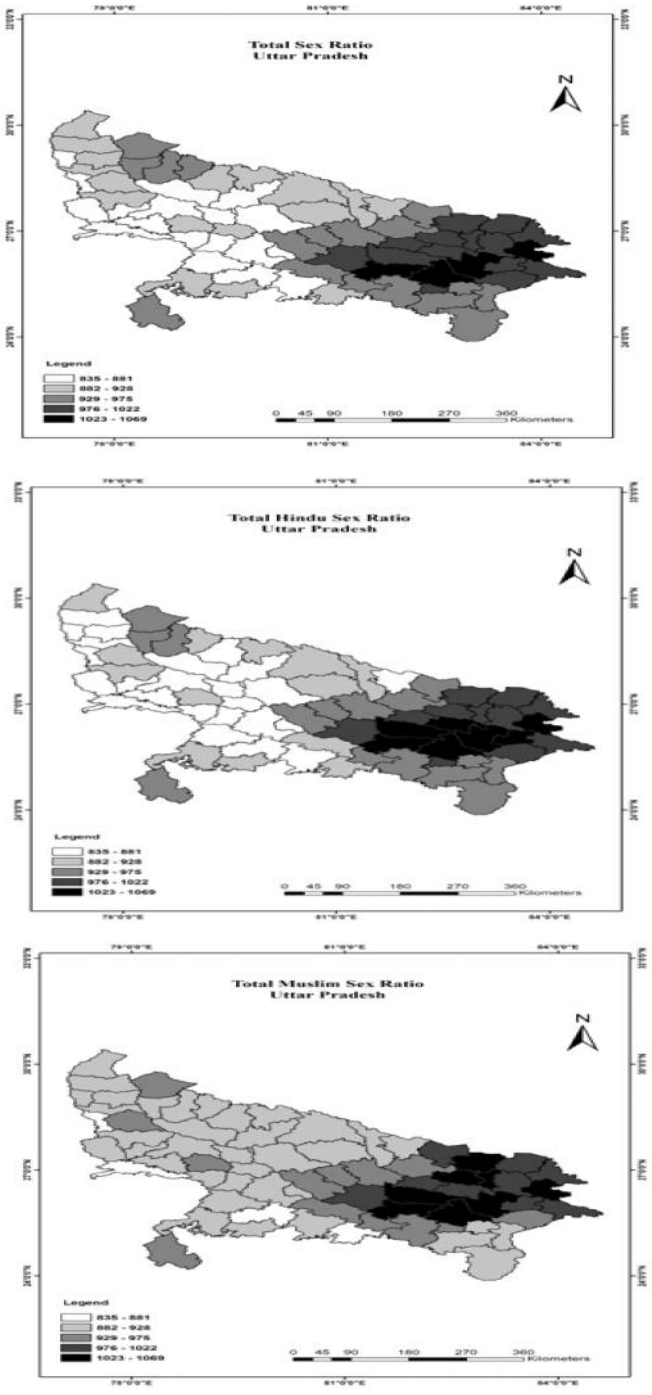


Fig. 1

Spatial Pattern Rural Sex Ratio in Uttar Pradesh (2011)

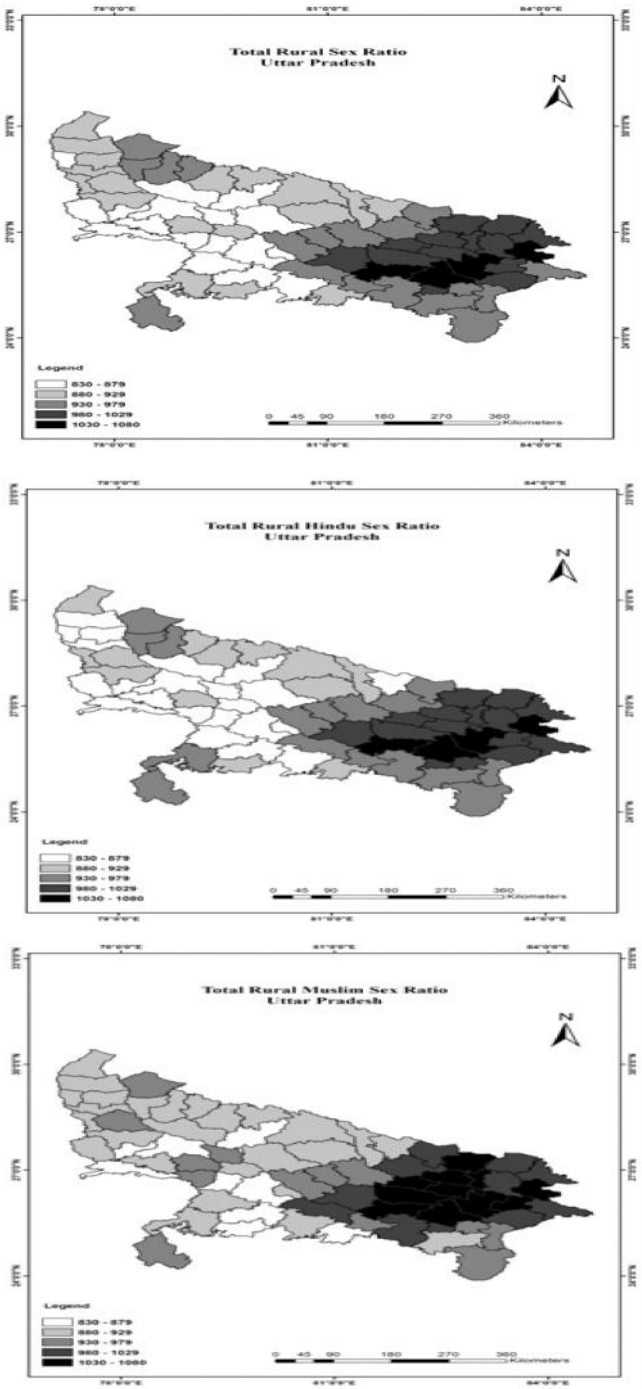


Fig. 2

Spatial Pattern Urban Sex Ratio in Uttar Pradesh (2011)

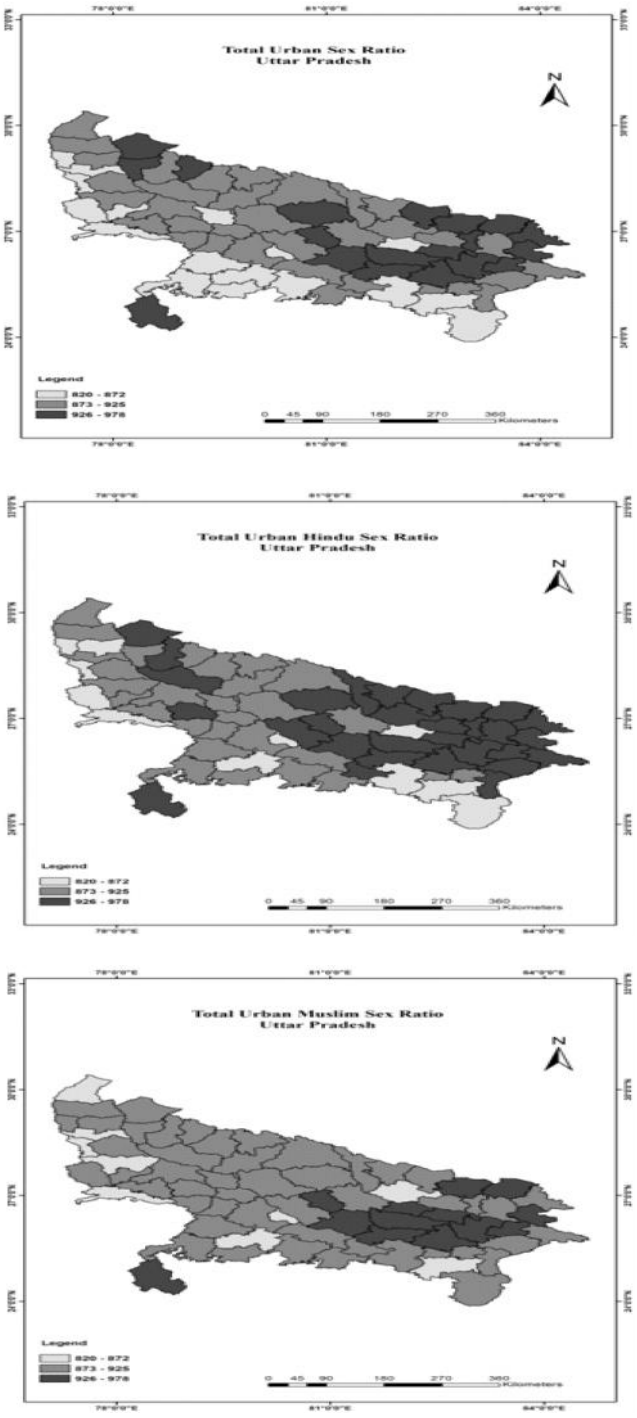


Fig. 3

As compared to Hindu urban population, sex ratio in Muslim urban population is higher. The highest sex ratio is found in the district of Azamgarh (976) followed by Deoria (972) and Mau (970) where as lowest sex ratio of Muslim urban population is recorded in the district of Gautam Budhnagar (824). It is followed by the district of Saharanpur (892) and Agra (895).

Conclusion

The sex ratio of Uttar Pradesh is 912 whereas the sex ratio of Hindu population is only 907 females per thousand males, which slightly less than the state average. On the other hand sex ratio for Muslim population is 937 which are very high as compared to state average and Hindu population. Although literacy rate as well as socio-economic condition is comparatively lower among the Muslims, in spite of these drawbacks sex ratio among Muslim population is better in favour of female. Same pattern is visible in the rural as well as urban sex ratio of Hindu and Muslim population. The main reason of rural- urban difference in sex ratio is sex selective migration from rural to urban in search of job opportunity (especially to Gulf countries by Muslim) and predominance of family migration, prejudice against female employments and also the scarcity of jobs suitable for females. Main reasons for low sex ratio are female infanticide in Hindu population and female mortality rate in Muslim population at the time of birth. In the last but not the least sex ratio in both Hindu and Muslim population is not in favour of females barring few districts which is warning signals for the healthy population growth. Government of India and Uttar Pradesh should make some policies to restore and achieve the ideal sex ratio for all in the region.

References

Chandana, R.C., 2011, Geography of Population: Concepts, Determinants and Patterns. Kalyani Publishers, Ludhiana.

Badgujar Arvind Amrut, 2017, Spatial analysis of sex ratio according to different religions in Jalgaon district, *International Journal of Applied Research*. 3(7): pp.1240-1245.

Suman Chauhan and Virender Chhachhiya, 2016, Spatial Pattern of Sex Composition in Haryana. International Journal of Interdisciplinary Research in Science Society and Culture (IJIRSSC), Vol: 2, Issue:1.

Paul and Saha, 2015, Declining Child Sex Ratio in India and its Major Correlates. International Journal of Current Pharmaceutical Review and Research Vol. 7 Issue 11.

Sangeeta Rani and Javaid Ahmad Tali, 2017, Determinants of Spatial Patterns of Sex Ratio in Haryana, India. Journal of Social Sciences. 13 (1):pp. 23.27

Alamtar Ali, 2009, Sex Composition in Uttar Pradesh: A Spatial Analysis. Panjab Geographer. Vol.5, pp.79-92.

Bhutani, Smita,1999, "Spatial Patterns of Change in Indian Sex Ratio: 1981-1991. Asian Profile, Vol.27, No.2 pp.157-168.

Census of India., 2011, Primary Census Abstract Censes of India.

●●●

NGJI, An International Refereed Journal
(NGSI-BHU, ISSN: 0027-9374/2017/1671)
Vol. 64, No. 3-4, September.-December, 2018

Characteristics of Population in the Valley Districts of Manipur, India

Ningthoujam Golson[1] and Kh. Pradipkumar Singh[2]

Abstract

The valley districts of Manipur are the most densely populated areas in the North-East India. Due to its physiography and central position, majority of the population in Manipur concentrate in the valley districts. Despite its one-tenth of the total geographical area of Manipur, the valley district of Manipur supports more than half of the state's population. The main thrust of the paper is on the size, growth and distribution of the population in the valley districts of Manipur. The data collected from the Census of India is used in calculating and analysing the problems. Various cartographic techniques have been employed to show the population growth, density, sex ratio, composition of workers, ete. for the period of 1951- 2011. The paper also compares the growth rate of Manipur with respect to valley district of Manipur. An annual exponential rate is used for computing future trends of population.

Keywords: *population, concentration, decadal growth rates, sex ratio*

Introduction

Population is an important determining factor in economic growth and development of Manipur. The growth of population is a matter of concern in the recent past. We are living in a period of unparalleled population growth (Singh, 2014) although there is sign indicating that this unusual rate of increase is coming to end in some part of the world, such as western Europe, much of the rest of the world is likely to experience a high rate of population growth for quite sometimes. Consequently, the world population has reached six billion mark. The valley districts are one of the most populated region in the north-east India. Out of total population of 28,55,794, in 2011 census 16,33,672 persons (more than half of the Manipuri people) reside in these districts. The growth of population in this area may be attributed to immigration besides excess of birth rate over death rate. There has been no time in history when people did not migrate from one part to the other or from one country to other. The reason of migration could be economic, social and political. From time immemorial there has been uneven distribution of

1. Research Scholar, Department of Geography, Manipur University.
2. Associate Professor, Department of Geography, Manipur University, Imphal.
Email: kh_pradip@rediffmail.com

world population. Distribution of population has all along been affected by the availability of natural resource, favourable climate and other factors (hanj Raj, 2004). There is wide regional contrast in the degree of concentration giving rise to highly variable densities to different part of the region. Physical factors, climate, landforms, socio cultural and demographic factors are the main sources of growth of population.

Objectives

i) to study the population caracteristics of the valley districts of Manipur

ii) to highlight the future trends of population growth

Database and methodology

The data used in this paper is collected from the secondary sources such as economic reviews, Census of India, Statistical Abstract of Manipur, books and published Literature. All the numerical values are converted into percentage. Pie-chart and wheel diagrams are used to show proportion. Graphs and choropleth maps are used to show trend and density of population. Data up to the census 2011 are employed to measure certain parameters of population. Annual exponential rate is used to calculate future predictions and population growth rate is calculated with the help of the following formula:

$$P(t) = P(O)\, e^{rt} \quad \text{.....(1)}$$

where P(t) = population at time (t)

P(o)= population at time 0

r = rate of growth

t = interval based year and terminal year

Dividing the given formula, by P (o) on both sides the given equation (1) becomes

$P(t)/P(o) = e^{rt}$ taking ln on both side we have

$\text{Ln}\ (Pt/P(o)) = rt$

$r = \ln(Pt/po)/t$

Study area

The study area comprises of four valley districts which are centrally located in Manipur namely Imphal West, Imphal East, Bishnupur and Thoubal. The total area of these valley districts is 2,238. Imphal East is the largest district having an area of 670 km2 followed by Imphal West (558), Thoubal (514 sq km) and Bishnupur (496). The study area lies between the latitude of 25°5´995´´N to 24°42´58.839´´N and longitude of 93°50´9.856´´E to 94°8´49.324´´E.

Growth of population

Growth of population refers to the change of human population in an area during the specific period of time. The growth of population in any area is an index of its economic development, socio-cultural setting, past events and political phenomena (Bhatacharyya, 2006). Thus, population growth and development are functionally interdependent. The study area had a population of 3,87,781 persons in 1951 census and increased to 5,27,758 persons in 1961. In the census of 1971, it is recorded 7,20,945 persons which is more than double of 1951 population. The rapid increase in population has been observed in the successive decades, i.e., 9,29,077, 11,85,992, 14,11,766 persons in 1981,1991 and 2001, respectively. Further, in 2011, it is found that the valley area has reached a population of 16,33,672 persons (Table 1). During the census 1951-61, the decadal growth rate of the valley was 36.1% which was very high. This is due to return of the fled persons during the Second World War to neighbouring states and hills and the same phenomenon continued up to 1971. In 1971 the growth rate was observed as 36.6% which is the highest in the valley districts, growth ever recorded (Table 2). Thereafter the decadal growth rate decreased to 28.86% in 1971-81 and 27.65% in the decade of 1981-91. It further declined to19.03% in the 1991-2001 and 17.51% in (2001-11). Considering literacy rates, low sex ratio, higher mean

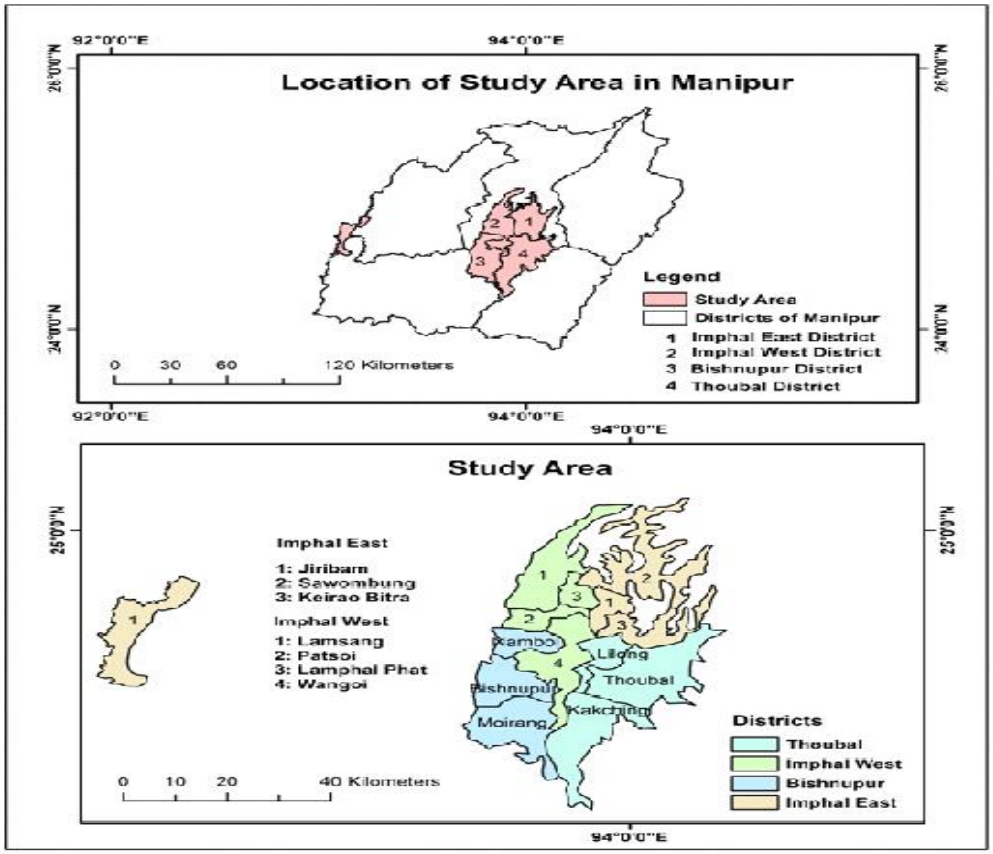


Fig.1

age of marriage, change in consumption patterns, various health intervention systems, people's awareness regarding advantage of small family norms, lesser immigration etc. resulted in lesser growth rate in the decade of 2001-11. The decadal growth rate is higher than overall Manipur (12.05%) but falls slightly below the national average 17.68% to 15.78%.

Imphal West being the centre of many infrastructure, market, hospital and variety of government establishments and state capital, people are attracted to the area for the economies gains, social and other facilities. Due to location of these facilities, employment opportunities are available significantly better than the rural area.

The hinterland is extended towards both Imphal West and East and acts as another factor for the growth of population in the area. However, migration also formed a major contributor to population growth causing disturbance to demographic composition as the migrant settlers reproduce more children than the indigenous one.

Thoubal district has also fertile agricultural land and fishing facilities that may be attributed for higher growth of population. Further, growth rate is varied between different communities of the area. Majority of the Manipuri Muslims are settle here and engaged in agricultural works. The offsprings of the muslim community have a higher than the other surrounding communities.

Majority of the people who settle in Bishnupur district are largely engaged in fishing

activities. The increasing growth rates during the preceding decades of 1961-71 and 1971-81 are due to influx of migrants from other districts, more particularly from Thoubal district.

Table 1: Districts-wise population by census years

Districts	1951	1961	1971	1981	1991	2001	2011
Imphal west	140,989	178,235	241,155	300,781	380,801	444,382	517,992
Imphal east	89,821	135,594	189,713	255,365	330,460	394,876	456,113
Bishnupur	57,340	79,005	108,306	141,150	180,773	208,368	237,399
Thoubal	99,631	134,924	181,771	231,781	293,958	364,140	422,168
Valley	387,781	527,758	720,945	929,077	1,185,992	1,411,766	1,633,672

Source: Based on Census of India (1951-2011)

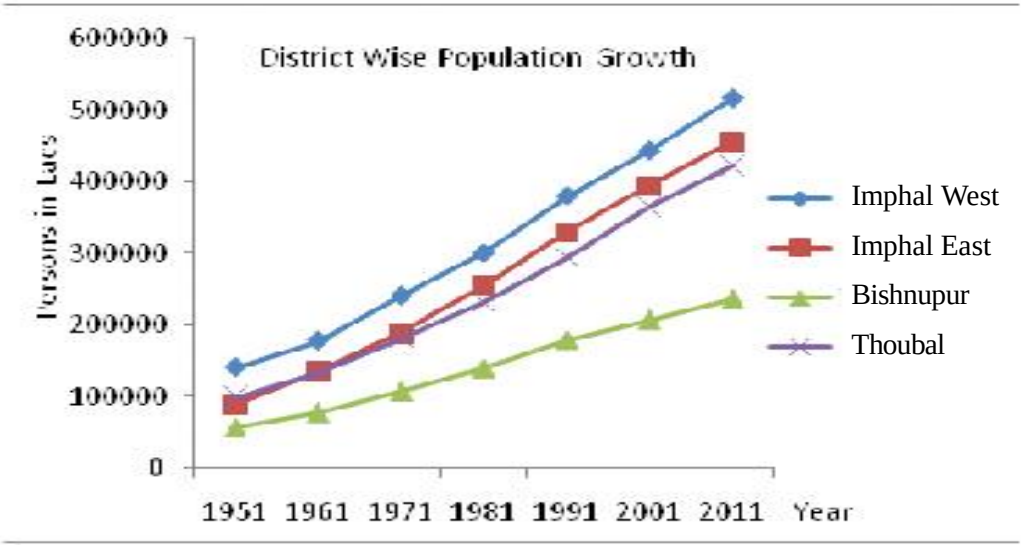


Fig. 2

Table 2: District-wise decadal growth rate in Manipur Valley (%)

District	1951	1961	1971	1981	1991	2001	2011
Imphal West	--	26.92	35.30	24.72	26.14	16.70	16.56
Imphal East	--	50.96	39.91	34.61	44.48	29.41	15.51
Thoubal	--	35.96	34.72	27.51	26.82	23.87	15.93
Bishnupur	--	37.78	37.69	30.33	27.52	15.26	13.33
Valley		36.10	36.60	28.86	27.65	19.03	15.78

Source: Census of India, 2011

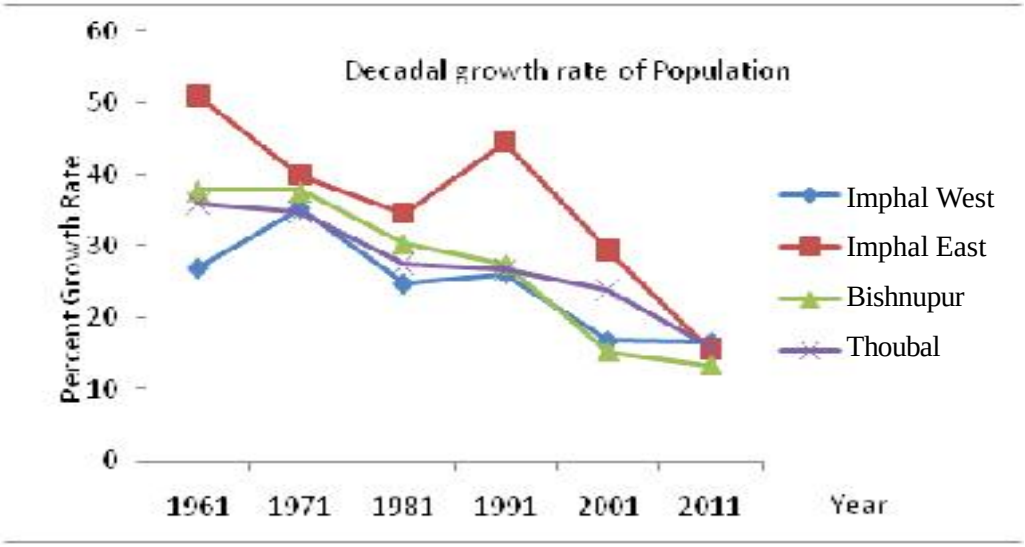


Fig.3.

Distribution of population

The distribution of the population refers to the way people are spaced over the surface of the earth. The physical and the climatic conditions, fertility of soils, transport and communication, availability of the water and power, natural resources, land, market, nature of crop cultivation, cultural and non-geographical factors, location and availability of diverse facilities etc. are the important factors that determine the distribution of population. The population distribution and density hold immense significance as the key to the analysis of the entire demographic state of a region. Population is densely concentrated on land of superior quality, which could produce large agriculture yield while other lands of inferior quality with less productivity remain sparsely populated. The valley population too is unevenly distributed due to variations of topography, soil conditions, and availability of water, availability of resource, pattern of land-use, availability of basic amenities and other infrastructural facilities, and accessibility of the area. Since the economy of the valley is primarily based on agriculture, topography and soils have greatly influenced population distribution. The population is concentrated mainly in Imphal Valley and Barak basin of Jiribam area. It is mainly due to the level led surface, productive alluvial soils, good transport facilities and sound economy which facilitate better living condition of the people. Imphal and other urban centres have grown by coalescence of many surrounding villages, whose inhabitants find ready market for their agricultural products and job opportunities in the nearby urban areas. The Imphal valley is densely populated with 57.21% of the total population of Manipur, despite only 10% of geographical area of the state due to productive soils for agriculture, trade and commerce, tertiary economy, basic amenities and other infrastructural facilities. Imphal west got the highest concentration, i.e., 18.14% of the total population of Manipur followed by Imphal East, Thoubal and Bishnupur.

Out of total population of the valley 54.50% people live in rural area and 45.50% in the urban area. Contrary to this Imphal West has 62.33% urban population and 37.67% rural population (2011). Imphal East has a rural population of 59.83% and urban population of 40.17%

(2011). Bishnupur district has 36.86% population in urban area and 63.14% in the rural area. Thoubal district has urban population of 35.85% and 64.15% of rural population.

Table 3 : Population distribution of the Study area, 2011

Districts	Population (Persons)	% of total population	% of rural population	% of urban population
Imphal East	1,456,113	15.97	59.83	40.17
Imphal West	1,517,992	18.14	37.67	62.33
Bishnupur	,237,399	8.31	63.14	36.86
Thoubal	, 422,168	14.78	64.15	35.85
Total valley area	1,633,672	57.21	54.40	45.50

Source: Census of India, 2011 and personal computation

Table 4 : Composition of rural-urban population and differential

Sub- Divisions	Rural Population (%)	Urban Population (%)	Rural-Urban Differential
Lamshang	98.2	1.8	96.4
Patsoi	69.6	30.4	39.2
Lamphel Pat	4.4	95.6	-91.2
Wangoi	45.8	54.2	-8.4
Porompat	34.2	65.8	-31.6
Sawombung	94.7	5.3	89.4
Keirao- Bitra	86.9	13.1	73.8
Jiribam	83.2	16.8	66.4
Lilong	67.1	32.9	34.2
Thoubal	62.9	37.1	25.8
Kakching	64.1	35.9	28.2
Nambol	60.8	39.2	21.6
Bishnupur	59.8	40.2	19.6
Moirang	66.3	33.7	32.6

Source: Census of India, 2011 and personal computation

Rural-urban population concentration

Urban population concentration in the study area is higher as compared to the past decade as many semi-urban areas are assuming urban character through the process of expansion of two adjacent towns and rise of a few new towns. The percentage of urbanisation is high in Lamphel Pat division of Imphal West district. Most of the government machineries, market, social and economic infrastructure lie in the area. Patsoi, Lamshang and Wangoi sub-divisions of the district have less urban population and more rural population. Imphal East is second in urbanisation and most of its urban population is concentrated in Porompat, is also a main area of expansion of Imphal city and government machinery and infrastructure.

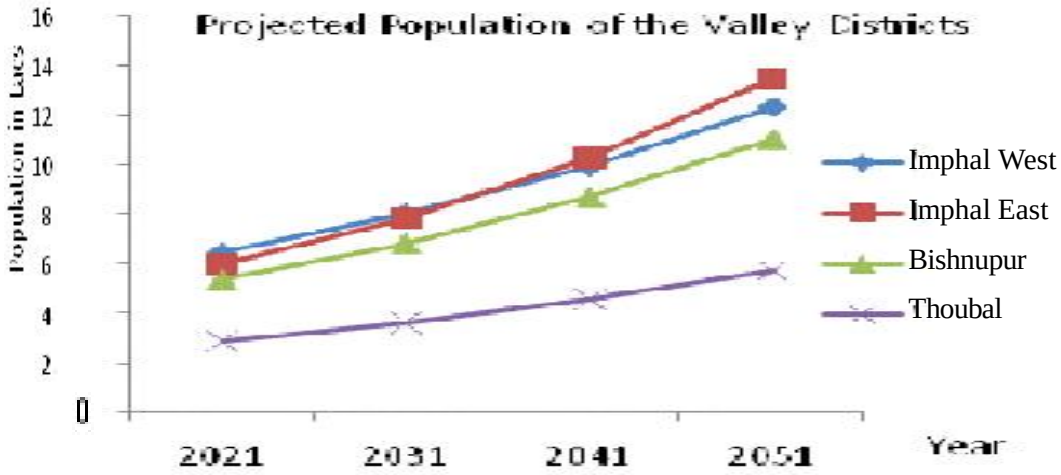


Fig. 4.

The other sub-divisions are mostly rural in nature, as most of rural people live in these areas.

Thoubal and Bishnupur districts have low growth rate in urban character due to physiographic constrains like lakes, wetland and hillocks interspersed the valley area.

Table: 5 projected Population

Districts	2021	2031	2041	2051
Imphal West	64 3,343	799,282	992,863	1 233,328
Imphal East	5 97,980	783,976	1,027,823	1,347,516
Thoubal	536,825	682,848	868,591	1,104,859
Bishnupur	286,861	361,043	454,409	,571,919
Valley area	2,065,009	2,627,149	3,343,686	4,257,622

Source : Based on census (1951and 2011), and personal computation

Annual exponential growth rate is employed to predict the future trend of population (Fig.4). By using the formula mentioned in the database and methodology section, it is found that the annual exponential growth rate of the valley is 0.023%. The annual exponential growth rate of the Imphal West is found to be 0.021% and Imphal East district 0.027% which means that at some point of time the population of Imphal East district will exceed the population of Imphal West. The annual exponential rate of Thoubal is higher than the Imphal West district which is 0.024% which indicates that at some point in future its population will exceed the population of the Imphal West. The same case is applied to Bishnupur district and at some point it will exceed to the population of Imphal East as per the result of exponential annual growth rate. Imphal East will be the first district to reach a million by the census year 2041. In 2051 the population of the valley area will be above four millions and a density of 1902 person/sq km. Ex-

cept Bishnupur, the three district will reach million figure in 2051 census on the basis of the growth from 1951-2011.

Density of population

The density of population refers to man-population ratio, which provides real pressure of population on land. The valley has a population density of 630 persons per sq.km and the hills have 44 persons. It rose to 730 persons in the valley and 61 persons in the hills per sq.km in 2011 respectively.

Table 6: Density of the population, 2001 and 2011

Districts	Area in sq.km	Density of population/km^2	Density of population
Imphal West	558	796	928
Imphal East	670	589	680
Thoubal	514	708	821
Bishnupur	496	420	479
Valley	2,238	630	730

Source: Based on Census of India 2001and 2011 and personal computation

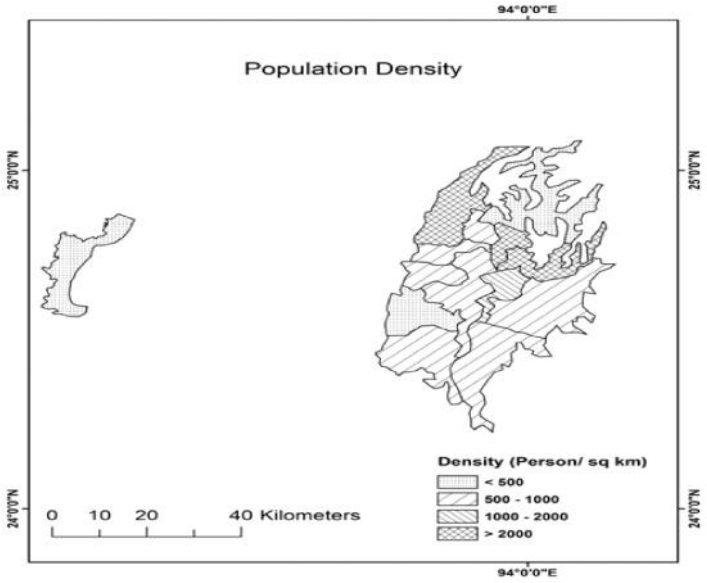


Fig. 5

Imphal West district is the most densely populated district of Manipur (2011) Thoubal is the second most densely populated district. Imphal East has the density of population of 680 while Bishnupur has lowest density of 420 persons. It may be attributed to the fact that a large portion of the area (approximately 57.00% of the total) is covered with lakes and wetlands. Imphal Valley and Barak basin (Jiribam) are more densely populated, as these are consist of fertile plains. Transport and communication system are well developed. Besides, other facilities like medical, power, market and other public utility services are better provided in these

Table 7: Subdivision wise population and density, 2011

Sub- Division	Area in sq km^2	Total population	Density/sq km
Lamshang	198	724,856	3,661
Patsoi	83	70,665	851
Lamphel Pat	60	221,422	3,690
Wangoi	178	141,049	792
Porompat	98	244,039	2,490
Sawombung	257	86,162	335
Keirao- Bitra	122	82,024	672
Jiribam	232	43,838	189
Lilong	63	87,377	1,387
Thoubal	261	199,310	764
Kakching	190	135,481	713
Nambol	114	61,882	543
Bishnupur	166	62,778	378
Moirang	216	112,739	522

Source: Personal computation based on Census

areas. Other factors for the high density of population are productive soils, industries and territorial economy with well-knit infrastructural facilities and other amenities. Migration from adjoining hill districts and other states too contributed to high density in the valley area.

Density of population of less than 500 persons is found in the sub-divisions namely Jiribam, Sawombung and Bishnupur. These regions have low population density due to many hillocks and water bodiesland and wetlands, etc. which are relatively inhospitable for human settlement. Bishnupur subdivision is largely covered with water bodies and wetlands. Sawombung lies in the periphery of plain which has many hillocks. Jiribam, despite of having large area, is filled with many hillocks interspersed by filled valley. Thus, many areas are unsuitable for human settlement. Moirang, Patsoi, Nambol, Keirao Bitra, Kakching, Wangoi and Thoubal are the areas of high agricultural potentialities wherein population density ranges between 500-1000 persons. As a consequence, main occupation of the valley population is agriculture and of allied activities. Lilong has a population density persons more than 1000 that is due high birth rate and declining death rate. Porompat and Lamphel Pat sub-divisions are part and parcel of the core of the Imphal City which attracts more people from other districts of Manipur. Although the Lamsang sub-division is located at peripheral part of the city, it encompasses 69 villages and 2 towns.

Sex ratio

The sex ratio of the valley in 2001 was 997 females per 1000 males that increased to 1015 (2011) which was more than the national average of 933(2001) and 943 females (2011). The main factor for reducing the sex ratio of the valley area is related with sex determination at the time of the conception and immigration of more male working population from outside the state during the past decades.

Table 8 : District-wise sex ratio in Manipur Valley

Districts	Sex ratio (2001)	Sex ratio (2011)	Rural sex ratio (2011)	Urban sex ratio in 2011
Imphal east	991	1,017	995	1,052
Imphal west	1,004	1,030	995	1,062
Bishnupur	993	999	1,013	1,042
Thoubal	998	1,002	994	1,007
Valley	997	1,015	1,000	1,033

Source: Computed from Census of India (2001 and 2011)

Table 9: Subdivision-wise sex ratio

Subdivision	Rural	Urban	Overall
Lamshang	1,011	1,093	1,023
Patsoi	1,019	1,035	1,024
Lamphel Pat	1,071	1,047	1,048
Wangoi	1,001	1,024	1,013
Porompat	989	1,062	1,037
Sawombung	1,009	961	1,007
Keirao- Bitra	1,009	1,025	1,011
Jiribam	950	920	945
Lilong	997	992	996
Thoubal	1,001	1,011	1,005
Kakching	998	1,011	1,003
Nambol	997	1,025	1,008
Bishnupur	1,005	985	997
Moirang	987	1,009	995

Source: Computed From Census of India 2011

Migration is sex selective in nature. However, long distance migration involves males, whereas short distance migration is characterized by female migrants. Marriage also involves the change in the sex ratio in the sense that after marriage the married ladies have to go to the house of their husband. Natural birth rate is also another factor responsible for increasing sex ratio. Urban sex ratio of the state was 1009 in 2001 which increased to1026 in 2011. Rural areas enjoy even better sex ratio as compared to the urban areas (Table 8).

Sex ratio is defined as an important indicator to measure the extent of prevailing equity between males and females at a given point of time.

Table 8 reveals that the sex ratio in the study area is gradually becoming higher. Again, it is very high compared to the national level, as the people less discriminate towards their female child. Further, freedom of women is not much restricted in social, economic and community participation. Women participate not only in household works but also other spheres of life. Moreover, in the study area, sex ratio is not much affected by migration as most of the migrated

Table 10: District wise rural and urban literacy

District	Rural literacy (%)			Urban literacy (%)		
Imphaleast	Male	Female	Total	Male	Female	Total
Imphal east	54.8	45.2	100.0	51.4	48.6	100.0
Imphal west	53.7	46.3	100.0	51.7	48.3	100.0
Bishnupur	56.5	43.5	100.0	54.7	45.3	100.0
Thoubal	57.6	42.4	100.0	55.1	44.9	100.0
Valley	55.6	44.4	100.0	52.6	47.4	100.0

Source: computed from Census of India, 2011

Table 11 : Subdivision-wise male and female literacy and differentials

	Urban			Rural			Total		
Sub-division	Male	Female	Differentials	Male	Female	Differentials	Male	Female	Differentials
Lamshang	51	49	2	59	41	18	54	46	8
Patsoi	52	48	4	56	44	12	53	47	6
Lamphel Pat	51	49	2	50	50	0	51	49	2
Wangoi	55	45	10	61	39	22	55	45	10
Porompat	51	49	2	59	41	18	52	48	4
Sawombung	54	46	8	58	42	16	53	47	6
Keirao- Bitra	66	34	32	66	34	32	58	42	16
Jiribam	55	45	10	66	34	32	57	43	14
Lilong	57	43	14	70	30	40	58	42	16
Thoubal	55	45	10	69	31	38	57	43	14
Kakching	54	46	8	65	35	30	56	44	12
Nambol	54	46	8	62	38	24	54	46	8
Bishnupur	56	44	12	63	37	26	56	44	12
Moirang	55	45	10	68	32	36	57	43	14

Source: Computed from Census of India, 2011

people more with the whole family. Not only males, female also migrate to the populated urban area for better opportunities. Preference of son could not become much important as male and female are treated equally. Communities have witnessed females are more responsible in looking after and taking care of their parents. Women empowerment is quite high in the area and the negligence toward girl is gone. Freedom of women is increasing and sex ratio is now above 1000 females as compared to previous census year. Sex ratio is higher in rural areas as compared to urban counterpart by small margin as both rural and urban people have given importance to de-discrimination in birth.

Literacy

Literacy is one of the important indicators in the level of education. Lack of education is an obstacle to the economic development of the society. Imphal West has the highest literacy rate of 86.30%. The male-female literacy ratio in this district is 54:46. In its urban areas the male lit-

eracy is marginally higher than the female literacy (Fig. 8). Despite the higher sex ratio, the female literacy ratio marginally lags behind male literary in both rural and urban area. Thoubal stood second in terms of literacy rate by 83.74%. Out of 100 literates in rural area 58 are males and 42 are females. But in the urban area, out of 100 literate persons, 55 are males and 45 are females. Imphal East has literacy rate of 81.95%. The urban male-female literacy ratio out of 100 in 2011 is 51:49, respectively. Bishnupur district has a literacy rate of 78.85%. The urban and rural male-female literacy ratio is 55:45 and 57:43 respectively (Table 13).

Urban male-female literacy gap is very low in Lamphel Pat, Patsoi, Lamshang, Nambol, Sawombung, and Kakching. The gap is low because of better sense of education is equally necessary for both male and female.

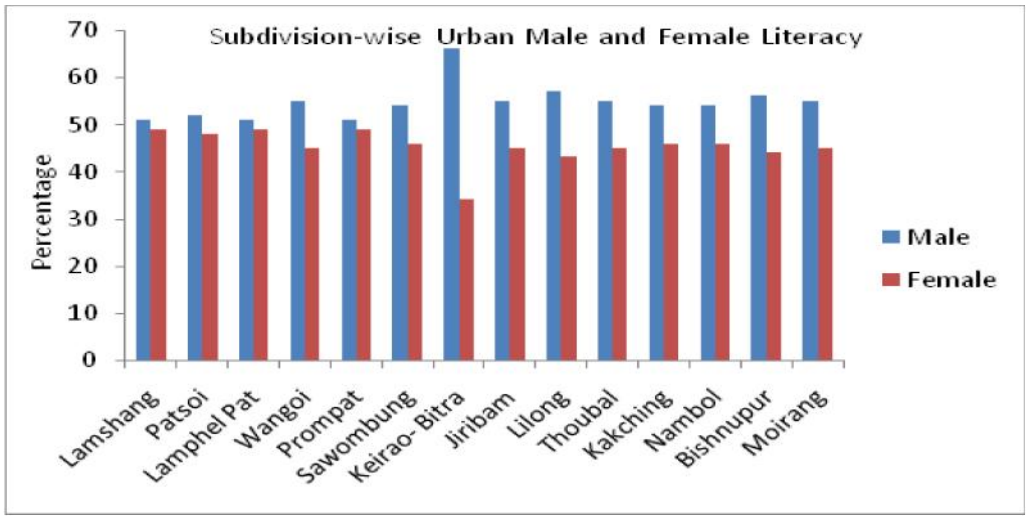


Fig. 6

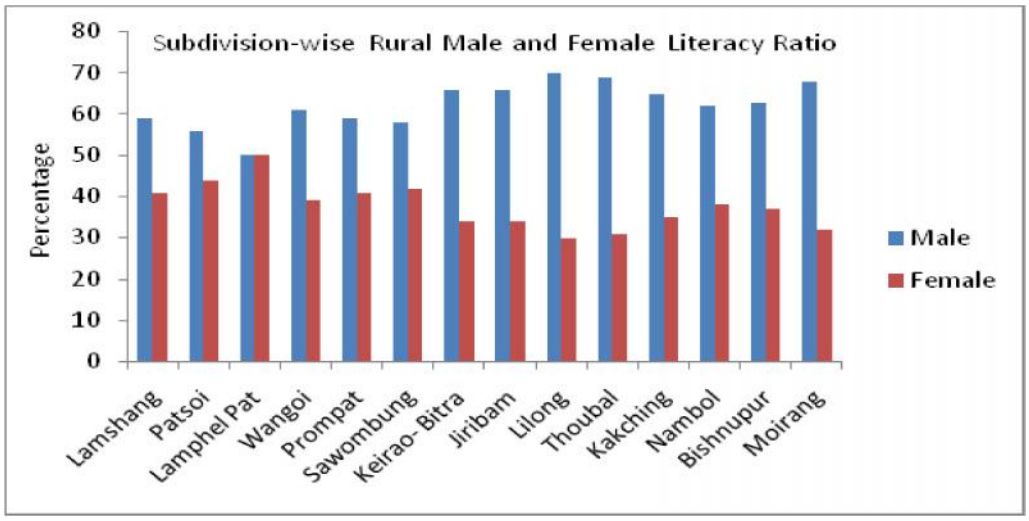


Fig.7

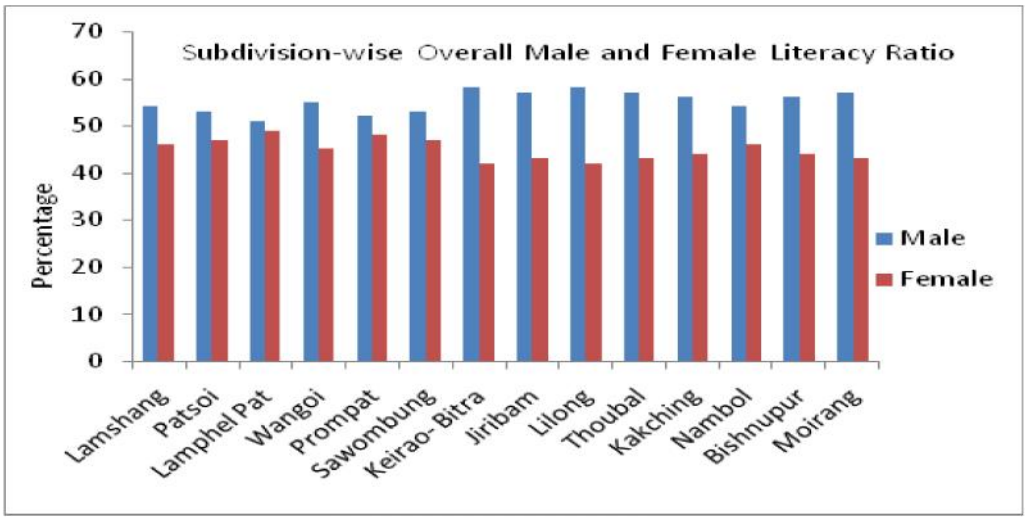


Fig. 8

No gap of importance given to any male or female. They are equal in availing every job opportunity. The urban male-female gap in the above mentioned subdivisions is below 10%. Low gap of (10-20%) is observed in the subdivisions namely Wangoi, Jiribam, Lilong, Thoubal, Bishnupur and Moirang. Keirao Bitra has higher gap of urban male-female literacy (above 20%). The rural male-female literacy gap is almost zero in the Lamphel Pat area. Whereas 10-20% gap is found in Patsoi, Sawombung, Lamshang and Porompat subdivisions and 20-30 % gap is found in the Nambol, Wangoi and Bishnupur sub-divisions. Above 30% gap of literacy in rural areas is found in Keirao Bitra, Jiribam, Lilong, Thoubal, Moirang and Kakching.

Lamphel pat is having low literacy gap as all the people who live in either urban or rural areas are aware of the importance of education as a source of knowledge-based income and other education related jobs. Most of the important educational institutions are easy to access by foot. Moreover, the different areas of subdivisions are nearer to Imphal city. High level of gap is seen in the rural area of Nambol, Wangoi and Bishnupur. These areas are inhabited by poor people who accord education equally important for male and female children due to their poor economic conditions, male are given preference if someone can manage only one out of two. Keirao Bitra, Jiribam Lilong Thoubal Moirang and Kakching have very high gap of education. The reasons are due to high conservative nature along with poor economic conditions of some communities despite affordable families for education of both male and female children. Poor economy is also playing an important rolein shaping the gap of educationl sector.

Distribution of workers and non-workers

The workers can be classified into main worker and marginal worker categories. Main workers are those who worked for a major period of the year (183 or more days) and the marginal worker are those who worked for less than 183 days in a year. Whereas, non-workers are those who are engaged in household duties such as student, retired persons, dependents, and other who do not participate in any productive work. Out of 100 main workers in the valley, 28 are concentrated in the Imphal East district, 32 in 26 in the Thoubal district and 15 in the Bishnupur district.

In terms of marginal worker, out of 100 persons in the valley 28 lies in the Imphal East district 26 in Imphal west 17 in the Bishnupur and 32 in the Thoubal.

In terms of non-worker, Imphal East has 28.39 of the total population, Imphal West has of 33.10% of the valley total non-worker population.

Table 12: Worker and non-worker population in valley of Manipur

Districts	Main worker 2001	Main worker 2011	Marginal worker 2001	Marginal worker 2011	Non worker 2001	Non worker 2011	Total	Total 2011
Imphal east	26.48	28.09	25.24	25.74	29.39	28.39	27.91	27.91
Imphal west	32.05	31.85	24.58	26.64	32.88	33.10	31.69	31.70
Bishnupur	13.79	14.46	17.13	17.43	14.65	13.85	8.84	14.45
Thoubal	27.68	25.60	33.03	32.18	23.06	24.65	31.55	28.84
Valley	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

Source: Census Publication of the Office of the Register General, India

14.65% in Bishnupur and 23.05% in Thoubal districts constitute the total non working population of the valley. Most of the workers are concentrated in the Thoubal district followed by Imphal West, Imphal East and Bishnupur in 2001. Thoubal being an area of agriculture and fishing activities, sizable population is engaged in these activities. But in 2011, the Imphal West has the largest concentration of workers as variety developmental works and business activities are taking place followed by Imphal East, Thoubal and Bishnupur (Table12).

Conclusion

The population of the study area was 3,87,781 persons during the 1951 census. It reached to 16,33,672 persons in 2011. At the early stage of census starting from 1951, the growth of population in the valley was very high through natural birth rate and migration and in the latter parts it declined due to awareness of population pressure on land, non-availability of land resources, attention to medicine, late marriage and awareness with benefits of small family. This is a good factor and reflects sustainable growth rate of population in the valley. As usual, the population density will be always higher in the urban centres due to concentration of various infrastructure facilities, marketing and other public amenities. By having such facilities, the population attracted to Imphal and its surrounding outgrowth areas. The growth of urban population will affect primary activities as many areas of agriculture have transformed in to business centres in Imphal area. It will increase the volume of solid waste in Imphal particularly at public places, along the road sides, rivers etc. Despite sex ratio is more or balanced one, the females in the valley lag behind in literacy. But positive fact is seen and a few years after, male-female literacy rate is near to equivalent which is a good sign for development and women empowerment. The composition of workers is mainly in primary activities as many people depend on agriculture and allied activities. Due to urban growth and population pressure, agricultural land will shrink and people's participation in primary sector will gradually decline in future. The population is expected to increase further and some of the valley districts may possibly reach above 1 million figures in 2051 except in Bishnupur.

Reference

Banu, Nafisa and Rawat Kaur Surendra, 2015, Regional disparities in determinants of educational

status of West Bengal, India, *ISOR Journal of Humanities and Social Science*. Vol 20 issue 4 pp 32-39.

Banu, N., 2015, Trends and pattern of Literacy distribution in West Bengal, *Acme Journal of Multidisciplinary Research*, Vol 3 No 2 pp 63-73.

Bhattacharyya,N.N., 2006, *Manipur: Land People and Economy*, Rajesh Publications.

Census of India Manipur Pdf

Chipman, A and Morrisson, E., The Impact of Sex - Ratio and Economic status on local birth rate""The Royal Society Publishing, http://dx.doi.org/10.1098/9561.2013.0027.

Cincotta, P. Richard and Engelman Roberts., 1997, *Economic and the Rapid Change: The influence of Population Growth*, Public Action International.

Hanj, Raj. 2003, *Population Studies*, Surjeet Publication, Delhi 110007, India, p-41.

Economic survey Manipur, 2008-9.

Economic Survey Manipur 2012-13.

Puskarna, Mridula., 2017, Literacy Pattern in Punjab: Rural Urban Differentials, *ISOR Journal of Humanities and Social Science*, Vol :22 Issue :7 ver 5 July 2017 pp 32-39.

Sangwan, Singh Randhir and Sangwan Sneh, 2000, *Sex ratio: Trend in Rural-Urban Differential*, Transaction Vol: 31 No : 2. pp 167-180.

Singh, Nabakumar Th., 2010, *Geography of Manipur, Rajesh Publications*, New Delhi, p-117.

Singh, Mohan., 2011, *Population Geography*, ABD Publishers, New Delhi, pp-41-42.

Statistical Yearbook, 2016, Imphal West District, Manipur.

Statistical Yearbook, 2015, Bishnupur District Manipur.

Statistical Yearbook, 2015, Imphal East district Manipur.

Statistical Yearbook, 2015, Thoubal district Manipur.

Statistical Yearbook Manipur, 2015.

●●●

NGJI, An International Refereed Journal
(NGSI-BHU, ISSN: 0027-9374/2017/1677)
Vol. 64, No. 3-4, Sept.-December, 2018

A Study in Population Growth and Characteristics of Patna Urban Agglomeration

Anjani Kumar[1] and R. S. Yadava[2]

Abstract

The study of population growth and demographic characteristics of a city in the spatio-temporal framework provide scope to understand evolutionary processes of an urban settlement. The present work has examined the urban agglomeration, in geographic perspective, which constitutes a significant component of Indian urban scenario. In comparison to the global urban scenario, India's lower urbanisation contains arelatively large proportion of the urban population in its metropolises and urban agglomerations. Patna, the capital of Bihar, has witnessed multiple political, economic, social and religious movements for several centuries which gradually resulted ina diverse pattern of growth and a complex demographic structure. The city has grown linearly along the southern bank of river Ganga, but under the influence of recent global urbanisation trend, past few decades, it is experiencing the growth in a haphazard manner. The study uses the secondary sources of data.Census of India data from different decades viz. 1971, 1981, 1991, 2001 and 2011 has been used to examine the sequential change in population growth and demographic characteristics. Attempts are made to analyse the correlation between literacy and sex ratio as well as literacy and working population since these are the prominent indicators of urban and social development. Spearman rank difference method has been used to get the coefficient of correlation. Final administrative map down to ward level has been prepared using raw maps made available by different authorities and government reports. The thematic maps have been prepared using census data.The present work is an endeavour to understand impact and causes of sequential population growth and demographic characteristics of Patna urban agglomeration using descriptive as well as geoinformatics approach of study.

Keywords : *urban agglomeration, population growth,density of population, population characteristics, working population.*

Introduction

The concept of urban 'agglomeration' in India was introduced in the 1971 census. Census of India defines urban agglomeration as a continuous urban spread comprising a town with

1. Senior Research Fellow, Department of Geography, Institute of Science, BHU, Varanasi, Uttar Pradesh, 221005,Email: anjani.bid.502@gmail.com
2. Professor, Department of Geography, Institute of Science, BHU, Varanasi, Uttar Pradesh, 221005.

adjoining urban outgrowths or towns with physical contiguity and their outgrowths, if any, of such town/towns. The area of an urban agglomeration may change from one census to another as evident from the changing boundaries of the central city as well as other constituents owing to the very expanding nature of the urban entity and also the incorporation of new component units. Thus, the following two conditions have been taken into account to consider an urban area as an urban agglomeration:

(i) The core town or at least one of the constituent towns should necessarily be a statutory town, and

(ii) The total population of all the constituents of an urban agglomeration should not be less than 20,000 as per 2001 census of India.

Out of the total 14 urban agglomerations in Bihar, Patna is the largest with a population of 2 millions+, which makes it the 18th most populous city in India (Census, 2011). According to census 2011, the Patna urban agglomeration (henceforth PUA)comprises of 1 Patna Municipal Corporation, 2 Badalpura (OG), 3. Patliputra housing colony (CT), 4. Phulwari, sharif (NP), 5. Nohsa (CT), 6. Danapur Nizamut (NP), 7. Danapur Cantonment (CB), 8. Khagaul (NP) and 9. Saidpura (CT).

Urban population growth is defined as the relative or absolute increase in the number of people who live in towns and cities. The rate of urban population growth depends on two aspects. First, the natural increase of the urban population and second, the population gained by urban areas through both in-migration and the reclassification of rural settlements into cities and towns.The expansion of an urban settlement into the surrounding area may also be considered as urban growth.It may be considered as an indicator of the country's economic condition as the urban growth has a direct bearing on the country's economic development. The more the urban area grows, the more employment it generates and in this way economic growth takes place.

Study area

Patna, the capital of Bihar state, is a historical city with its glorious ancient past. It is located between 25° 30' and 25°40' North latitudeand 85° 0' and 85° 15'East longitude and attains an elevation of 53 metres above mean sea level. The city lies on the south bank of the Ganga river and has a population of 2,049,156 (census 2011).The city is situated in a high-risk seismic zone, as well as a flood-prone zone, particularly concerning the backswamps of Punpun and Ganga rivers. To counter flood in the city embarkments have been made, but during the monsoon, spillover from the Ganga frequently inundates large parts of the city.The average annual rainfall received by the area is around 1076 mm that mainly occurs during the monsoon season. The climate of the area is by and large sub-humid monsoon type.

There exist several administrative units (ULBs) relating to the city, including the Patna Regional Development Authority (PRDA), Patna district, the Patna Urban Agglomeration Area (PUAA), and the Patna Municipal Corporation (PMC).The area of jurisdiction of PUAA covers 142.46 sq. km, of which the PMC corresponds to 107.62 sq.km. For the City profile, Patna will be considered the area of the PUAA, and wherever possible, statistics will correspond to this area only. Patna is surrounded on three sides by rivers, which have constrained its growth within their limit.The city has grown in a linear fashion on either side of the main road (Ashok Rajpath) running from east to west on a ridge, almost parallel to the bank of the Ganga river. The axial growth stretches east-to-west 24 kilometres. Before the new By pass road was built, the breadth on average of the city was 2.5 kilometres. It was beginning of the 20th century when the development of the city started taking place in a planned manner. During the

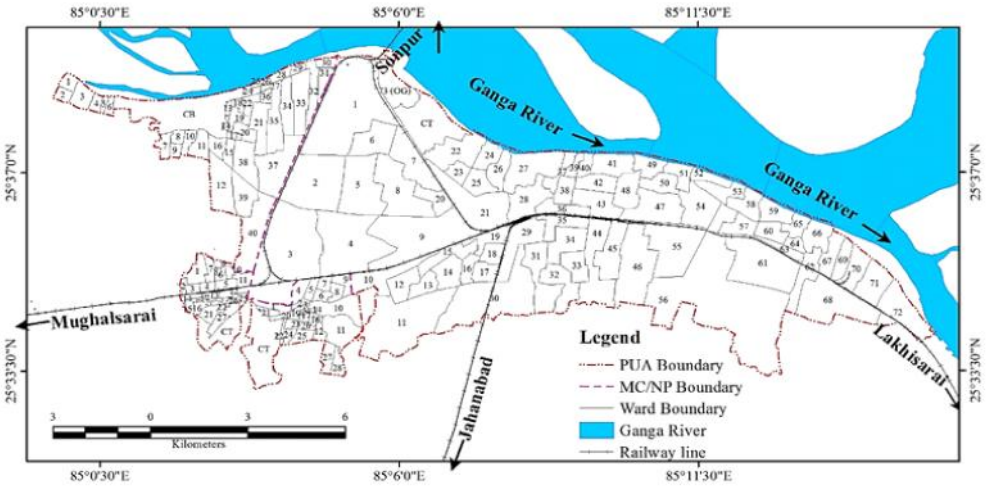


Fig. 1:Ward map of Patna Urban Agglomeration

British colonial rule, monumental edifices such as the Patna Museum or the High Court were built in the distant west of the old city, which is known as the New Capital Area. Thus, Patna is divided into three areas - an old eastern city (Patna City), a central area extending from Mahendru to Patna-Gaya road, and the western New Capital Area.

Patna is a significant commercial growth centre, for the import and export of vegetables and food grains, and a vital warehousing location for a variety of goods, due to its riverine position. The concentration of industrial activities in Patna is other wise low. However, few industries exist beyond such as counted steel casting units, a few cotton mills, some electronics, etc. Cottage industries including leather and footwear, fabrication, pottery, carpentry, blacksmiths, and copper smiths, as well as brick-making for construction of buildings and local use do exist. The informal sector of employment in Patna is quite significant. It involves mostly lower-level services, although there are opportunities of petty commodity production, rag picking, scavenging, and recycling. According to official figures, it comprises more than 30 per cent of the workforce. Despite in general stagnant and unproductive nature of the urban economy, the per capita gross domestic product of Patna is significantly higher than Bihar's per capita GDP. Overall, Patna is responsible for over 20 percent of Bihar's economic production.

Objectives

1. To study the population growth of the PUA with its constituents over fifty years.
2. To examine the spatial variation of population characteristics of the PUA.

Database and methodology

The study is entirely based on secondary sources of data. Available literature, Survey of India topo-sheets, Censuses 1971, 1981, 1991, 2001 and 2011, and government reports have also been used as secondary data.The base map has been prepared using scanned maps obtained from CDPs, Bihar administrative atlas from Census 2011 and toposheet no. 72G/2. The data storage, analysis and presentation have been performed with the help of MS-Excel 2016 and SPSS 22. The demarcation of administrative divisions and preparation of different thematic maps, such as population density and literacy

maps have been done in ArcGIS 10.0 environment.

Urban area, population density and growth rate

According to census 2011, the total administrative area of PUA is 142.46 sq.km., out of which Patna Municipal Corporation covers 107.69 sq.km. The area under major constituents keeps changing as per the classification of the urban area. Patna had attained the status of municipality in 1961.The following table represents the area under the major constituents of the agglomeration during different census year starting from 1961.

Table 1:Area (sq.km.) of Major constituents of Patna Urban Agglomeration

S. No.	Major Constituents	1961	1971	1981	1991	2001	2011
1	Patna (M Corp.)	57.83	71.69	87.05	107.08	108.34	107.69
2	Pataliputra Housing Colony (CT)						0.64
3	Danapur Nizamat (NP)	12.85	11.76	11.63	11.63	11.63	16.41
4	Danapur Cantonment (CB)	3.50	3.42	3.42	3.42	3.42	3.42
5	Khagaul (NP)	5.69	3.66	3.66	3.66	5.32	3.66
6	Saidpura (CT)						1.66
7	Phulwari Sharif (NP)		6.48	6.48	6.48	6.48	6.48
8	Nohsa (CT)						2.50
9	Patna Urban Agglomeration	79.87	97.01	112.24	132.27	133.53	142.46

Source: Based on population enumeration data and district census handbook,2011.

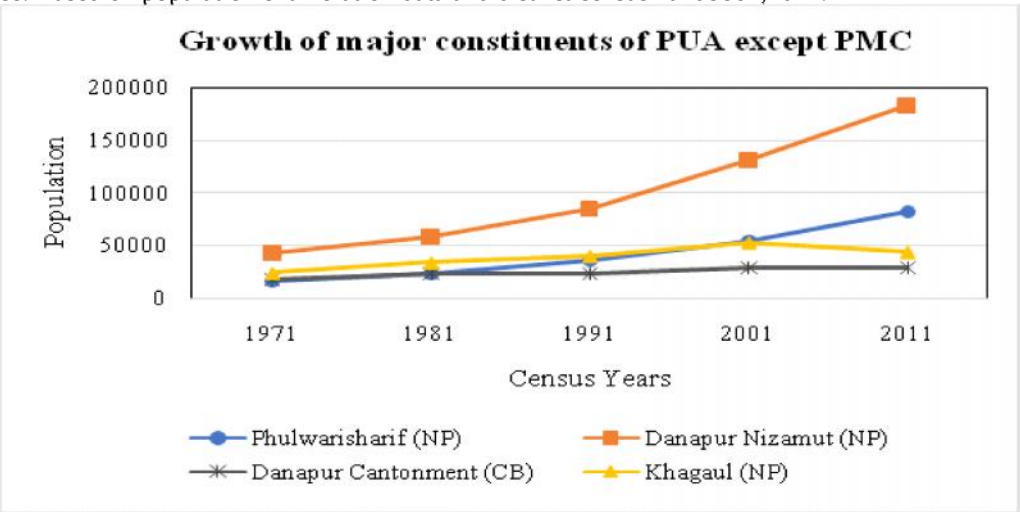


Fig. 2: Growth of population in major constituents of PUA.

Source: Based on A-series final population data, Census of India, 2011.

The population of Danapur Nizamut (NP) shows a rapid growth during 2001-2011 while Khagaul (NP) has registered a slightly decreasing growth rate due to the emergence of sepa-

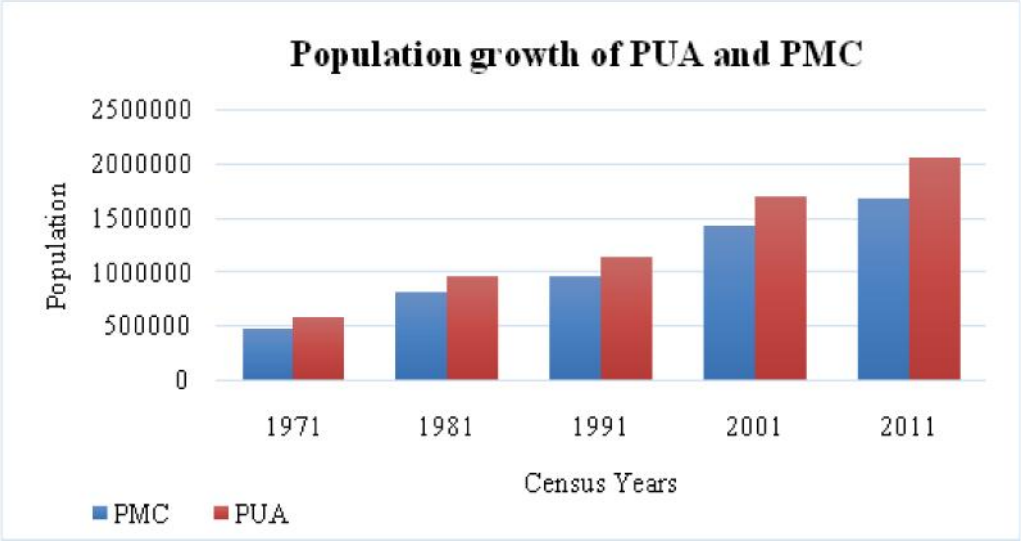


Fig. 3: Population growth of PUA and PMC.

Source: Based on A-series final population data, Census of India, 2011.

rate census town Saidapura carved out from it.

The Population density of the agglomeration is 14,384 persons per sq. km. (census, 2011). The significant change in population density is observed during census 1971-1981 and 1991-2001,i.e. 2,559 and 3,941 persons per sq.km. respectively. During 1991-2001, excepting Khagaul, all the major constituents of the agglomeration experienced a sudden jump in population density. It was the year 1991 when India adopted the bodies of trade-driven economy and joined globalisation, liberalisation and industrialisation. Due to this, the small and medium-scale industries and raw material warehouses suddenly increased in the urban areas, which worked as a pull factor for population growth through migration. The exceptionally low population density of Khagaul, during census 2001, is due to the expansion of 1.66 sq.km. within its jurisdiction.

Table 2: Population density (persons/sq.km.) of majorconstituents of PUA.

S.No.	Major Constituents	1961	1971	1981	1991	2001	2011
1	Patna (M Corp.)	6,289	6,598	9,308	8,891	13,178	15,640
2	Pataliputra Housing Colony (CT)	-	-	-	-	-	5,517
3	Danapur Nizamat (NP)	2,736	3,630	5,046	7,276	11,279	11,117
4	Danapur Cantonment (CB)	4,302	5,058	6,884	6,869	8,256	8,399
5	Khagaul (NP)	3,611	6,630	9,334	11,053	9,080	12,121
6	Saidpura (CT)	-	-	-	-	-	4,453
7	Phulwari Sharif (NP)	-	2,456	3,505	5,420	8,249	12,614
8	Nohsa (CT)	-	-	-	-	-	6,672
9	Patna Urban Agglomeration	5,451	5,932	8,491	8,619	12,560	14,384

Source: Based on A-series final population data, Census of India, 2011.

According to census 2011, Patna urban agglomeration is experiencing a population growth of 20.68% which is far less than that of 48.93% in 2001. It shows that the impact of economic reforms of 1991 was much prominent in the agglomeration. The major constituents of the agglomeration also show the same pattern, which can be examined in table 3.

Table 3: Population growth (%) of Majorconstituents of PUA.

S. No.	Major Constituents	1971	1981	1991	2001	2011
1	Patna (M Corp.)	30.36	71.25	17.50	49.75	17.60
2	Pataliputra Housing Colony (CT)	-	-	-	-	-
3	DanapurNizamat (NP)	21.43	37.45	44.19	55.03	39.07
4	Danapur Cantonment (CB)	14.88	36.10	-0.23	20.19	1.73
5	Khagaul (NP)	18.09	40.78	18.42	30.78	-16.15
6	Saidpura (CT)	-	-	-	-	-
7	Phulwari Sharif (NP)	-	42.69	54.65	52.18	52.93
8	Nohsa (CT)	-	-	-	-	-
9	Patna Urban Agglomeration	32.18	65.61	19.62	48.93	20.68

Source: Based on A-series final population data, Census of India, 2011.

Household size

The average household size of Patna urban agglomeration is six persons per household. Except Patliputra housing colony (CT) that is having an average HH size of 5, all significant constituents follow the agglomeration. At ward level, 22 wards are having an average of 7 and above, among which 17 wards fall in Danapur Nizamut (NP), 4 in Phulwari sharif (NP) and only one in Patna municipal corporation. It shows that the area is much crowded regarding persons living under a single house. It shows a rapid rate of urbanism and urbanisation. Badalpura (OG) of Patna registers a lower average household size of 4, which is due to the reclassification of its part in neighbouring wards of Patna municipal corp. Other than Badalpura, 35 wards are having HH size below the agglomeration average,i.e.five persons, out of which 22 wards fall in Patna municipal corporation, 10 in Khagaul (NP), 2 in Danpur Nizamut (NP) and 1 in Patliputra housing colony. Rest all the ward of the urban agglomeration register the same average as that of agglomeration, which can be examined through fig. 4.

Work participation ratio and working population structure

The percentage of the total workers (main and marginal) to the total population is defined as work participation ratio (Census of India, 2011). According to census 2011, the Patna urban agglomeration has a work participation ratio of 29.80%. Badalpura (OG) has the highest ratio of 70.67% as the area is rapidly developing from rural to housing colonies in the city. The lowest ratio,i.e. 25.66% is of Phulwari sharif (NP) that is due to its fringe area characteristics.

Fig. 5 reflects that the areas having high work participation ratio (above 30%) mostly lie inside Patna municipal corporation. This area is the centre of the agglomeration and oldest among all the constituents. It inherits all the important characteristics of an urban settlement. Phulwari Sharif (NP), Khagaul (NP) and Danapur Nizamut (NP) have comparatively low work participation ratio, due to their haphazard development. These constituents are still possessing

some of the rural characteristics where dependency rate use to be much higher than the urban area. Fig. 6 shows the working population structure of the population in major constituents of the PUA. In comparison to PMC, all other constituents have comparatively higher percentage of Agricultural labourers in the working population.

Sex ratio

Sex ratio is the absolute number of females per thousand males in a given population (Census of India, 2011). As per the census of India, it is calculated as females per thousand males. The sex ratio of Patna urban agglomeration is continuously improving due to improvement and expansion of urban amenities and increasing awareness toward education. As per census 2011, Patliputra housing colony has the highest sex ratio, i.e. 935. Since Danapur is a Cantonment Board, it is obvious to have a low sex ratio, which is proved by its sex ratio, i.e. 784. In PMC, Badalpura (OG) registers the lowest sex ratio of the agglomeration, i.e. 630, due to its minimal population size of 75 people with the highest work participation ratio, i.e. 70.67%. It indicated that the Badalpura (OG) is developing as a housing colony for working class people adjacent to Patliputra housing colony. The sex ratio at ward level can be examined through fig. 7.

Table 4: Sex ratio (females/1000 males) of major constituents of PUA.

S. No.	Major Constituents	1961	1971	1981	1991	2001	2011
1	Patna (M Corp.)	769	793	812	825	833	885
2	Pataliputra Housing Colony (CT)	-	-	-	-	-	935
3	Danapur Nizamat (NP)	900	866	883	861	890	883
4	Danapur Cantonment (CB)	750	776	723	781	785	784
5	Khagaul (NP)	833	830	855	866	876	888
6	Saidpura (CT)	-	-	-	-	-	895
7	Phulwari Sharif (NP)	-	879	878	888	889	908
8	Nohsa (CT)	-	-	-	-	-	894
9	Patna Urban Agglomeration	782	801	817	830	840	885

Source: Based on A-series final population data, Census of India, 2011.

Child sex ratio (0-6 years) has been defined as the number of females in the age group of 0-6 years per 1000 males in the same age group in the population. The child sex ratio of the agglomeration is 880. Among the major constituents, Patliputra housing colony provides the most drastic result, i.e. 763, while its standard sex ratio is highest among all, i.e. 935. It means that despite high literacy and percentage of working population, female foeticide is prominent in the area. Fig. 8 shows the ward level status of child sex ratio of PUA.

Literacy

The literacy rate of population is defined as the percentage of literates to the total population aged seven years and above. According to census 2011, PUA attained the effective literacy of 82.73% with male literacy 86.95% and female literacy 77.96%. Among major constituents, Patliputra housing colony have the highest literacy of 95.48% which shows that northern part of Patna municipal corporation, along the river Ganga, is well developed and possesses almost all favourable demographic characteristics of an urban area. The lowest literacy rate,

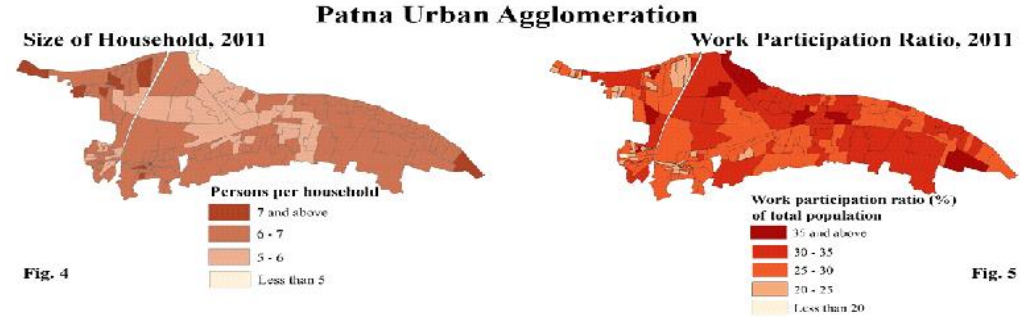


Fig. 4 Fig. 5

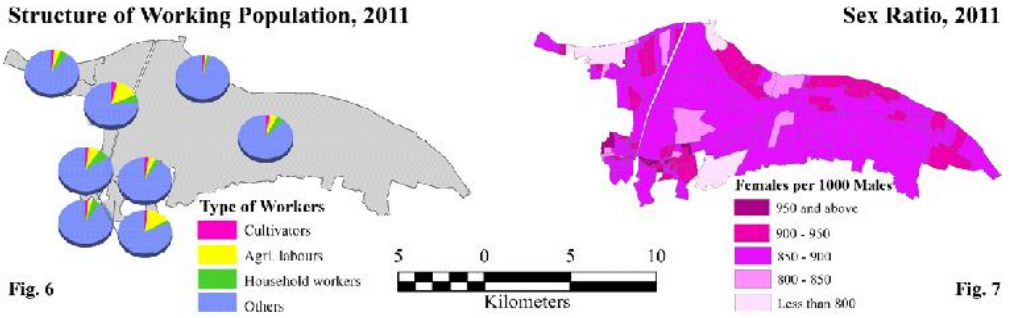


Fig. 6 Fig. 7

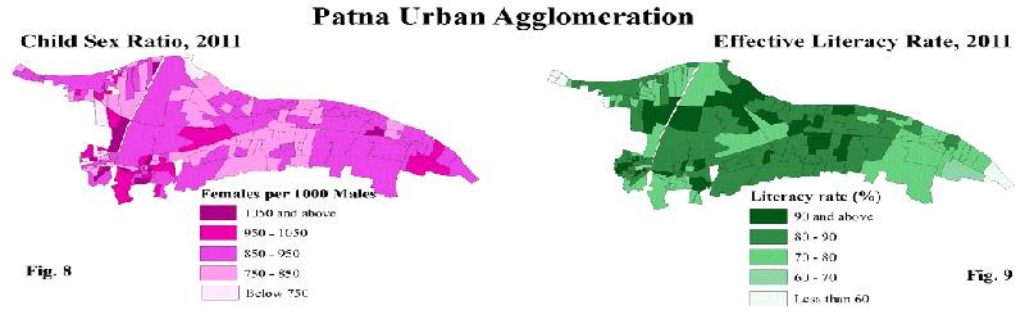


Fig. 8 Fig. 9

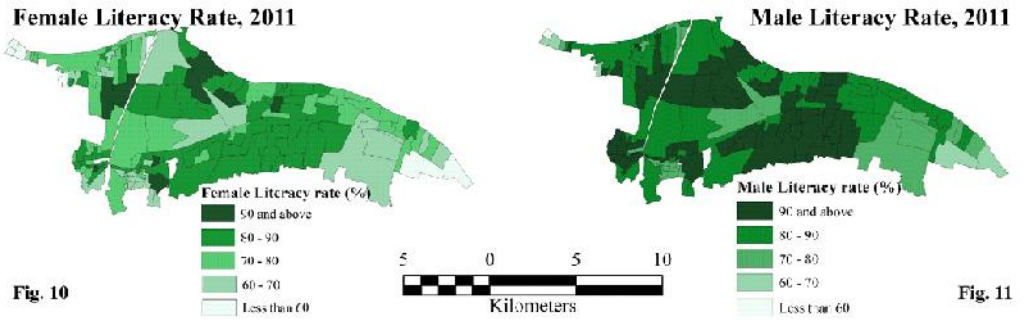


Fig. 10 Fig. 11

i.e. 75.47% has appeared in Saidpura (CT) because the area lies in the fringe zone of the agglomeration, which still has to certain extent rural characteristics.

From fig. 9, it is easily distinguished that easternmost part of the agglomeration is relatively low in literacy. The small-scale and household industry is the main reason behind this phenomenon. The whole family usually get involved in the work, and that is why they do not go to receive education rather than prefer to become a helping hand in the family. Rest parts of the city have comparatively higher literacy due to involvement of people in the activities related to secondary and tertiary sector. They prioritise to make themselves skilled to have a good earning, resulting in a better living and proper life style. The western and southernmost fringe of the agglomeration is just a result of leap frog development. So, even being a part of the urban area, they still carry rural characteristics and register lower literacy rate. Fig. 10 and 11 shows female and male literacy rate at ward level, which clealry indicate disparity among female and male literacy.

Relation between literacy and sex ratio

There does not exist a significant relationship between literacy and sex ratio, which can be examined from the fig. 7 and 9. The scatter plot in Fig. 12 also shows the same characteristics as the line is almost parallel, which means that the variables do not affect each other and are acting independently. It is due to the diverse nature of the population. The fringe part of the city possesses rural characteristics while middle

Table 5: SPSS output for Spearman Rank difference correlation.

		Sex Ratio
Literacy	Correlation	.034
	Coefficient Sig. (2-tailed)	.660
	N	172

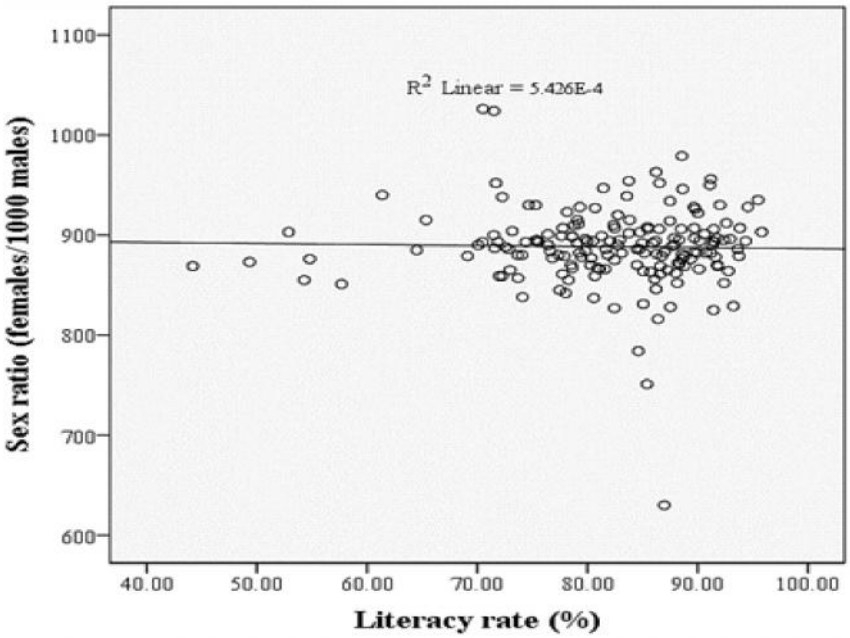


Fig. 12 : Scatter plot between literacy and Sex ratio.

part is inhabited by the middle class, mostly practising traditional customs and having the orthodox type of mentality. It mainly affects the salient demographic characteristics of the city.

Relation between literacy and working Population

Due to mixed rural-urban characteristics of the agglomeration, the correlation between literacy and working population is significant but weak i.e. 0.119 calculated at 0.01 (99%) level of significance. The same can be verified from the scatter plot for literacy and sex ratio. The older part of the city is mostly engaged in primary activities like agriculture, animal husbandry and secondary activities like brick kiln, household manufacturing, small-scale industries. These activities are not much influenced by literacy as the majority of the working population attained very low level of literacy.The western part, comparatively modern is mostly engaged in tertiary activities like service sector jobs which usually needs literate people. However, the majority of these workers constitute floating population of

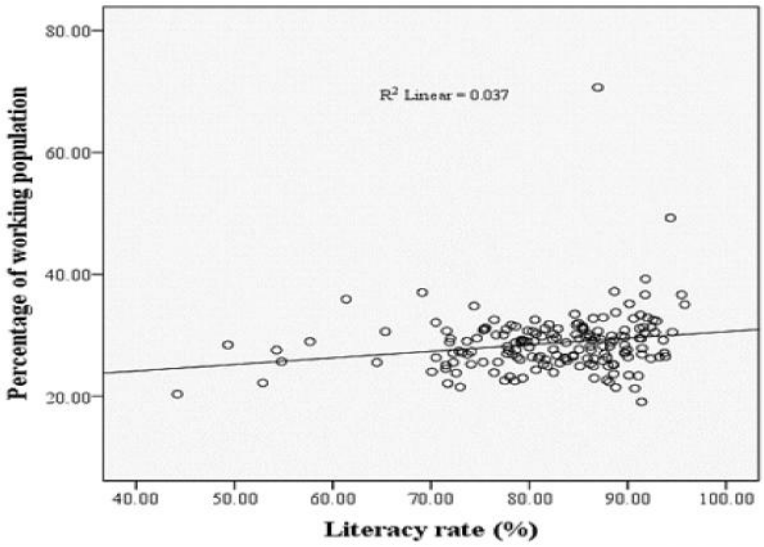


Fig. 13: Scatter plot between literacy and working population

Table 6: SPSS output for Spearman Rank difference correlation.

		Working Population
Literacy	Correlation Coefficient	0.199**
	Sig. (2-tailed)	.009
	N	172

the city. They live in nearby areas of the city and remain beyond ambit of census data.

Conclusion

Form the study, it is clear that Patna still possesses rurban characteristics. Due to this phenomenon demographic characteristics either do not have significant relation or have significant but weak relation among different variables such as literacy and sex ratio or literacy and working population as happens in case of other metropolitan cities. The only reason for the development of the city is its administrative status, i.e. the capital of the state. The city is getting flooded by the middle-class population rapidly from near by areas, who are still burdended with orthodox mentality that is contrary to the ideal character of any metropolitan city. The eastern part of the city is quite ancient one where pri-

mary and secondary activities are found in general. The city is continuously growing westward which can be revealed by tall buildings and development of proper transportation network. The major problem of the city for planners is leapfrog development, which acts as an obstacle for city planning and development. Strict policy measures are needed to counter the unregulated expansion of the city, adversely affecting nearby agricultural area that are causing land and environmental degradation.

References

Bihar Urban Development Agency, 2006,CDP for Patna under *JNNURM*. NEW Delhi: Infrastructure Professionals Enterprise (P) Ltd.

Census of India, 2011, *Final Population Totals, 2011*. New Delhi: Census of India.

Census of India, 2011, *District Census Handbook, Patna*. Bihar: Directorate of Census Operations.

Census of India, 2011, *Administrative Atlas Bihar, Vol. 2*. Bihar: Directorate of Census Operations.

Government of Bihar, 2014,*CSP Khagaul Executive Summary*. Patna: SPUR, UD and HD

Government of Bihar, 2014, *CSP Danapur Executive Summary*. Patna: SPUR, UD and HD

Government of Bihar, 2014, *CSP Phulwarisharif Executive Summary*. Patna: SPUR, UD and HD.

Paiser, R.B., 1989, Density and Urban Sprawl. *Land Economics*, 65(3), pp. 193-204. USA: University of Wisconsin Press.

Rodgers, D. and Satija, S., 2012,Understanding the tipping point of urban conflict: the case of Patna, India. *Understanding the tipping point of urban conflict: Violence, cities and poverty reduction in the developing world*.UK: The University of Manchester.

Singh, A.K., 2016, *Dynamics of urban development in less developed states of India*: A special reference to the state of Bihar. Kent, UK: Urban Studies Group NIEA.

●●●

NGJI, An International Refereed Journal
(NGSI-BHU, ISSN: 0027-9374/2017/1670)
Vol. 64, No. 3-4, September.-December, 2018

People at the Centre
Development, Resource and Displacement

Ravi S. Singh [1]

Abstract

The development discourse has been continuosly envolving, especially since the mid-20th century. The known literature clearly indicates how people have been struggling since historical times for their existence, survival, and well-being and welfare. The man-nature relationship in one hand, and the nature and intensity of struggles on the other have undoubtedly undergone remarkable change. The present article looks at the relationship between development-resource-environment and the current development practices which impact both people and environment adversely, conflicts included, from a critical perspective. It also addresses the bigger problem of displacement of people from their places, mostly involuntary, triggered together by development projects and disasters, and the state's response to it. The analysis attempted leads to the conclusion that displaced persons are not given sufficient and proper attention as revealed by the higher percentage of backlogs in rehabilitation and resettlement and meagre compensation. Every displacement, whether as fallout of development process or deteriorating environment caused disasters, requires appropriate and timely state intervention by the state as well as civil society for effective redressal of the problems faced by the affected people.

Keywords: *development, displacement, environment, globalisation, rehabilitation, resettlement, state policy*

Introduction

Developmental concerns have occupied the centre stage of the global discourse especially since the last quarter of 20th century with notable paradigm shifts. That is why globalization, climate change, and sustainable development are identified as the buzzwords of the present times. The key concern is economic prosperity versus threat of environmental vulnerability as the ecology as well as nature from which we draw the ultimate sustenance are fragile and not limit-less.

1. This article is the revised and modified version of the unpublished lecture titled 'Development Induced Displacements: Some Thoughts and Issues', delivered at the National Seminar on Development and Environment, Dept. of Geography, West Bengal State University, Kolkata, 17-18 March 2016. And, it draws substantially on Singh (2015b).

1. Professor, Department of Geography, Institute of Science, Banaras Hindu University, Varanasi, UP, 221005. Email: ravisingh.geog@gmail.com

"The inherent conflict is not between conservation and development but between environment and the reckless exploitation of man and earth in the name of efficiency" (Ramesh, 2010: 16). Environment is important to us in many ways including the source of resources we often use. Resources are central to the development of human societies. Therefore, there is general yearning for more and more resources. Nevertheless, their relationship is not that simple. Development, as generally perceived and practised contemporarily, contains the idea of subjugation of nature by the wise(?) man in true sense. Despite various shortcomings and embedded ill-implications; it is followed all over the world almost in the same basic way. A serious observer however may point out variations in development approaches in terms of space and time. We are coerced to believe that this 'development' is for common masses. No wonder, many of the sufferers view it as a total farce, actually a trap for the poor and their resources in the ultimate interest of the rich. At the same time, governments in close association with media tend to project these practices as a boon. The apprehension of a section of intellectuals and activists that the western hegemony is behind all shades of this evil appears to be true.

In this background, it is pertinent to take stock of the situation through some select perspectives. The objective of the present article is to unravel the relationship between development-resource-environment and the current development practices in critical perspective. The discussions, based on prior state of discourse and secondary data, are accordingly organised into four main sections. First, I briefly discuss how development has been a persistent human concern with changing emphasis and consequences. In the next section, resource use vis-à-vis development and environment has been analysed with reference to three basic resources, viz. land, water and forest; followed by an attempt to unravel the connect between development and displacement, and policy responses in the third section. In the backdrop of these discussions, the last section is devoted to analyse how the contemporary development processes further marginalise common people followed by a concluding note at the end.

Development: The persistent concern

Almost a century has passed since the 'development' concerns were first expressed globally; and, the poor man's plight still remains the same-- pauperised, exploited and victimised by the system (cf. Bhusan, 2002). Others, who have been consistently benefitted by the system, may claim and paint a diagonally opposite picture, but the realities well demonstrate how we have failed in realising the goal of development of the poor. The overall impacts have been much wider and deeper than generally reported and known. In the name of agricultural development, the modernisation process got massive encouragement from the government's side. The most countable and boasted of result of it has been self-dependency in food-supplies and 'over-flowing' granaries. Critical perspectives bring out many issues which were not revealed knowingly and instead euphoric claims were propagated in the mainstream development discourse. Limits of 'green revolution' in terms of regions covered and crops benefited have today become old issues. (And, the second generation reforms are much talked about these days.) The quite hasty approach to produce more and more led to many nasty results, mention may be made of the soil-degradation and soil-loss. Apart from them, the modern cultivation practice is highly capital intensive and market oriented. Such campaigns have necessarily proved to be virtual death trap for marginal and small farmers. Even if we accept governmental claims to have ended the network of moneylenders, the poor farmer is into a new trap of institutional credit system. Meant to facilitate farmers financially, it has forced farmers to commit suicides in different parts of India. The lack of proper crop-insur-

ance facility, marketing system, etc. need rethinking. The problems do not end here. There are certain exogenous factors affecting agriculture. Considerable loss of cultivable land to non-agricultural uses, viz. industries, mineral extraction, housing development and brick-kilns, has compounded the problem.

The experience in the context of industrialisation is not so different. In the Pandit Nehru's regime, much hyped national development projects were established in the interior parts of the peninsular region, predominantly tribal, consisting of today's Chhattisgarh, Jharkhand, Madhya Pradesh, Odisha, West Bengal, etc. Some recent studies have revealed enough that how little benefits have actually accrued to the tribal people who lost their land to such projects (cf. Lahiri-Dutt et al., 2012). The only visible benefit is infrastructure coverage in these regions. Even in this respect we find roads and railways are yet to touch many remote(st) corners, many of which located 35-40 km away from the last motorable point or the nearest railway station; the (bigger) urban centres, connectivity has of course got strengthened. Benefits from mining, transportation, business opportunities, better paid jobs, and the alikes mostly went to 'outsiders', especially in the initial phase. One may think what the poor tribal people have finally got. It is very easy to find "meagre compensation, if paid at all, loss of access to their forests, exploitation at the hands of 'outsiders', starvation (and death), loss of environmental health and threat of consequent challenges to human health, and displacements after displacements" (Nirav, 2004) with no destination to reach! Such stories do not end here and the scenario evolves constantly: there are industries but no gainful employment for the local tribals, power-generation and transmission lines running overhead but no connection to lit up a bulb in a poor man's home-what a pathetic situation to face!

Forests and their commercial use rather exploitation are yet other issues. The forests at large have suffered due to the nexus of Mafia and corrupt officials of forest department. And, ultimately this scenario has worsened the sufferings of forest dependent tribal communities. This issue has been addressed in somewhat more detail in the next section to understand the long term and wider implications of the dwindling forest-cover. In the meanwhile the strategies to protect forests have not been able to integrate the peoples' interest who depend on them.

With short-term motivated development strategies, water, which was never a problem in the Monsoon region countries till recently, is gradually becoming a matter of serious concern and conflict as well. Besides the qualitative dimension, water availability tends to be threatened. The shortage of water is alarming in cities, especially the mega-cities where a large population is usually concentrated over a relatively small geographical area. Same acute shortage is felt in the semi-arid zones; this problem again has its roots in ill-thought agro-development strategies.

Resource vis-à-vis development and environment

Sustenance of human life depends on resources and thus resources need to be conserved for the development which is sustainable. Another relevant point in this context is the gradual shortage of resources vis-à-vis growing demand for them. And, we may see it as the origin-point of the need of sustainability. Sustainability requires the sense of sharing, sensitivity, and connectedness (cf. Kalam, 2004) with fellow human beings, future generations, and also the environment in which we live and the Mother Earth at large (cf. Gadgil and Guha 1992a, 2008). While trying to reflect upon the practice of sustainability, we may refer to the Gandhian thought on (economic) morality and the role of religions which advice against over-

consumption and the tendency to accumulate and possess more than what is required (cf. Singh, 2014).

Resources as a whole, together with the issue of their use, need a viewing radically different from the recent distorted practice. Revisiting this issue necessarily involves consideration of the question of property rights, access, users' responsibility, extraction/exploitation technology together with the degree or scope of their renewability; and, on top of all the rehabilitation of the displaced. The resources with which common people are deeply connected since generations are land, forests, and water. The important emergent issues concerned with them are being discussed in the following subsections:

Land

In present-day India, the pressure on land has multiplied, as have the intensity of conflicts over it. During last few decades, this pressure has increased tremendously owing to a phenomenal increase in population. The population increase has taken place even in relatively land abundant arid and semi-arid states such as Rajasthan and Gujarat; and, the regions which were considered inhospitable and therefore undesirable, for instance the *tarai* region in the north. To understand the issue, one may look at the macro level scenario in India. The population density between 1951 and 2013 has increased from 117 persons per sq km to 382 persons per sq km. Along with human population; livestock population has also increased unprecedentedly and has resulted in changes in general land use and its intensity (Singh, 2011a) even in the marginal regions (Singh 2015a).

Studies reveal that the scope for extensive use of land for cultivation is limited as all possible expansion in the area under cultivation has mostly been accomplished by bringing even areas that are not strictly suitable for crop cultivation such as degraded forestland, grazing land and other wasteland. Cultivable land is under a constant pressure of increasing the productivity per unit of land to meet (food) requirements of the growing population. As expansion of area under plough has almost saturated, the said pressure has resulted in intensification of inputs--agro-chemicals (fertilizers, pesticides and herbicides); canal and groundwater; and, the modern agromechanical technologies--leading to both 'reversible' and 'irreversible' environmental damages to the land areas under crop. Land degradation has been continuously contributed by both the rich and poor farmers in their own ways, the former through intensive cultivation and the latter by extracting available biomass (Singh, 2011a).

The concept of land degradation is explained by referring to two aspects: (value) replenishment and (value) extraction. In a condition when replenishment continuously exceeds extraction, the result is degradation. Several factors have been found responsible for it " excessive natural erosion (due to absence of soil cover perpetuating natural erosion, overgrazing, deforestation, non-scientific tilling, etc.), loss of nutrients on account of non-adoption of crop-rotation and crop-combination techniques, salinity-alkalinity, water-logging, industrial degradation, and the pollution of groundwater. Economists also identify linkage between poverty and (land) resource degradation (cf. Reddy, 2003). However, there is no consensus on the issue. The land degradation is critically linked with sustainable development in predominantly agrarian economies like India. The land degradation estimates of different agencies vary considerably (cf. ibid.). According to one set of estimates, in 1994 soil degradation was about 187.8 million hectares, which rose to 200 million hectares in 1997. Wasteland Development Board of India estimates it to be around 93 million hectares. The distribution of total degraded land varies across the agro-climatic regions (Table 1). In

the plateau region, the area of poor soils as a whole has a larger percentage of degraded land (cf. Rana, 2014). In Gujarat plains and hills, highest degradation of land is evident, owing probably to the arid/semi-arid conditions. On the contrary, the Eastern Himalayas, Lower Gangetic plain and Trans-Gangetic region, which are relatively wet, have considerably low degradation. It is noteworthy that every region's degradation level could be explained with reference to specific factor(s). For example, higher land degradation in rich soil region like Upper Gangetic plain is attributed to intensive cultivation; whereas absence of normal vegetal cover facilitates the water and wind action in wet and dry conditions, respectively.

As far as effects of land degradation are concerned, the immediate one is on the soil fertility which in turn directly affects food production and food security. However, the impact of land degradation is not uniform by any measure. Significant geographical variations are found existing in this regard as resistance to the degradation varies from one crop to others and one soil type to another. It is worth noting that management of land degradation has yet not found wider audience. It may be concluded here that the sustainable use of land is under question and the threat to environment is imminent. Hirway (2011) observes, "Another area which needs a focus in the environment-development debate is land use policy…. with economic development, land under non-agricultural use--for industry, infrastructure, human settlements, etc.--is bound to increase. The critical question, however, is which land and how much land should be transferred to which non-agricultural use and how? It is extremely important for sustainable development that this question is answered systematically and scientifically rather than in an ad-hoc manner. Also, the final answer about any specific land deal should have the consent of the local people (Hirway, 2011: p. 4).

Table 1: India: Distribution of total degraded land by agroclimatic regions, 1988-1989

Agro-Climatic Region	Total Degraded Land (as %age of geographical area)
Western Himalayas	6.964
Eastern Himalayas	2.824
Lower Gangetic Plains	3.334
Middle Gangetic Plains	9.847
Upper Gangetic Plains	14.121
Trans-Gangetic	3.730
Eastern Plateau	10.166
Central Plateau	13.291
Western Plateau	16.350
Southern Plateau	9.798
East Coast Plains	8.684
West Coast Plains	9.783
Gujarat Plains and Hills	17.010
Western Dryland	7.951
All-India	10.800

(Source: Adapted from Reddy, 2003: 4707)

Water

In terms of global importance, water as an issue is next to climatic concerns today. Water seems to have caught the attention of scholars (cf. Barlow and Clarke, 2003) in the recent years and of late the policy-people. The water issue incorporates different dimensions, none of which is less important, and they all are intrinsically linked with each other (see, Singh, 2015c; Singh and Roy, 2015 for details) whether it is their availability (and shortage), demand (and supply), quality, pollution, monitoring and management, and very recently emerged voices of concern about accessibility and ownership. Water requirement can be broadly grouped as household, industrial (both power and non-power sector), and agricultural (cf. Table 2). In the simplest form, it may be discussed as a common person's average requirements. Water, a continuously provided gift from nature to us, keeps on circulating into different forms and its stock is regu-

Table 2: Water requirements of various scenarios in 2020 (billion cubic metres)

Requirements	Scenarios			
	Business as Usual	High Growth	Sustainable Scenario	
			Total	Per cent
Households	67.52	67.52	45.01	4.66
Power	8.19	12.29	5.00	0.50
Industry	27.91	41.58	27.72	2.87
Agriculture	677.30	804.20	768.37	79.69
Evaporation	42.00	42.00	42.00	4.33
Ecological	78.00	78.00	78.00	8.09
Total	920.92	1005.59	966.10	---

(Source: Based on Chopra, 2003: 3363)

larly renewed through the process of water cycle. During the last half a century, water scarcity has been felt due to which conflicts over it are eminent. Such conflicts would not be international alone; the case of Karnataka vs. Tamil Nadu and Punjab vs. Haryana are a few cases of the inter-state river water sharing conflict (cf. Singh, 2011c). A perusal of Table 2 reveals that there shall be tremendous pressure on water resources in the near future. All kinds of human consumptions of water together need unprecedented amount--indeed a tough challenge is in the offing. No doubt, the worst sufferer would be the common man. Already, in India, big transnational companies (e.g. Pepsi and Coca-Cola) are into the packaged drinking water business. Though the Supreme Court of India through one of its judgements has proclaimed drinking water as a fundamental right (cf. Ramachandraiah, 2001), gradual pollution of natural water sources is making them unsafe and unhealthy (for human use). Simultaneously, the callous and insensitive outlook of the state makes the situation worrisome for the commoners; and a positive and promotive circumstance for pricing drinking water and thus indirectly encouraging water as a tradable commodity. However, this concern in no way disapproves of pricing commercial use of water.

To achieve sustainability in this regard, policy interventions are imperative. Such interventions should focus on 'Saving Water'. In one hand, by preparing people to make efficient and optimal use and thus reducing wastage of water; and, on the other hand, by checking different sources of pollution, promoting user-friendly water-harvesting techniques, and also correcting institutions and instruments to this end would contribute to sustainable use of water. While formulating work-plans safe spaces for the poor's need not be overlooked. In this process we can also learn from the experiences of other countries (see, Shah, 2004). Gender roles are quite significant in this regard but often overlooked (Singh, 2012).

Forests

Forests are of multitudinous significance to us. Apart from being the source of timber and various non-timber products, they provide crucial ecological services. They play active role in nutrients' recycling, soil formation and conservation, water cycle, and beside these they also form natural habitat of a huge pool of flora and fauna. But, for common people they are important till date for timber alone. They are as the same time considered as 'lifeline' by the forest-dwellers who also attach sacred importance to

it. A common perception and concern across the world has been faster rate of deforestation. Table 3 showcases the extent of diversion of forest land since 1981 in India. To check deforestation, different governments apparently have spent a huge amount of money besides making constitutional provisions. Results however are reported to be quite dismal. Many reasons are cited to explain the failure. Most of the forest conservation strategies are said to be narrowly conceived as they did not consider the importance of the role of local forest communities in any programme (see for example, Gadgil and Guha 1992). Some studies have indicated that state authorities have even misappropriated common tribal land in the name of forest conservation (Sarin, 2003).

Table 3. India: Diversion of forest area

Period/Year	Forest area diverted* (ha)
1981-92	1,98,421.19
Eighth FYP (1992-97)	84,587.07
Ninth FYP (1997-2002)	1,47,397.57
Tenth FYP (2002-07)	1,96,262.32
Eleventh FYP (2007-12)	2,04,425.06
Total	8,30,244.00

*For all projects excluding regularisation of encroachments.

(Source: "Forest Clearance", Centre for Science and Environment, viewed on 29 September 2011 (http: // www. cseindia.org/userfiles/Forest%20clearance.-pdf).

Recent studies on forest-conservation prescribe alternative ideas. It has been argued that local forest management be encouraged through establishing forest-communities' property rights over forests. To promote realistic forest protection, forest department needs some policy alteration. It is often reported that in spite of strict restrictions, dependent communities continue to collect fuel-wood and fodder. Any attempt to restrict open access is severely opposed by them. Therefore, government may devise means to ensure forests' sustainability keeping in view the genuine needs of dependent communities (Dutta et al., 2004). Studies have found that 'traditional systems of forest management have often been ignored or summarily dismissed' (Gokhale, 2004: p.3556). The ultimate goal of any forest management practice is to protect forests. The emphasis thus should be on to try methods with which people can associate instead of enforcing alien strategies. The usual verdict is that the chances of successful common property resources (CPRs), like forest, management are higher in communities that are ethnically more homogeneous, of small to medium size, having autonomy in decision-making, and highly dependent on the resource (Kumar, 2013: p.36).

Development and displacement

It is well established that resources are used for meeting the human needs including developmental needs. The question of grappling with existence strategies is basically a poor man's concern; whereas 'development' is rich man's desire and dream. It is an open secret that while visualising a development project, the prime concern is profit making and profit-maximisation; development of local poor is the last concern, if at all. Even (negative) impacts on fragile environment too are manipulated. The control of and access to resources has direct implications for the nature of development. This fact is equally valid at household, community, and regional to international levels. The inequality in terms of resource endowment and accessibility to resources is the main determinant of the level(s) of development, which vary considerably and eventually make the ground for local/regional discontents. The contestation for controlling resources is quite common but often quiet whereas they may be as loud and volatile as the international invasions on resource-rich world regions/ countries to establish control on a critical re-

source (cf. Baviskar, 2003). The consequent discontents too are ubiquitous. In a country like India, which has progressed on the British inherited infrastructure, meant for exploiting the prosperous colony, even after attaining independence, regional imbalances in terms of economic development continue to persist till date. Several prolonged struggles against the existing politico-administrative system, in the name of regional independence or autonomy or separate statehood still continue in different corners; some of them have resulted in the creation of Chhattisgarh, Jharkhand, Uttaranchal, and Telengana after a prolonged 'struggle'. The common factor in all of these movements is the alleged politico-economic discrimination to their disfavour. The dialectics of these processes is presented in a generalised scheme in Fig. 1.

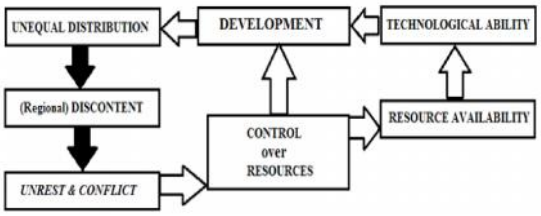


Fig. 1. Resource-development-discontent (cf. Singh, 2005)

Coming back to the issue of developmental processes and their fallouts, it is relevant to discuss the displacement problem. The problem of displacement, especially development-induced ones is relatively new (see, Terminski, 2013 for detailed historical account of it); however, considerable amount of literature from varied perspectives is available on it (see, Table 4 and 5). Displacement may be defined as the uprooting an individual or a community from the place of their normal (ancestral) residence. Thus, it is a process as well as consequence in itself. It is caused on several accounts-- natural disaster or calamity (cf. Singh, 2011b), conflicts, politico-administrative decisions, and also due to the execution of (large scale) development projects (cf. Negi and Ganguly, 2011). Fig. 2 presents a simplified view of displacement which takes place due to both disasters and developmental projects. There is no denying the fact that the former too has contributed immensely in displacing people together with conflicts (Table 6). Historically speaking, the process of displacement began with deforestation and expansion of agriculture, construction of dams and irrigation projects; development of transport infrastructure; urbanization, reurbanization and population redistribution; mining, etc. (Terminski, 2013). Here one can cite the example of displacements caused in the process of resource extraction and use (Singh, 2010). Lahiri Dutt et al. (2012) in their study of Jharkhand's coal mining rightly conclude that it not only leads to changes in land-use pattern and the creation of "wastelands", it also leads to the physical and occupational displacement of people. The common experience across the world indicates that being a (poor) native of (mineral) resource rich region is a curse because such people are doomed to be displaced, subjected to multiple displacements (Photo plate 1). Such displacements again are numerous, some of them already discussed in the second section of this article. Thence, moving ahead in this part we can cite the case of displacements due to the establishment of big hydel power projects-- an issue in limelight for quite some time.

There are several reasons for opposing mega-projects; displacement is atop all of them. The sufferings caused thereafter hit the poorest of the poor mercilessly. Women and children are among the worst sufferers (cf. Cernea, 1999). Even if we forget the lesser issues, which are actually not at all lesser if seen through the eyes of the oustees, the larger issues like benefit sharing, are not thought about while discriminating. Naturally, people become apprehensive about the intention of policy makers and execu-

tioners and also the development paradigm in practice (Singh, 2005). After all, a question keeps on haunting-- why to undertake a development project to which would-be beneficiaries (?) are opposed? We may return to the basic issue of how far the local community participation is there in decision making which affects them, their families and community?

Rehabilitation and resettlement and state policy response

Every kind of displacement is initially unwelcomed and disliked as it leads to: (1) landlessness, (2) homelessness, (3) joblessness,

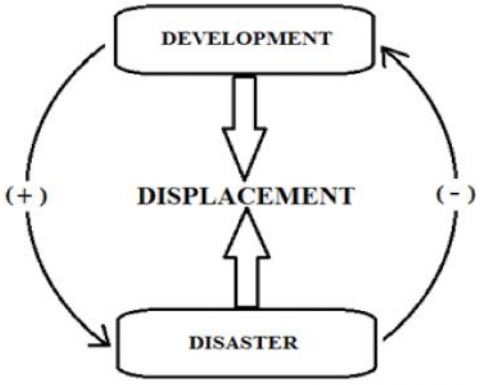


Fig. 2. Development-disaster-displacement: A generalized relationship

Table 4: Number of displaced/project affected persons in select states of India*

State/Year	1951-1995				1947-2000		1947-04	1965-95	Total
Type	AP	JH	KR	OD	AS	WB	GJ	GA	
Water	1865471	232968	133846	800000	448812	1723990	2378553	18680	7602320
Industry	539877	87896	222814	158069	57732	403980	140924	3110	1614402
Mines	100541	402882	78	300000	41200	418061	4128	4740	1271630
Power	87387	NA	2556	NA	7400	146300	11344	0	254987
Defence	33512	264353	1800	NA	50420	119009	2471	1255	472820
Environment	135754	509918	14888	107840	265409	784952	26201	300	1845262
Transport	46671	0	151623	NA	168805	1164200	1356076	20190	2907565
Refugees	NA	NA	0	NA	283500	500000	646	Nil	784146
Farms Human	NA	NA	6161	NA	113889	110000	7142	1745	238937
Resource	NA	NA	14649	NA	90970	220000	16343	8500	350462
Health	NA	NA	NA	NA	23292	84000	NA	1850	109142
Administrative	NA	NA	NA	NA	322906	150000	7441	3220	483567
Welfare	37560	0	2472	NA	25253	720000	20470	NA	805755
Tourism	0	0	343	0	0	0	26464	640	27447
Urban	103310	0	1003	NA	1241	400000	85213	1750	592517
Others	265537	50000	0	100000	18045	0	15453	840	449875
Total	3215620	1548017	552233	1465909	1918874	6944492	4098869	66820	19810834

Note: *Since the understanding of displacement has grown during the 15 years of the studies, Orissa has very few categories. They are more in later years.

AP: Andhra Pradesh, JH: Jharkhand, KR: Kerala, OD: Odisha, AS: Assam, WB: West Bengal, GJ: Gujarat, GA: Goa

(Sources: Singh, 2010)

Table 5: Estimate of persons displaced* by various types of projects in India

Type of Project	No. of Displaced	No. of Rehabilitated	Backlog (%)
Dams & Canals	1,64,00,000	41,00,000	75.0
Coal and other Mines	25,50,000	6,30,000	75.3
Industries	12,50,000	3,75,000	70.0
Sanctuaries & Parks	6,00,000	1,25,000	79.2
Others	5,00,000	1,50,000	70.0
Total	2,13,00,000*	53,80,000	75.0

Note: *50 % of them are the STs
(Sources: Singh, 2010)

Table 6: India: Some recent experiences of displacement

Year	Conflict Stock Displacement (persons)	Conflict New Displacements (persons)	Disaster New Displacements (persons)
2009	500000	33000	5304000
2010	650000	107000	1411000
2011	650000	53000	1503000
2012	1000000	500000	9110000
2013	526000	64000	2145000
2014	854000	345000	3428000
2015	612000	1000	3655000
2016	796000	448000	2400000
2017	806000	78000	1346000

(Source: http://www.internal-displacement.org/database/displacement-data)

(4) marginalisation, (5)food insecurity, (6) increased morbidity and mortality, (7) loss of access to (traditional) common property resources (CPRs), (8) social disintegration due to loss of place-bound social networks (Singh, 2013).

Surprisingly, we became sensitive to this problem too late. In fact the very idea of rehabilitation and resettlement (R and R) is relatively new, especially with reference to the developmental projects. For the first time, the World Bank adopted an explicit policy concerning involuntary resettlement in 1980 followed quickly in India within a span of five years. In 1985, the idea of national rehabilitation policy was mooted by a committee of the Ministry of Welfare, Government of India. Then, in 1993, the ministry of Rural Development prepared a draft rehabilitation policy. It was followed by many draft policies prepared by central government ministries and departments and also by the public sector undertakings which necessarily needed to acquire land. A remarkable headway in this regard was made in 1997 when a committee of secretaries approved a modified new draft. In 2004, a National Policy on RR Bill for Project affected Families-2003 was notified on the 17th February 2004. And, the latest is R and R Bill No. 98 of 2007. Its major criticisms were around the issues like development projects' centred, criteria for social impact assessment and R and

R are too restrictive, role of local bodies poorly conceptualized, gender insensitive, and lack of flexibility. The Financial Express comment well summarized its contents by terming it, "New R&R policy seeks to please both displaced and developers" (October 17, 2007).

A good number of studies have been done on the issue including people's responses to displacement (Sharma 2003; Sharma 2010). Some crucial issues within the existing bills may be identified as poorly developed and often insufficient mechanisms for ensuring weaker sections' interests, poor conceptualization of meaningful people's participation, over-presence of state, weaker conceptualization of addressing conflict (of interests) particularly in case of minimized presence of state, the role and responsibilities of Panchayati Raj Institutions (PRIs) in such affairs and exercises, and more significantly the potential threat of misuse of power and space given to the PRIs, as revealed by the grassroots realities (Singh, 2013).

Irrespective of the nature of displacements, the state's success in timely notification with sufficient information, timely and effective surveys, timely payment of compensations (if paid at all), denial of 'land for land' no matter how beautifully written and boldly declared in public, delays and altogether denial in rehabilitation, and forced uprooting and relocation together lament indifferent attitude of the state. The situation further worsens because data regarding displaced is not collected systematically (Photo plate 2) and the displacement drivers do not affect all in same manner (Thukral, 1996). This task becomes further complicated on account of multitude of complexities in identification and definitional issues involved. It is difficult to deny the fact that the state has been given immense power and the ultimate control without having required expertise and commitment even on the part of project authorities. In such a condition, the R & R activities become supply-driven which should be the other way round, i.e., demand-driven (Fig. 3). No wonder, why R and R proves almost ineffective forcing people to fend for themselves!

Poor people's plight: the continuing concerns...

The contemporary practised development and attendant phenomena seem to be going against common people in both parts of the world--developed and developing. At the beginning of 21st century, plethora of publications criticizing globalization on various grounds came to the fore lamenting the issues both at source regions and destinations. Globalisation, as the main mantra, is perceived as the process of integrating the world, originally propagated as an economic instrument to lower down man-made barriers, facilitate enhancement of economic gains through promoting production advantages and product exchange, etc. (cf. Petras, 1999: Parekh and Wilcox, 2018); has far reaching potential to effectively alter local fabric including culture and individual's life. Globalisation clearly brings out its negativities for developing countries and marginal sections. Its critics are of the view that it is actually a process envisaged to benefit the TNCs and rich at the cost of poor. It is now official that the relocation of industries or outsourcing, to the developing economies, is snatching away jobs from the workers of developed countries; and, on the other hand, their fellow workers in developing countries are exploited through under-payment and persistent insecurity. Hence, globalisation tends to prove itself as an effective instrument of hegemonic domination of the powerful nations, TNCs and the rich over developing nations' economies and common masses across the globe. The dominating tendencies have ultimately led to even the violation of international bodies' decisions/ directives and national sovereignty, as attested by the remarks of the former UN Secretary General (late) Mr. Kofi Annan (Times of India, September 18, 2004).

In the broader structure of globalisation, several processes have embedded presence. Marketism is one of them. Strengthening of market forces simultaneously weakens the welfarian role of the state. Under the effect of marketism everything is reduced to commodity. It may appear as glorification of the value dimension, particularly value identification; however, as a matter of fact, the commodification approach rests entirely on valuation as per market demand tendencies. Then, anything of greater market value would become more important and vice versa. Such a trend is highly alarming. Judgment of dos/do nots and desirables/undesirables cannot be left on market alone. Otherwise, it will automatically harm the interest of all who have no market value. The poor and marginal sections, with very low or no professional skill at all, who are already vulnerable, would be at higher risk. The unscrupulous market forces straightway dismiss and reject many worthy essentialities having no (direct) market. It is commonplace to find radical marketism unfolding its vulgarities with widespread effects-- indeed a danger for the developing societies. And, a challenge for a sustainable future!

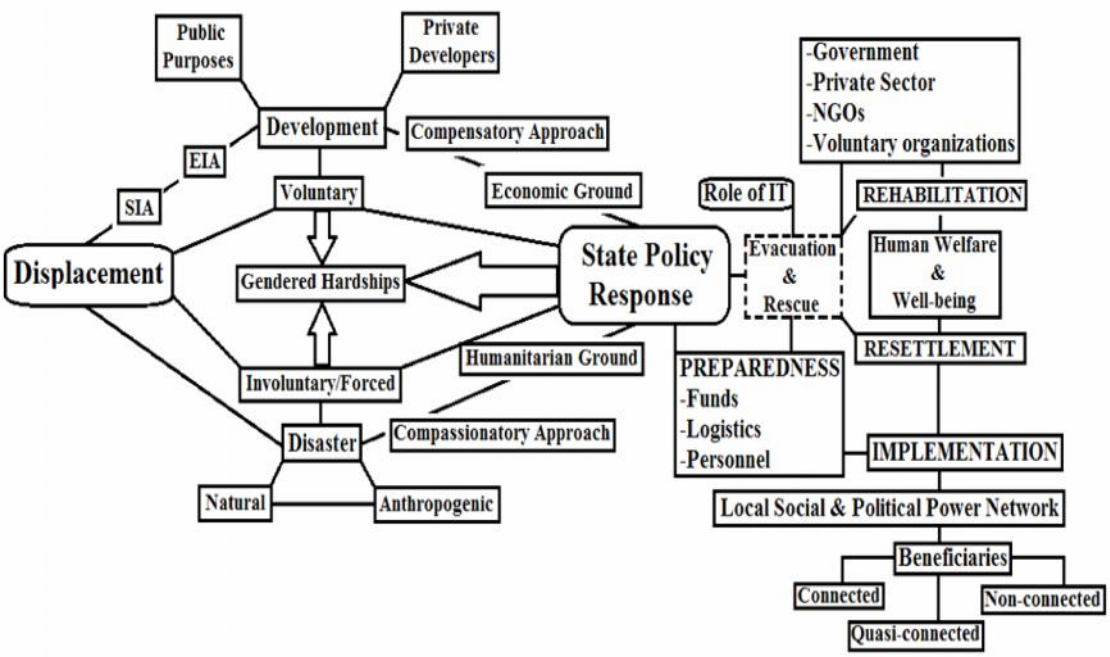


Fig. 3. Displacement: Inducing factors, implications, and responses

The whole world is being increasingly viewed as a big market, new lifestyles conducive to more and more demands are being fostered. Cloning the popular western life-styles which believe in the principle of 'use and throw' and over-consumption, shall have serious implications for rest of the world which we tend to ignore. Vigorous and offensive advertisement campaigns are engaged in altering human psyche, trying to transform people into ever hungry-thirsty-lustful animals. As a result the relative deprivation tends to accentuate. Since the recent past, gradually widening economic inequality has accelerated absolute deprivation.



Photo plate 1. Internally displaced people on move
(Source: http://staging.internal-displacement.org/countries/india)



Photo plate 2. Impact assessment: A survey among the bank-erosion (by Ghaghara) victims and displaced people in Bahraich district, UP

(Source: Personal field survey, Winter 2010)

A vast majority is yet to get their minimal basic requirements, forget higher ideas like living with dignity and decency. People, who are below the so-called "poverty-line", dying out of hunger or starving, and are homeless form a big size, require urgent attention. The heightened desire to acquire more and more materialistic comforts is common and made inroads in small towns and

villages alike. The "neighbours' envy" syndrome has gripped most and in a natural way accentuated the sense of relative deprivation. Pressure on life is surging up and again economically weaker and marginal sections are highly pressurised. To meet out the new demands shortcuts are looked for--means are meaningless, goal of high income and affluent living assumes significance. Corruption and malpractice of every kind and at every level are therefore no more surprising news! It goes unsaid that those with full wallets are welcome and are also becoming the trend-setters in the society; others, especially poor, do not have a place, even a dignified space to relate with. In view of the contemporary concerns, such life-styles are burden on the nature and highly unsustainable as a practice.

Questions asked today with regard to the development in practice are many (see, Mohanty 2003). They need to be addressed holistically as compartmentalisation creates natural vacuum. Scrutiny of recent international policies affirms the growth of global and intra-national inequality and 'abandoning of poverty reduction as the core focus of development policy'. The egalitarianism is actively replaced with stratified world order that marks the 'return to relations of domination and subordination' (ibid.). But, does that mean poor should be left to their destiny; of course not. No matter how best the vested interest groups hobnob with policy makers, equitable development be the central issue in sustainable growth (Swaminathan, 1992). Active opposition and simultaneous creative thinking on alternatives is required. To have a desirable future, at the very beginning, goal(s) of life be made sustainable--living with dignity, simplicity, and sensitivity. It will automatically make the means sane and sustainable. Emphatic promotion of human values, education, and deeper cultural values can also contribute in this direction (cf. Kalam, 2004). The road ahead should find ways that can incorporate social justice, and political and economic objectives into conservation planning through empowering local institutions and common citizen (cf. Sharma, Madhusudan and Sinha, 2012).

Conclusions

The above discussions clearly indicate that in every development paradigm enhancing people's well-being and welfare form the focus. And, in the same fashion, every goal and process of development is resource dependent sourced generally from environment and nature at large. Yearning for higher sustainable economic development creates insurmountable pressure on basic resources like land, water, and forests which also have to play vital ecological roles. Consequently, conflicts from inter-personal level to inter-national level arise. The qualitative changes in development discourse have been noticed. Nevertheless common people are still marginalised in practice. The emerging concern is about displacement which is contributed both by development projects and disasters. Once uprooted, an average person and her/his family is displaced forever, the unfortunate among them are most vulnerable ones who may be subjected to multiple displacements. In such circumstances, the role of state becomes crucial not only in formulating an appropriate policy with the participation of displaced population but also to ensure a realistic rehabilitation and resettlement. The former is as easier as the later is challenging. The field realities reveal mammoth number of involuntarily displaced population and massive backlog in R & R despite of considerable policy provisions. The emerging global processes like globalisation and marketism further contribute to worsen the vulnerability of those who are deprived in every sense-socially, economically, and also politically.

Note

The term 'displaced person' was coined by a Russian origin Amercan sociologist Eugene M.

Kulischer (1881-1956) in his famous work The Displacement of Population in Europe (1943), includes all forms of forced mobility in Europe during war. However, currently it is restricted to internal mobility only.

References

Barlow, Maude and Clarke, Tony, 2003, *Blue Gold: The Fight to Stop the Corporate Theft of the World's Water*. Leftword Books, New Delhi.

Baviskar, Amita, 2003, For a cultural politics of natural resources. *Economic and Political Weekly*, 38(48): pp. 5051-5055.

Bhusan, Shantha, 2002, Conservation of commons: Power to the adivasis. *The Hindu Survey of the Environment*, pp. 111-14.

Cernea, Michael, 1999, Why economic analysis is essential to resettlement: A sociologist's view; in Cernea, Michael (ed.) *The Economics of Involuntary Resettlement: Questions and Challenges*,World Bank, Washington, DC.

Chopra, Kanchan, 2003, Sustainable use of water: The next two decades, *Economic and Political* Weekly, 38(32): pp. 3360-3365.

Dutta, Madhumati et al., 2004, Forest protection policies and local benefits from NTFP: Lessons from West Bengal. *Economic and Political Weekly*, 39(6): pp. 587-591.

Gadgil, Madhav and Guha, Ramachandra, 1992a, *This Fissured Land: An Ecological History of India*. Oxford University Press, New Delhi.

Gadgil, Madhav and Guha, Ramachandra, 1992b, New forest policy: For genuine friendship. *The Hindu Survey of the Environment*, pp. 26- 29.

Gadgil, Madhav and Guha, Ramachandra, 2008, *The Use and Abuse of Nature*. Oxford University Press, Oxford.

Gokhale, Yogesh, 2004, Reviving traditional forest management in Western Ghats. *Economic and Political Weekly*, 39 (31): pp. 3556-3559.

Hirway, Indira, 2011, The environment-development debate. *Economic and Political Weekly*, 46(2): pp. 4-5.

Kalam, Abdul P. J., 2004, A development model. Inaugural address to the *National Seminar on Alternative Strategies of Development*; RCVP Noronha Academy of Administration & Management, Bhopal; August 10-12.

Kumar, P.J. Dilip, 2013, Village communities and their common property forests. *Economic and Political Weekly*, 48 (35): pp. 33-36.

Lahiri-Dutt, Kuntala, Krishnan, Radhika and Ahmad, Nesar, 2012, Land acquisition and dispossession private coal companies in Jharkhand. *Economic and Political Weekly*, 47 (6): pp. 39-45.

Mohanty, Sanat 2003. Questioning development. *Gandhian Perspectives*, 11(1& 2): pp. 76-84.

Negi, N.S. and Ganguly, S., 2011, Development Projects vs. Internally Displaced Populations in India: A Literature Based Appraisal. COMCAD Arbeitspapiere - Working Papers No. 103. Web: https://pub.uni-bielefeld.de/download/2535157/2535158/ workingpaper_103_negi_ganguly.pdf; <accessed on 11 August 2018>

Nirav, Narendra, 2004, Visthapan dar visthapan (in Hindi), *Sahara Samay Weekly*, August 14: 35.

Parekh, Serena and Wilcox, Shelley, 2018, Feminist perspectives on globalization; in *The Stanford Encyclopedia of Philosophy* (Spring 2018 Edition), Edward N. Zalta (ed.), URL = <https://plato.stanford.edu/archives/spr2018/entries/feminism-globalization/>; <accessed on 11 August 2018>

Petras, James 1999. Globalization: A critical analysis, *Journal of Contemporary Asia*, 29 (1): pp. 3-37, DOI: 10.1080/00472339980000021

Ramachandraiah, C., 2001, Drinking water as a Fundamental Right. *Economic and Political Weekly*, 36(8): pp. 619-621.

Ramesh, Jairam 2010, The two cultures revisited: The environment development debate in India. *Economic and Political Weekly*, 45(42): pp. 13-16.

Randell, Heather, 2016, The short-term impacts of development-induced displacement on wealth and subjective well-being in the Brazilian Amazon. *World Development*, 87: 385-400. doi: 10.1016/j.worlddev.2016.07.005. Web: https://www.ncbi.nlm.nih.gov/pmc/ articles/ PMC53-54122/; <accessed on 11 August 2018>

Rana, N.K., 2014, *Laterite Soils in India: Utilisation Patterns and Modelling Resource Degradation*. RK Books, New Delhi.

Reddy, V. Ratna, 2003, Land degradation in India: Extent, costs and determinants. *Economic and Political Weekly*, 38 (44): pp. 4700-4713.

Sarin, Madhu 2003. Conserving forests: Trees hide the woods. *The Hindu Survey of the Environment*, pp. 111-15.

Shah, Tushaar, et al., 2004, Water sector reforms in Mexico: Lessons for India's new water policy. *Economic and Political Weekly*, 39 (4): pp. 361-370.

Sharma R.N., 2003, Involuntary displacement: A few encounters. *Economic and Political Weekly*, 38(9): pp. 907-912.

Sharma R.N., 2010, Changing facets of involuntary displacement and resettlement in India. *Social Change*, 40(4): pp. 503-524.

Sharma,Narayan, Madhusudan, M.D., Sinha, Anindya, 2012, Socioeconomic drivers of forest cover change in Assam: A historical perspective. *Economic and Political Weekly*, 47(5): pp. 64-72.

Singh, Ravi S., 2005, The practised development; in, Singh, M.B., et al. (eds.) *Sustainable Management of Natural Resources (Land, Water, Forest)*, Tara Book Agency, Varanasi: pp. 186-199.

Singh, Ravi S., 2010, Land use, livelihood and development projects in India: An analysis with special *reference to coal mining. Paper presented at the International Seminar on Land use, Biodiversity and Climate Change*; Cotton College, Guwahati; December 11-13.

Singh, Ravi S., 2011 a, Who's development? Understanding the implication(s) of land use change with special reference to the special economic zones of India. Inaugural lecture delivered at *UGC sponsored National Seminar on* Bio-diversity, Land Use and its Development. Dr. Kanailal Bhattacharyya College, Howrah; July 16-17.

Singh, Ravi S., 2011b, Disasters, resources, state and common man: Who does not get what and why? *19th Refresher Course in Environment and Human Values* (Thrust Area: Natural Resources, Environmental Management and Social Justice), Academic Staff College, The University of Burdwan, Burdwan, West Bengal; September 5, 2011.

Singh, Ravi S., 2011c, Water conflicts: Typology, emerging concerns and issues. *National Geographical Journal of India*, 57(2): pp. 41-54.

Singh, Ravi S., 2012, Water and women: Scenarios and issues; in, Sati, Vishwambhar Prasad (ed.) *Natural Resources Conservation and Food Security*, Bishen Singh Mahendra Pal Singh, Dehra Dun; pp. 131-138.

Singh, Ravi S, 2013, Living with the natural Disasters: A case study of bank erosion; in, Nandeshwar, M.D. et al. (eds.) *Sustainable Natural Resources Management under Changing Climatic Scenarios: Proceedings of the 3rd International Indian Geography Congress*, Allied Publishers, New Delhi: pp. 174-181.

Singh, Ravi S.2014, Evolution of the environmental concerns; in, Singh, Ravi S. (ed.) *Environmental concerns: Third World perspectives*. YS Books International, New Delhi: pp. 1-24.

Singh, Ravi S., 2015a, Nature of land use and agricultural change in peripheral regions: A case study of Arunachal Pradesh, India; in, Dutt, Ashok K et al., (eds.) *Spatial Diversity and Dynamics in Resources and Urban Development*, Part I: Regional Resources, Springer: 529-557,. DOI 10.1007/978-94-017-9771-9_28

Singh, Ravi S., 2015b, The development idée fixes: Unfolding a paradoxical talisman; in, Singh, Ravi S. (ed.) *Resource Use, Development and Environment: Interfaces and Implications*, YS Books International, New Delhi: pp. 3-24.

Singh, Ravi S. 2015c. Perspectives on water and development with special reference to India; in, Singh, Ravi S. (ed.) *Resource Use, Development and Environment: Interfaces and Implications*, YS Books International, New Delhi: pp. 433-462.

Singh, Ravi S. and Roy, Dipankar, 2015, Water in India: A Conceptual outflow. *Transactions, Institute of Indian Geographers*, 37(1): pp. 67-79.

Swaminathan, M. S., 1992, Equitable development: Focus-sustainable growth. *The Hindu Survey of the Environment*, pp. 122-27.

Terminski, B. 2013. Development-induced displacement: Theoretical frameworks and current chal-

lenges. Geneva. Web: https://dlc.dlib.indiana.edu/.../Bogumil%20Terminski, %20development-Induced%20Dis... ; <accessed on 11 August 2018>

Thukral E.G., 1996, Development, displacement and rehabilitation: Locating gender. *Economic and Political Weekly*, 31(24): pp. 1500-1503.

Times of India, New Delhi (National Edition) September 18, (2004): p. l.

Web Sources

http://dolr.gov.in/sites/default/files/National% 20Rehabilitation%20% 26%20Resettlement% 20Policy%2C%202007. pdf ; <accessed on 11 August 2018>

http://shodhganga.inflibnet.ac.in/bitstream/10603/106025/7/07_chapter%201.pdf; <accessed on 11 August 2018>

http://staging.internal-displacement.org/countries/india; <accessed on 11 August 2018>

http://www.indiaspend.com/cover-story/tribals-account-for-a-third-of-communities-displaced-by-large-projects-11821; <accessed on 11 August 2018>

http://www.internal-displacement.org/countries/india; <accessed on 11 August 2018>

http://www.internal-displacement.org/database/displacement-data; <accessed on 11 August 2018>

https://www.balcerowicz.pl/pliki/artykuly/95_Globalization-and-Its-Critics_presentation.pdf; <accessed on 11 August 2018>

●●●

NGJI, An International Refereed Journal
(NGSI-BHU, ISSN: 0027-9374/2017/1682)
Vol. 64, No. 3-4, Sept.-December, 2018

A Comparative Study of Health, Quality of Life and Social Well-Being in Slums of Kanpur City

Rohit Singh[1] and V. K. Kumra[2]

Abstract

The impact of continuously increasing urban population has resulted acute shortage of housing, opportunity of job and basic amenities, which in turn results in undernourishment, inadequate civic amenities and mushrooming expansion of slums and squatter settlements. Around the world, approximately one billion people live in urban slums, which are typically overcrowded, polluted and lack in basic amenities. The condition of slums is worst in most of the developing countries and India is not an exception. The slums of Kanpur city portray the wretched picture of life in slums. Environmental concern of slums, social problems, disparities, well-being and quality of life are the new realms of geographic study in this post-modern era. The studies concerned with the quality of life are becoming more relevant for inclusive development of society and country as a whole. In Kanpur city 26 per cent population live in 412 slums.

The study is based on primary survey of 150 households of 5 selected slums of Kanpur city. In the present study an attempt has been made to determine the quality of life in slums of Kanpur city. For determining the Quality of Life in slums Composite Index and Standard Deviation have been calculated. To calculate the composite index 13 variables are chosen to determine QOL. This paper also attempts to highlight the poverty alleviation programme and policies for slum dwellers of Kanpur City and suggest remedial measures for inclusive development and planning to improve the quality of life in slums.

Keywords: *quality of life, slum, urbanisation, environmental concern*

Introduction

Rapid increase in urban population is emerging as the most pervasive and dominant challenge facing our country, today. Urban population in India has grown from 78.9 million in 1961 to 377 million in 2011 and is estimated to be doubled in next 25 years. Cities and towns are centre of agglomeration, economies, investments, technology, innovation, economic growth and tertiary jobs. They are the generators of resources for the national and state exchequers. Large cities are also the hopes of millions of migrants from the rural hinterland and smaller

1. Assistant Professor, Dept. of Geography, S.K.D.C. Basti, 272001
Email: rohit.singhbhu1989@gmail.com
2. Professor, Dept. of Geography, B. H. U. Varanasi 221005,
Email: vkkumra@gmail.com

settlements. On the account of growth in service sector, surge of knowledge and economy, the population pressure on cities is bound to escalate. All those have contributed high population density, growth of slums and squatter settlements, acute shortage of housing and pressure on basic civic amenities, degradation of environment, traffic congestion, pollution, poverty, unemployment, crime and social unrest. Of these slums have become a challenging task for cities planners for its removal and rehabilitation. Encyclopaedia of Britannica defines slums as "…residential areas that are physically and socially deteriorated and in which satisfactory family life is impossible. Bad housing is a major index of slum condition. Bad housing refers to dwelling that have inadequate light, air, toilet and bathing facilities; that are in need of repair, dump and improperly heated; that do not afford opportunity for family privacy; that are subject to fire hazard and that overcrowd the land leaving no space for recreational uses. Whereas, UN-HABITAT defines "A slum is a contiguous settlement where the inhabitants are characterized as having inadequate housing and basic services. NSSO defines slum as declared and undeclared slums. The declared slums were areas which have been formally declared as slum by the respective municipalities, corporations, local bodies or the development authorities. The declared slums were defined as "an aerial unit having twenty five or more katcha structure mostly of temporary nature, or inhabited by person with practically no private latrine and inadequate public latrine and water.

Urbanization accompanied with sustained population growth due to large scale migration from rural to urban centres leads to mushrooming growth of slums in all cities and town in India. An estimated 25 per cent of the total urban population still subsists on incomes that are below the poverty line. Eighty per cent of their meagre earning is spent on food and energy, living very little amount for meeting costs of living in an increasingly monetized society. The majority of them live in dingy shelter, and without any basic amenities or social services. The living environment of such settlements harbours crime, ill health and diseases, frequently rise demands on their resources that draws them deeper into vulnerability and poverty. If relentless growth of urban population will continue, the housing problem will further worsen unless concerted measures are taken to ameliorate the living condition of vast majority of vulnerable sections of the society i.e. the slum dwellers/ urban poor. Developing countries like India presently suffer on account of enormous growth of urbanization, which led to growth and distribution of slums in large cities particularly. According to NBO report the total housing shortage has been estimated as 19.4 million units. In urban area the shortage is 6.6 million unit and 90 per cent of these shortage hits poor and people belonging to low income (NBO, 2011). It has resulted concentration of thousands of dwellings made of straw, mud, tin, and cardboard which are squeezed into small areas along the roads, railway line or open space in cities and towns. In many cities, heterogeneity in land management practices allows different patterns of development (on both public and private land). This leads to under-developed land parcels in different parts of the city. These parcels of land often become home to numerous poor residents in the form of slum and squatter settlements, without public services. (Lall et. al., 2006). According to report of World Bank over 800 million people in developing countries live in slum and squatter settlements, most of them being squalid, unsafe environments that create health and security problems (World Bank, 2003).

Slums in Kanpur are scattered throughout the city and compiled mostly in the core area and in the vicinity of railway tracks and few along the Kanpur - Lucknow highway. The gen-

eral composition of majority of slums comprises of scheduled caste, and other backward classes, belonging to the weaker section of the society. From habitation point of view, in general, slums located in the low lying areas, along open drains/ Nallah, tank beds and hazardous/toxic sites are susceptible to inundation, and other forms of disasters. The concentration of slums in these areas has not only led to poor living conditions for the slum dwellers but also responsible for the general deterioration of the living environment in the city. This is primarily due to lack of inadequate infrastructure services in these areas. Considering the fact that most of these slums are overcrowded, there is always constant pressure on the city infrastructure and resources. The living conditions in slums represent the worst condition of human being. Individuals and communities living in slums face serious challenges in their efforts to survive. As far as the physical location of the slums of Kanpur City; 120 slums are located in Non-hazardous/Non-objectionable sites, 57 slums are located along major transport alignment, 86 slums are located along open and storm water drains, 69 slums are located along river / water body bank and 28 slums are located at hazardous/ objectionable sites.

Objectives

1. To determine the quality of life (QOL) of different slums of Kanpur city
2. To emphasize the poverty alleviation programme and policies for slum dwellers of Kanpur city.

Methodology

The study is based on secondary as well as primary data. Secondary data are collected from Census, report of JNNURM and District Urban Development Authority (DUDA), Kanpur City. Primary data is collected through interview of 150 households selected randomly from slums of Kachimadaiya (Dada nagar), Silpi Nagar (Tat Mill), Hira Purwa (Chaman Ganj), Bangla cantt. (Mall Road) and Saipurwa (Jhakkarkatti) of Kanpur city. For determining the Quality of Life in slums Composite Index and Standard Deviation technique (Bracy, 1952. R.L. Singh and Rana P.B. Singh, 1979) have been used. To calculate the composite index 13 variables viz. Housing condition, Source of lighting, Fuel used for cooking, Literacy, Employment, Income, Medical Facilities, Sources of Drinking Water, Perception about Environment, Sanitation facilities, Sewerage Disposal facilities, Solid Waste Collection and Place of Dumping were chosen to determine Quality of Life. Statistically each variable was powered with X_1, X_2 etc. Reasonable weightages was assigned to each variable. Composite Scores of all variable are taken as X value and mean value is calculated. SD value is calculated by using the formula;

$$\sigma = \sqrt{\frac{\Sigma(X - \bar{X})}{N}}$$

Where, = Standard Deviation (SD)

x=Composite Score

x= Mean Value of Composite Score

N= No. of slums

After SD value is calculated, the quality of life under deviation is grouped and finally comparative analysis has been done to show QOL for different slums.

The study area

Kanpur city (26^0 28' 15" N latitude and 80^0 23' 45" E longitude), the industrial capital of Uttar Pradesh, occupies a very important position in Northern India. The city is nestled on the right bank of the river Ganga. It is as one of the major industrial centre of north India with its own historical, religious and commercial importance.

The area is drained by two river namely River Ganga and Pandu and the city lies between the doab of these rivers. Having an area of about 298.98 km^2, Kanpur is the fifth most highly-populated city of India. As per census of 2011, the total population of Kanpur city is 27,67,031 which it was 25,51,337 in 2001. It is administratively divided into 6 zones and 110 wards with an average population varying from 19,000 to 26,000 persons/sq. km. The annual growth of population is 8.26 percent during the period 2001-2011. One of the major factors for this kind of growth may be higher number of in-migration to Kanpur City from other areas. As per the survey conducted by DUDA in 2003 and the documents from KNN, the total number of slums in Kanpur is 390. According to the census 2001, the slum population was 0.368 million i.e. 14.5 per cent of the total Population of the city. As per KNN estimate in the slum population in 2006 was about 0.5 million which corresponds to 20 per cent of total population.

Kanpur is an industrial town having a dozen of textile mills, shoe manufacturing units, tanneries, a scooter unit, spice packaging units and various other small and medium scale industries. Many of the industries have closed down in recent past. It has led to increase in unemployment and urban poverty. In addition to this, more than twenty percent of the population in Kanpur stays in areas marred with unhygienic living conditions and lack of civic amenities. The urban infrastructure is not satisfactory enough to bring homogenous development in newly developed areas. The growth of housing stock is not able to keep pace with the population growth. This has increased the housing stock deficit which has given rise to slum dwellings

Distribution of slums

There are total of 412 slums in municipal judistriction of the city. Out of which 101 are notified slums and 311 are non-notified slums. The National Building Organization (NBO) Annexure primary survey was carried out in January, 2011 for all the 412 slums of the city. The total slum population of the city is 7,14,027 i.e. 26 per cent of the total population. The total number of slum households in the city is 1,52,124 which comes to 30% of the total household in the city. Among the slum population, 79 per cent belongs to OBC and SC category of social groups. Nearly 36 per cent are living below the poverty line (BPL).

Of the 412 slums in the city, 300 slums have existed for more than 50 years. Whereas, the total slum area is (1274.71 ha) which constitute 5 per cent of the total area of the city. Nearly 41 per cent of the slums are situated in areas less than 1 ha and 59 per cent of slums are spread over in area more than 1 ha. The total slum area under the ownership of urban local body is 344.6 ha, and the State Government ownership is 414.9 ha.

Sample slums

For the present study 5 slums namely Kachimadaiya, Silpi Nagar, Hira Purwa, Banlaw Cantt. and Sai Purwa have been selected. State of living condition of the localities have been considered for selection of sample slums. A total of, 150 responded selected from different slums (30 responded from each slum). Sai

Table 1: Status of Notified and Non-Notified Slums of Kanpur City

Notification Status			% Proportion of Slums		
Status	Notified	Non-Notified	Total	Notified	Non-Notified
No. of Slums	101	311	412	25%	75%

Source: Ray Primary Survey, 2011

Table 2: Comparison of city population and area against the slums

City Population	Slum Population	% of Slum population to city Population	City area (ha)	Total area under slums (ha)	% of slum area to city area
2,767,031	714, 027	26%	26, 223	12, 74.71	5%

Source: Census 2011, Ray Primary Survey, 2011

Purwa slum is located at Jhhakerkatti where condition and quality of life is worst than other slums. Kachimadaiya slum is located at Dada Nagar whereas, Silpi Nagar slum is located in Tat mil area. While, Hira Purwa and Banglaw Cantt is located at Chamanganj and Mall road respectively.

Parameters of quality of life

In the present study altogether 13 variables have been carefully chosen to determine the existing quality of life of slums dwellers living in Kanpur city.

Housing condition (X_1), housing condition is taken as a parameter of development and quality of life. Billions of people of the world are forced to live in inadequate housing, mostly in slums and squatter settlements. The type of houses basically depends upon the geographical environment as well as economic and social structure of the people (Sahay, 2006). The housing condition of Kanpur slums is worst, where one quarter of housing units are temporary structure. A deplorable scenario exists in sample slums, Out of 150 sample houses, 61.33 per cent houses are thatched (Juggi Jhopri), and whereas, Jhakkarkatti (Sai Purwa) slum has only 3.33 per cent are lower X_1 value than other slums.

Source of lighting (X_2) Electricity is also considered as a parameter of measurement of quality of life. It is seen that majority of sample households in slums use kerosene (74.67%) as a source of lighting, whereas, only 19 per cent household use electricity. But it is notable that majority of household have no legal electric connection.

Fuel used for cooking (X_3), fuel used for cooking is also measured as a parameter of quality of life. It has been reported that only 17.33 per cent household in selected slums use LPG for cooking purpose. Though majority of household have not got LPG connection, they use small cylinders of 2 kg and 4 kg of LPG for cooking. It is also seen that many of them use illegal electric connection for using their heaters for cooking. Kerosene, coal and cow-dug-cakes are other fuels which are used for cooking frequently in slums.

Literacy (X_4), literacy is one of the most significant indicators of socio-economic condition and quality of life. Due to wide spread poverty in the slum areas, illiteracy prevails and even it can be said that poverty exists because illiteracy exists (Tripathi, 2010). Although X_4 value is more or less similar in all sample slums ranging from 1.30 to 1.44, yet low literacy is found in Sai Purwa, Banglaw cantt and Hira Purwa slums.

Employment (X_5) in Kanpur slum areas, more than 24 percent (1,02,763) are unemployed of the total eligible person's for employment (JNNURM, 2006). Out of the total sample household, it has been reported that about 83 per cent respondents are self-employed, which shows that either they have their own small establishments or work as casual labourers. It is also seen that 17 per cent are working in private offices, whereas, no person has been reported to have government jobs in selected slums. It has also been observed that a large number of women living in slums are also employed. They are working mainly as maid in sev-

eral nearby colonies. The child labour is also in existence as one can see children working in collection of solid waste and its segregation etc.

Income (X_6) the income of slum household is also low. It is found that majority of the households (36 per cent) have an income of above Rs.1500 per month whereas, more than 29 per cent have income of less than Rs.1500. Sai Purwa (Jhakkarkatti) slum has been reported lower X6 Value than other sample slum.

Medical facilities (X_7) around half of the urban population in developing countries is suffering from one or more of the diseases associated with inadequate provision of water supply, sanitation and hygiene (*DFID*, 2001).Therefore medical facility is a significant parameter of measurement of quality of life. During field survey, it is observed that 49 per cent slum dwellers consulted traditional medical practitioner and 48 percent visited Government Hospital for health care services, while only 3 per cent visited private clinics. Hira Purwa slum (Chaman Ganj) having X_7 value of 2.44 shows better condition than other selected slums.

Source of drinking water (X_8) safe and pure drinking water is the basic need for life. The study reveals that nearly 66 per cent residents of slum areas use water from hand pump, while 34 per cent use water from municipal taps for drinking. The quality of water of hand pump is not up to mark. Almost all sample slums have similar X_8 values varying from 1.14 (Hira Purwa) to 1.5 (kachimadaiya and Sai Purwa).

Perception about environment (X_9), the quality of environment in slums of Kanpur city is extremely deteriorated on account of unhygienic condition. It has been reported that more than 97 per cent respondents are forced to live in extremely deteriorated environmental condition. Sai Purwa slum, having lower X value, (1.04) is worst among all the slums of the city.

Sanitation facilities (X_{10}) Sanitation is not only important for healthy living but also ensures a non-polluted environment. The majority of sample households have poor sewage disposal facility. Though, all the sample households have poor sewage facility, the condition of slums of Banglaw cantt with lower X_{10} value (0.74), is worst than other slum.

Sewage disposal facility (X_{11}), it has been reported that in sample slums, sewerage system is either non-existent or it is found chocked. The problem of blocked sewerage also exists in the slums where people stay in pucca houses. Most of the open drains in the slums are of very small size and are mostly blocked due to lack of cleaning and solid waste finding its way into the drains

Solid waste collection (X_{12}), there is no scientific system of solid waste disposal at the slum level. Of the total studied households 79.33 percent of the slums solid waste is collected by Rag pickers because disposal sites are either non-existent or poorly managed. In many slums solid waste, can be seen lying along the street or dumped into drains leading to health hazardous situation.

Place of waste dumping (X_{13}) there is no adequate arrangement for dumping of domestic wastes in Kanpur slums. The risk to human health are compounded in such slums, where garbage collection is non- existent and drainage tends to be poor, promoting the growth of insects and other diseases vectors (Sundari, 2003). The survey reveals that 56 per cent of households dispose their domestic waste along the road side, while, only 18 per cent households use the place allotted by the municipality for the dumping of domestic wastes

The qualitative and quantitative analysis have led to identification of four levels of quality of life have emerged. Kachimadaiya (Dada Nagar) slum enjoys high endurance of life, where some basic facilities such as drinking water is available and housing condition is better than other slums. Silpi Nagar (Tat Mill) and Hira Purwa (Chaman Ganj) slums have medium endurance of life and the conditions of these slums

Table 3: Selected variable for Quality of Life of slum dwellers of Kanpur city and their X value

Variable	Parameters	Indicator	Weightage value	Sai Purwa (Jhakarkatti)		Silpi Nagar (Tat Mil)		Bangla cantt. (Mall Road)		Kachimadaiya (Dada Nagar)		Hira Purwa (Chaman Ganj)	
				% of HH	X Value	% of HH	X Value	% of HH	X Value	% of HH	X Value	% of HH	X Value
X^1	housing condition	Pucca	4	3.33	0.13	0	0.00	0	0.00	3.33	0.13	0	0.00
		Semi Pucca	3	3.34	0.10	3.33	0.10	13.33	0.40	20	0.60	13.33	0.40
		Kaccha	2	0	0.00	50	1.00	10	0.20	33.34	0.67	40	0.80
		Thatched	1	93.33	0.93	46.67	0.47	76.67	0.77	43.33	0.43	46.67	0.47
X^2	Source of lighting	Electricity	3	16.67	0.50	6.67	0.20	0	0.00	30	0.90	23.33	0.70
		kerosene	2	70	1.40	90	1.80	20	0.40	63.33	1.27	70	1.40
		wood	1	13.3	0.13	3.33	0.03	80	0.80	6.67	0.07	6.67	0.07
X^3	Fuel used for cooking	LPG	5	13.33	0.67	3.33	0.17	16.67	0.83	30	1.50	23.34	1.17
		Electricity	4	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
		Kerosene	3	6.67	0.20	23.34	0.70	6.66	0.20	23.33	0.70	3.33	0.10
		Coal	2	0	0.00	13.33	0.27	26.67	0.53	16.67	0.33	23.33	0.47
		Cow dug cake	1	80	0.80	60	0.60	50	0.50	30	0.30	50	0.50
X^4	Literacy	Literacy	2	30	0.60	33.33	0.67	30	0.60	43.33	0.87	30	0.60
		Illiterate	1	70	0.70	66.67	0.67	70	0.70	56.67	0.57	70	0.70
X^5	Employment	Govt. employee	3	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
		Pvt. Employee	2	3.33	0.07	6.67	0.13	23	0.46	30	0.60	23.33	0.47
		Self employee (labourer)	1	96.67	0.97	93.33	0.93	77	0.77	70	0.70	76.67	0.77
X^6	Income	Above-1500	4	20	0.80	40	1.60	23.33	0.93	50	2.00	46.67	1.87
		1001/-1500	3	27	0.81	33.33	1.00	20	0.60	23.34	0.70	26.67	0.80
		501/-1000	2	43	0.86	16.67	0.33	50	1.00	23.33	0.47	13.33	0.27
		500	1	10	0.10	10	0.10	6.67	0.07	3.33	0.03	13.33	0.13
X^7	Medical Facilities	Govt. Hospitals	3	10	0.30	63.33	1.90	33.33	1.00	63.33	1.90	70	2.10
		Pvt. Hospitals	2	0	0.00	6.67	0.13	0	0.00	6.67	0.13	3.33	0.07
		Traditional practitioner	1	90	0.90	30	0.30	66.67	0.67	30	0.30	26.67	0.27
X^8	Source of Drinking Water	Hand Pump	2	50	1.00	20	0.40	36.67	0.73	50	1.00	13.33	0.27
		Municipal Water Supply	1	50	0.50	80	0.80	63.33	0.63	50	0.50	86.67	0.87
X^9	Perception about Environment	No Change	3	0	0.00	6.67	0.20	3.33	0.10	3.33	0.10	0	0.00
		Degraded	2	3.33	0.07	70	1.40	50	1.00	60	1.20	33.33	0.67
		Extremely Degraded	1	96.67	0.97	23.33	0.23	46.67	0.47	36.67	0.37	66.67	0.67
X^{10}	Sanitation facilities	Individual Toilet	3	0	0.00	0	0.00	0	0.00	3.33	0.10	0	0.00
		Public Toilet	2	6.67	0.13	36.67	0.73	3.33	0.07	60	1.20	43.33	0.87
		Open Defecation	1	93.33	0.93	63.33	0.63	66.67	0.67	36.67	0.37	56.67	0.57
X^{11}	Sewerage Disposal facilities	Average	3	0	0.00	6.67	0.20	3.33	0.10	10	0.30	3.33	0.10
		poor	2	0	0.00	6.67	0.13	13.34	0.27	26.67	0.53	10	0.20
		very Poor	1	100	1.00	86.66	0.87	83.33	0.83	63.33	0.63	86.67	0.87
X^{12}	Solid Waste Collection	By Govt.	3	3.33	0.10	20	0.60	26.67	0.80	30	0.90	23.33	0.70
		By Private	2	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
		By Ragpickers/ Scavenger	1	96.67	0.97	80	0.80	73.33	0.73	70	0.70	76.67	0.77

Source: Personal Survey, 2016

Level of Quality of Life

To determine the quality of life, qualitative analysis of data has been done. Aggregates of the entire variable have been taken. A composite score has been calculated by adding up all the variables for different slums separately. (Table 4)

Table 4 Composite Score for Slums of Varanasi City

Slum	X1	X2	X3	X4	X5	X6	X7	X8	X9	X10	X11	X12	X13	X	$X-\bar{X}$	$(X-\bar{X})^2$
Saipurwa (Jhakarkatti)	1.17	2.03	1.67	1.30	1.04	2.57	1.20	1.50	1.04	1.06	1.00	1.07	1.57	18.22	-3.392	11.50566
Silpi Nagar (Tat Mill)	1.57	2.03	1.74	1.34	1.06	3.03	2.33	1.20	1.83	1.36	1.20	1.40	2.06	22.15	0.538	0.289444
Bangla cantt. (mall Road)	1.37	1.20	2.06	1.30	1.23	2.60	1.67	1.36	1.57	0.74	1.20	1.56	1.94	19.80	-1.812	3.283344
Kachimadaiya (Dada nagar)	1.83	2.27	2.83	1.44	1.30	3.20	2.33	1.50	1.67	1.67	1.46	1.60	2.03	25.13	3.518	12.37632
Hira Purwa (Chaman Ganj)	1.67	2.17	2.24	1.30	1.24	3.07	2.44	1.14	1.34	1.44	1.17	1.47	2.07	22.76	1.148	1.317904
Total														108.06		28.77268

The mean value of composite score is 21.612 with standard deviation is 2.4. The levels of quality of life under deviation are grouped in the Table 5

Table 5: Level of Quality of Life in Slums of Varanasi City

Level of Quality of life	Statistical Value	Composite Score	Name of Slum
High Endurance	$\bar{X}+\sigma$ to $\bar{X}+2\sigma$	24.012 - 26.412	Kachimadaiya (Dada nagar)
Medium Endurance	$\bar{X}$ to $\bar{X}+\sigma$	21.612 - 24.012	Silpi Nagar (Tat Mill) and Hira Purwa (Chaman Ganj)
Poor Endurance	$\bar{X}-\sigma$ to $\bar{X}$	19.212 - 21.612	Bangla cantt. (mall Road)
Very Poor Endurance	$\bar{X}-2\sigma$ to $\bar{X}-\sigma$	16.812 - 19.212	Sai Purwa (Jhhakkarkatti)

are better than Banglaw cantt slum (Mall Road). Bangla cantt. (Mall Road) slum has low endurance of life. The basic facilities are very poor in this slum. The situation is worst in Sai Purwa (Jhakkarkatti) slum. Sai Purwa (Jhakkarkatti) slum has very poor quality of life, where toilet and drinking water facilities are inadequate. Though four levels of quality of life have been achieved, the condition of all slums is very poor.

Urban poverty alleviation schemes for slums of Kanpur city

In Kanpur, since 1992 District Urban Development Authority (DUDA) has implemented many schemes for poverty alleviation and bringing overall improvement of slums with the active involvement of slum dwellers. The details of schemes are as follows:

1. Urban basic services programme (UBSP) scheme

The Urban Basic Services Programme (UBSP) scheme was launched in 110 slums with the objective of bringing improvement in the standard of living of people living below poverty line. Special emphasis has been laid on women, children and other backward classes such as Scheduled Caste, Schedule Tribes, handicapped, old Persons etc. The main target of UBSP scheme is to fulfil the basic needs of urban poor through designed programmes of government and non-government organisations. The basic principle of UBSP scheme was community participation and to utilise the money provided under plans and schemes of different government departments. Under this scheme, Raja Purwa, which is a located in the southern part of Kanpur with a population of 5213, was undertaken for community financed operation and maintenance of water supply and sanitation programmes. A complex of 50 public latrines with a biogas plant and a pump for lifting water was constructed to provide 24 hour piped water for the latrines and bathing units in the complex as well as providing electricity to eleven stand posts in different parts of the slum. Similar projects have been carried out in twenty one other slum areas.

2. DUDA -SIFSA Scheme

SIFSA scheme has been launched in 1995 by *DUDA*. Under this scheme, in 78 slums, through 5 Satellite Centres, with the help of one doctor, 5 *ANM* and 80 community based distribution workers, they have tried to distribute door to door distribution of family planning tools and implementation of mother and child development scheme. Due to these efforts child productivity ratio (CPR) has increased from 3 to 35 percent

3. Nehru *Rojgar Yojana*

Under this scheme, two sub-schemes were implemented. They are small industry scheme i.e. giving loan of Rs.20,000 to SC population and Rs.16,000 for people belonging to general category, out of which Rs.5000 and Rs. 4000 was given as subsidy by DUDA and rest of the amount was provided as loan by bank. In addition to the provision of training to men and women for different industrial activities have also been made. Other scheme is housing development. Under this scheme loan has been provided for bringing improvement of their shelter and training to both men and women to bring improvement in their own houses.

4. Community structure scheme

This scheme is to provide blankets, sticks, glasses for old persons and clutches, hearing machines, artificial limbs etc. to disabled persons. These Programmes/camps were organised to provide necessary advice for leaving the habit of drinkings, alcohols usings, drugs etc. Presently this scheme has distributed stitching machin to widows in 10 slums

5. National Slum Development Programme (NSDP)

The National Slum Development Programme (NSDP) was started in 1996-97 to provide the basic services in 390 slums covering 4.67 lakh populations. It includes the entire

component covered under UBSP schemes with special emphasis on community participation. Under UBSP scheme, the emphasis has been laid down the following aspects:

a. Education programmes such as opening of Anganwadi centres (220) for children in the age group of 3 -6 years and non-formal education centre for 8 -15 years old children which has benefited 8,800 children of 3 -6 age group and 2,100 of 8-15 years age group;

b. Special health improvement programme was launched to improve the health of the children and women i.e. provision of nutritious food to 8,800 children and health check-up of 0-3 years of children and vaccination to 7,000 kids and 2,400 pregnant ladies for keeping them free from different diseases.

c. Community Structure Scheme i.e. providing tricycle (400) to handicapped ladies and men and eye check-up camps for old people;

d. Economic activities such as formation of self-help groups (300) and training to women for different small scale industries i.e. tie and dye, bookbinding, repair of fridge and T.V, food preservation, computer, short hand and typing training and marketing

e. Environment and cleanliness through tree plantation and their maintenance

f. Development of park i.e. planting trees and its maintenance, installation of lights using solar energy by slum dwellers

6. *Swarna Jayanti Shahri Rojgar Yojana*

The main aim of SJSRY is to provide self - employment to poor unemployed and partially employed person which is provide under Urban Wage Employment Programme (UWEG). Under this scheme, 100 DWCUA (Development of Women and Child in Urban Area) groups and 12 production centre have been formed. This scheme also provides annexure for skill development for 2000 self-employment beneficiaries and provide loan for micro enterprise for 5000 self-employment beneficiaries as well. It has been observed during the visits to different slums in Kanpur that though many efforts, as explained above, have been taken under different schemes to bring improvement in slums and to improve the standard of living of people below poverty line (BPL) which has benefited poor community, but a lot has yet to be done. Some of the issues such as poor quality of water, clogging of drains, non-availability of primary schools and dispensary, poor quality of house construction, stoppage of physical infrastructure schemes leading to poor quality of life in certain slums exists which need to be tackled.

Conclusion

As the current pace of urbanization is bound to accelerate due to the factors of rural-urban migration and in situ population growth, we need to put our minds together to find meaningful solution to these problems. If urbanization has to act as a positive force in economic development, other should be focused on urban and regional planning system that is inclusive and does not exclude the poor and informal sector. The present study highlights that, low and very low quality of life exists in the slums of Kanpur city. The housing, literacy and medical facilities are poor. Lack of piped water supply in the slum areas leading to high dependence on ground water. It is further observed that lack of proper waste disposal facility and poor sewage system lead to pollution and health related problems. Level of disparity is related to the socio-economic setup of the city. Although Government has launched several programme and policies related to poverty alleviation for slum dwellers yet these are not up to mark. However, quality of life is low in all sample slums but it varies from one slum to another. The suggestion there-

fore is to improve the socio-economic condition which will result improvement in quality of life in slums. For this, there is a need of strengthening the role of NGO's and private sector in slum up-gradation, participatory planning for slum areas, gender based planning and other inclusive planning measures. Finally, there is a need of holistic work to understand the above mentioned issues at city level as well as to analyse linkage among proliferation of slums, 'urbanization of poverty' and 'poverty in planning'. In principle, cities offer a more favourable setting for the resolution of social and environmental problems than rural areas (UNFPA, 2007). The future of humanity depends on how we deal problems and challenges of urbanisation and unequal development.

References

Census of India , 2001, (Series 1) Slum Population 640 Cities and Towns Reporting Slums, Vol.1, Published by Registrar general and Census Commissioner, India, New Delhi

Census of India, 2011, Town Village Directory, http://www.censusindia.gov.in/2011census/censusdata2k11.aspx

Das, Biplab, Khara, Utpal, Giri, Pradip, Bandhyopadhyay, Aditya, 2012, The Challenges of slum Development in India, A Case Study of Melatala-Das Nagar Slum Area of Howrah Municipal Corporation, *International Journal of Advance System and social Engineering Research*, Vol. 2, No 1, pp. 22-27

Government of India, 2002a, *Report of the Committee on India Vision 2020*. New Delhi: Government of India.

Government of India, 2002b, *National Human Development Report 2001*. New Delhi: Government of India.

Government of India, 2006, Towards faster and more inclusive growth: *An approach to the 11th Five Year Plan: 2007-2012*. New Delhi: Government of India.

Guinness, Paul and Nagle, Garrett, 1999, *"Advanced Geography: Concepts and Cases"*, Hodder and Stoughton, London.

Indian Institute for Human Settlements (IIHS), website main page, http://www.iihs.co.in

Jha, D. and Tripathi, V.K., 2014, Quality of Life in Slums of Varanasi City: A Comparative Study, *Transaction*, Vol. 36, No. 2, Pp. 171-183

JNNURM, 2006, *Kanpur City Development Plan*, Jawaharlal Nehru National Urban Renewal Mission.

Kabeer, Naila, 2010, Can the MDGs provide a pathway to social justice?: The challenge of intersecting inequalities, Institute of Development Studies, University of Sussex, UK

Kanpur Master Plan, 2021, *Kanpur Master Plan-2021*, Department of City and village Planning, Kanpur Nagar Nigam, Kanpur

Kaushik, S.P. and Sharma, Vinod, 2010, "Evaluation of housing and sanitation condition in slums area of industrial city, Panipat", *Transactions: Journal of the Institute of Indian Geographers*, Vol. 32, No. 2.

Kumra, V.K., 1982, Kanpur City: A Case in Environmental Pollution, *Tara Book Agency*, Varanasi, pp.1-12

Lall V. Somik, Mattias K.A., Lundbery, Zmarak, shalize, 2006, Implication of alternative Policies on Welfare of Slum Dwellers: Evidence From Pune, *India, Journal of Urban Economics* (Science Direct), Vol. 63, pp. 56-73

Mallick, Rabial, 2001, *"Urban Poor in Calcutta"*. achr@loxinfo.co.th

Ministry of Urban Development (MoUD), 2014, *City Sanitation Plan for Kanpur City*, Kanpur Nagar Nigam, Govt. of India

Mishra, R.N. and Sharma, Pawan kumar, 2002, "Quality of life in human settlement-*A case study of Jaisalmer District", Studies in Geography*, Jaipur

Narayana, M. R., 2008, "Education, Human Development and Quality of Life: Measurement Issues and Implications for India", Published online: *Springer* Science+Business Media B.V. 2008

National Building Organization (NBO), 2011, *Report on the Committee on Slum Statistics/census*, Ministry of Housing and Urban Poverty Alleviation, Govt. of India, New Delhi.

Rao, P. Padmanabha, 1999, "Urbanization in Telangana and Its Future Implications", Rao, R. Ram Mohan and Simhadri, S. (eds): Indian Cities: Towards Next Millennium, Rawat Publication, Jaipur.

RCUES, 2013, Slum Free City Plan of Action Plan-Kanpur, Regional Centre for Urban and Environmental Studies, *Osmania University, Hyderabad*.

Sahay, Anuradha, 2006, "Quality of life of slum dwellers: A case study of Bindtoli, Patna west", *Annals of the National Association of geographers, India*, Vol. XXVI (No. 2).

Singh, O. P., 2009, Philosophy of Development, Quality of Life and Philosophical Geography, *Journal of Regional Science and Development*, Vol. 4-5, No. 1-2, June-December 2004-05,The Himalayan Geographical Association, Nainital.

Sirgy, J., Michalos, A. C., Ferriss, A. L., Easterlin, R. A., Patrick, D., and Pavot, W., 2006, "The quality-of-life (QOL) research movement: Past, present, and future", *Social Indicators Research*, Vol.76, pp. 343-466.

Smith, O.M., 1977, *"Human Geography: A Welfare Approach"*, Edward Arnold Publishers sheet, London.

Sundari, S., 2003, "Quality of Life of Migrant Households In Urban Slums" in Martin J. Bunch, V. Madha Suresh and T. Vasantha Kumaran, eds., Proceedings of the Third *International Conference on Environment and Health*, Chennai, India, 15-17 December, 2003. Chennai: Department of Geography, University of Madras and Faculty of Environmental Studies, *York University*, Pages 537 - 552.

Suresh, V.: "India Vision, 2020" www.urban.India .

The Economic Intelligence Unit of Quality of Life, www.economist.com/media/pdf/QUALITY_OF_LIFE.pdf

Tripathi, V.K., 2010, "Socio-Economic Status of Urban poor Living in Slums of Varanasi City", *Bhootal Digdarshan (Earth Science Review)*, Vol. 1, No. 2, Bhaugolik Vikash Sodh Sansthan, Gorakhpur.

Tripathi, 2011, "Urban poor living in slums of Varanasi city", Sharma, P. R., Yadava R.S., Sharma V.N.(eds.): *Research methodology: Concepts and Studies*, RK BOOKS, New Delhi, Pages 493-515.

U.P. Government: Varanasi Master Plan (2011).

UNDP 1990. *Human Development Report* 1990. New York: Oxford University Press.

UNDP 2007. *Human Development Report* 2007/08. New York: Palgrave Macmillan.

UNFPA 2007. Linking Population, Poverty and Development, http://www.unfpa.org/pds/urbanisation.htm

United Nations 2006. *"The Millennium Development Goals Report: 2006."* United Nations Development Programme, www.undp.org/publications/MDGReport2006.pdf

World Bank 2003. *Upgrading Urban Communities: A resource for practitioners*, available online at http://web.mit.edu/urbanupgrading/upgrading/ Accessed December 12, 2003.

●●●