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THE KONKAN GEOGRAPHER
Vol. No.05 Nov. 2013
ISSN 2277 – 4858

First Historian – Balshastri Jambhekar

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In 1836 Bal Shastri Jambhekar wrote the known as Bhoogol Vidya and published it in which he dealt with topics as "the size of earth, big islands, continent countries, mountains, seas, rivers, capitals cities."01 They tiny book printed at the press of Ganpat Krishnaji from Bombay in 1836, the cover page of book bears no name of the writer. The new edition of the same book published at Vishram bagh Press in1849, which had mentioned that it was discovered by Major Candy and has no name Balshastri. Biographer Mr. Jambhekar therefore opened that "the book Boogol Vidya had not been written by Bal Shastri.02 Boogol or little Geography by Vishnu Shastri costing Rs. 3 has been mentioned in the first annual report of the Board of Education, Bombay.03 But a copy of the book of 1850 edition is available in Mumbai Marathi granth Sangrahalaya, Mumbai. The cover page of the book is bearing as Bhoogol Vidya, of 48 pages indicates as its author Bal Shastri Jambhekar, it was printed at Ganpati Krishnaji Press in 1850. There are 8 chapters in this book as on Asia, Africa, Europe, America, Australia and Polynesia as well as the earth and the length and breadth of the country. On this evidence catalog writer Mr. S.G. Date and Me. G.B. Sardar stated that "the book was written by Bal Shastri Jambhekar." Bal Shastri Jambhekar could often write about Geography, Geographical invention in his Durpun. In 1832 he wrote about a comet in his magazine,

Durpun as under:

We have heard that a comet may be expected to be visible to us about October next, and that it is lightly, that it will be dangerous to some part of the globe, on consequence of its passing much near the surface of our earth. May we ask men of the science to inform us how for then fear is founded upon reason? The new education policy made history written indispensable, which started by the translating into Marathi from the English Books authored by Grant Duff., Elphinstone, Murray, MacDonald, Pinnock, Tod and some others. "Although the objective of the

translation was to meet the need and demands of school text book, the translation and original books of Duff and Elphinstone were useful to other readers also.

In 1846 Bal Shastri Translated in Marathi, The history of India written by Elphinstone. It had four editions up to 1872. For the next edition, Jambhekar was no more in life. Major Candy, therefore changed major part of the manuscript and the language published it. This has come to knowledge from the letter written to Bal Shastri by the Bombay Native school and School Bank of Committee on November 22,1845. This book 164 pages and contains ten chapters. It was written for the school students. "In its introduction Jambhekar proved that the knowledge of our own country is now much essential to all." The second book of Shastri, History of British India, was corrected and printed by Major Candy in 1849. The book has total 274 pages contains 26 chapters with index and schedules a copy of the second edition printed in 1854. Jambhekar stated in his book the history of British India, that the were came to India for trade. Initially they never intended to conquer the territory in the country, as they were offend by the parliament and Company Directors in this regards but for the protection of the trade and their establishment, they felt their sway on the around the ports. Whosoever stonewalled and trouble them they vanquished them and conquered their territories.

The Bombay native education Society published in two volumes History of England during 132-34. On the cover page of the book the following message appeared – History of England – translated for the Bombay Native Education Society into the Marathi Language Vol. I, Poona Lithographer at the press of Department of public instruction 1832. It bears no name of the writer on the basis of available sources it is said that the book was written by Bal Shastri Jambhekar only. More over the Hari Keshaveji has eluded the same in his England report in 1838. As a matter of fact in 1831 -32 Mr. Robert cotton Money the then secretary of the society and its assistant, Bal Shastri Jambhekar together translated Goldsmith's History of England in to two volumes and lithographed, this is stated by Dadoba Pandurang in his Autobiography very clearly. This is also substantiated by the Government Communication. Mr. K B. Kulkarni therefore has castigated Mr. G.G. Jambhekar for having given sole credit to Bal Shastri and exclusion of Mr. Money. Bal Shastri's labor in connection with Dnyaneswari must be deemed to from a geat land mark in the history of Marathi

literature. For it was he who brought out for the first time the fine lithographed edition of that voluminous and celebrates old classic so far back as 1845. "When even some of the smallest work of the more popular Marathi poet had not been printed, while his attempt to note difference reading in its text shows remarkably that he anticipated critical Marathi scholarship by more than half a century."

As a remarkable scholar with varied acquirement in literature, Bal Shastri also used to take active part in Bombay Branch of Royal Asiatic Society after it had been formed in 1834,"though Bal Shastri was never actually a member of that association." Bal Shastri had therefore to send his paper to the secretary who then read them out before the meetings and published them in the journal of the society. This journal was established in 1841, and it is certainly worth of note, that to eight out of eleven issues published during his life time. Bal Shastri contributed valuable papers on Indian inscription. Mr. G. G. Jambhekar remarked that "Bal Shastri was first and only native scholar of his time to write upon Indian antiquities not only on his side of the Presidency, but in the whole of India. Bal Shastri may be rightly styled the father of Indian Historical Research in this country. Bal Shastri Jambhekar wrote in the journal of Asiatic Society about the inscriptions and Bronze plate found in the outside the Konkan region. Some of the member of the society especially English scholar, who already turned towards the historical research. Bal Shastri did not read only printed notes and articles, in one of his report, he stated that he read Pedigree of Rashtrakuth Family; he could find some lapses in it. In this respect Mr. Orlabar says that Bal Shastri was not only translating English books in to Marathi to spread knowledge but he was also an authority in historical research due to the close contact with English scholars. Bal Shastri has noticed up assistance of Dr. Bhau Daji in his own work of research. This has been evidence severally. Once Jambhekar wrote in the journal of Asiatic society on "Notes on specimen of Iron-Ore from the vicinity of the Malvan. But the article was written by Dr. Bhau Daji only because Bal Shastri has himself prologues the article as below – "On February 5, 1844 the following description of its mineralogical and chemical properties has been supplied to me by Bhau Daji, the assistant to the chemistry Professor in the elphinstone Native Education Institution, who examined it at my request." Mr. R.R. Bhagvat said that Bal Shastri started logical construction of study

after reading the inscription available in our country. This work was continued afar him by Dr. Bhau Daji, Rao Sahib Mandlik, Ramakrishna Bhandakar ,

Mr. T. Telang and Mr. Shankarrao Pandit. In the course of preface of the society's journal its learned editor, Pro. A.B. Orlebar, mourned his loss in the words-

"In the death of late bal Shastri remarkable among the native community for his great talent and acquirements. The society has lost a valuable and most useful contribution of Indian inscriptions of that the branch to which Prof, lesson has been particularly called the attention of our members, as being the only means of obtaining a clear and authentic knowledge of the early history of this country.

Coming to the conclusions, when we survey this whole tremendous literary output of Bal Shastri Jambhekar by the time he was just 33, we cannot but be struck with wonder at its singular variety and volume. In judging, how ever the quality of his work and his permanent contribution to Marathi literature, we must not ignore the fact that his principal role had never been that of s literature only, but that of a pioneer educator of his ignorant and backward countrymen, though it has been universally acknowledge that he is one of the first few eminent makers of modern Marathi prose.

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THE KONKAN GEOGRAPHER
Vol. No.05 Nov. 2013
ISSN 2277 – 4858

Trends and Patterns of Tourism Development in Gods Own Country, Kerala: AGeographical Analysis

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Abstract

Kerala is one of the most popular tourist destinations in the country. Its unique culture and traditions as well as the geographical features have made it the most sought after tourist destinations in the world and one of the fastest growing industries in the state. The tourism industry has become a major contributor to the state's economy. Hence, it is interesting to study the trends of tourism development in the state. It is observed that the tourism industry has developed in the state in near past and is yet in the developing stage. Every national and international issue affects the tourism industry in the state. The standard statistical techniques have been used for the study. These techniques have been applied with using SPSS software.

Keywords: Tourism, Kerala Tourism, Problems of Kerala Tourism, Trends of Kerala Tourism.

Introduction:

The tourism industry has grown enormously over the last 50 years in the world, and there are hardly few countries which are unaffected by it. Tourism means the principle of traveling for pleasure. Many people are in the habit of traveling over different countries in order to see the places of their respective interests like the structures of sculptural beauty, attractive spots of nature and so on. Places across the globe have grown dramatically not just in interest, but also invitation. The world's ever fastest growing economic sector, Travel & Tourism, has also played a dramatic role in bringing the world so much closer together. Tourism is also a major source of income and employment, which has made it one of the major industries in the world. This industry has grown quickly and changed at an incredibly fast rate. It does present a significant potential for realizing benefits in terms of the conservation of biological diversity and the sustainable use of its components.

Scope Of The Study:

Kerala is one of the most popular tourist destinations in the country. Its unique culture and traditions as well as the geographical features have made it the most sought after tourist destinations in the world and one of the fastest growing industries in the state.

The tourism industry has become a major contributor to the state's economy. . The beaches at Kovalam and Varkala, the hill stations of Munnar, Nelliampathy, Ponmudi and Wayanad and national parks and wildlife sanctuaries at Periyar and Eravikulam National Park, the "backwaters" region—an extensive network of interlocking rivers, lakes, and canals-that centre on Alleppy, Kumarakom, and Punnamada, heritage sites, such as the Padmanabhapuram Palace, Hill Palace, Mattanchery Palace have all become renowned centers of attraction and see continuous inflow of tourists from all over the world.Hence, it would be interesting to study the trends and patterns of tourism development in the state.

Objectives:

1. To obtain an overview of the historical development of tourism in Kerala.
2. To understand the trends and pattern of tourism in the state.

Research Methodology And Database:

The present study is based on secondary data. It has been collected from Wed site of Kerala Tourism, Department of Tourism, Kerala Tourism Development Corporation(KTDC), District Tourism Development Council(DTPC) and News papers. The standard statistical techniques have been used for the study. The data are also supplemented by some published and unpublished sources. Direct oral investigations are also carried out to make the study more significant.

Definition of Tourism :

The World Tourism Organization (WTO) states that tourism is “the activity of people who travel to places outside their customary surroundings and stay there for leisure, business or other purposes for no longer than one year without interruption”.

Analysis:

Kerala, situated on the tropical Malabar cost, is one of the most beautiful places of the world . It has been marked as one of the ten paradises by the National Geographic Traveler and has been described as the “God’s Own Country” by the National Geographic Society. **:** Kerala consists of 1.18 % India’s land mass and lies between north latitudes 8°18' and 12°48' and east longitudes 74°52' and 72°22'. It is an longitudinal segment with Arabian sea at the west and Western Ghats at the east and its coast line stretches to 580 k.m north to south. Its total area 38.863 km2 varies in width from 32-120 k.m and could be divided into three distinct climatic regions as western low lands, eastern high lands, central midlands . Kerala’s climate is mainly wet and heavily influenced by the seasonal heavy rains brought by the monsoon.

An Overview Of Historical Development Of Tourism In Kerala :

The state of Kerala was established in the year 1956, under the States Reorganization Act by joining the Malayalam speaking regions under the princely kingdoms of Travancore and Cochin with the Malabar district and Kasargode, and South Kanada. . The stone age carvings at Edakkal caves shows the existence of prehistoric civilizations and settlement in Kerala region. By 3000 BCE Kerala had found its place in international trade as a major spice centre ,making the base for tourism. It was recorded that Kerala could be reached in 14 days' time from the Red sea ports in Egyptian coast purely depending on the South West Monsoon winds. Hence, in one way, Trade was the source for tourism in the state, though strategic planning was much later.

Strategic Planning

- ‘Soul searching’ in the mid-’80s :

Kerala went through serious ‘soul searching’ in the mid-’80s, when the state woke up to its tourism potential. the initial planning and strategy was ‘not put down in paper’. The state held several conclaves and meeting the industry.

- Tourism as an industry in 1986 :

In 1986, recognizing in its importance, Kerala declared tourism as an ‘industry’ to be considered a core sector for priority development and to be given the status and concessions eligible for other industrial projects.

- Tourism Policy 1995 :
  - The key emphasis of the Tourism Policy highlights focus areas for the state.
  - Promoting tourism with the tourist and the pilgrim as the focus.
  - Providing special facilities to the traveler Improving efficiency of the industry
  - Ensuring participation of stakeholders, including the travel trade and tourism industry.
  - Providing quality services to all consumers and stakeholders.
  - Improving, diversifying and expanding the marketing of the tourism products.
  - Poor implementation of the Policy, 1995.
- Tourism Vision 2025

The tourism vision was announced in 2001. The action plans are announced for the short-, medium- and long-term to develop tourism in Kerala.

Trends In Domestic & Foreign Tourist Arrivals Into Kerala

Table 1.1 shows the trends in domestic tourist arrivals in the state, which shows that during the year 1999 – 2011, the(FTA) foreign tourist arrival has increased from 202173 to 557258 respectively. The percent in variation shows a negative growth for the year 2001 by -0.53 and -6.96 in the year 2009. The global recession was observed in the year 2008 which affected the tourist industry in the stat.

Table 1.1

Trends In Domestic & Foreign Tourist Arrivals Into Kerala(1999 - 2011)

Year	FTA		DTA	Variation (%)
1999	202173	6.44	4888287	9.07
2000	209933	3.84	5013221	2.56
2001	208830	-0.53	5239692	4.52
2002	232564	11.37	5568256	6.27
2003	294621	26.68	5871228	5.44
2004	345546	17.28	5972182	1.72
2005	346499	0.28	5946423	-0.43
2006	428534	23.70	6271724	5.47
2007	515808	20.37	6642941	5.92
2008	568929	16.11	7591250	14.28
2009	557258	-6.96	7913537	4.25
2010	659265	18.31	8595075	8.61
2011	732985	11.18	9381455	9.15

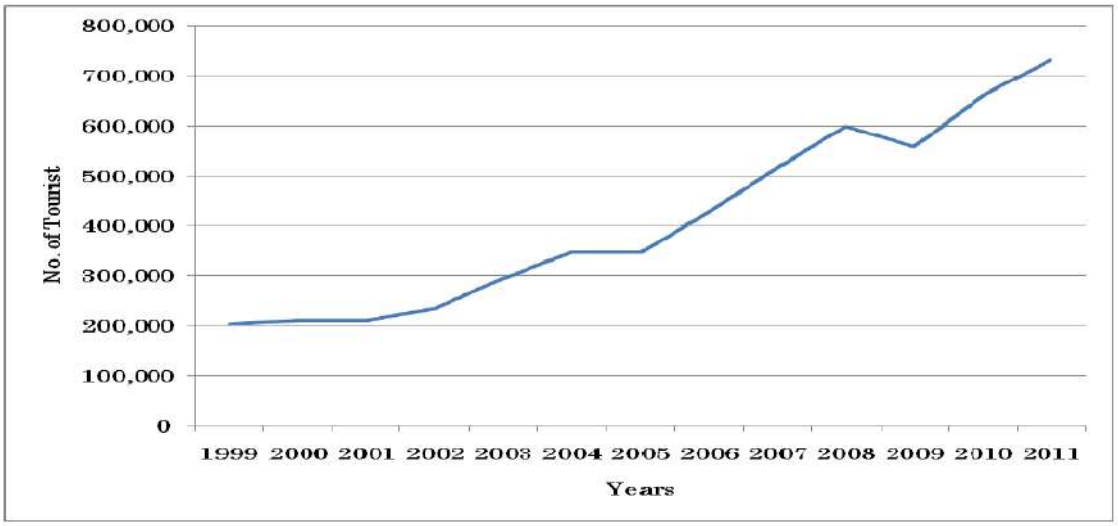
Source: Prepared by the investigator.

Even domestic tourist arrival has been affected by the Gobal recession as the variation between the consecutive years (2008-2009) is very high, from 14.28 to 4.25, around 10 % difference. While the most notable part of domestic tourist arrival is its negative growth of the industry for the year 2005. The major reason behind it is of the Deadly Tsunami (2004), which shook the country as a whole, while leaving fear in the mind of one and all in the nation.

Foreign Tourist Arrivals In Kerala During 1999-2011

There is stagnation in the growth of FTA in the state for the year 2004- 2005, due to the fear of Tsunami, figure 1.2 clarifies. Soon the industry took steep growth, till the recession problem ,which was observed world over. The two of the western countries, United Kingdom and Unites States of America, from where the Foreign tourist are higher, were the most affected countries.

Figure F.1
Foreign Tourist Arrivals In Kerala During 1999-2011.



Source: Prepared by the investigator

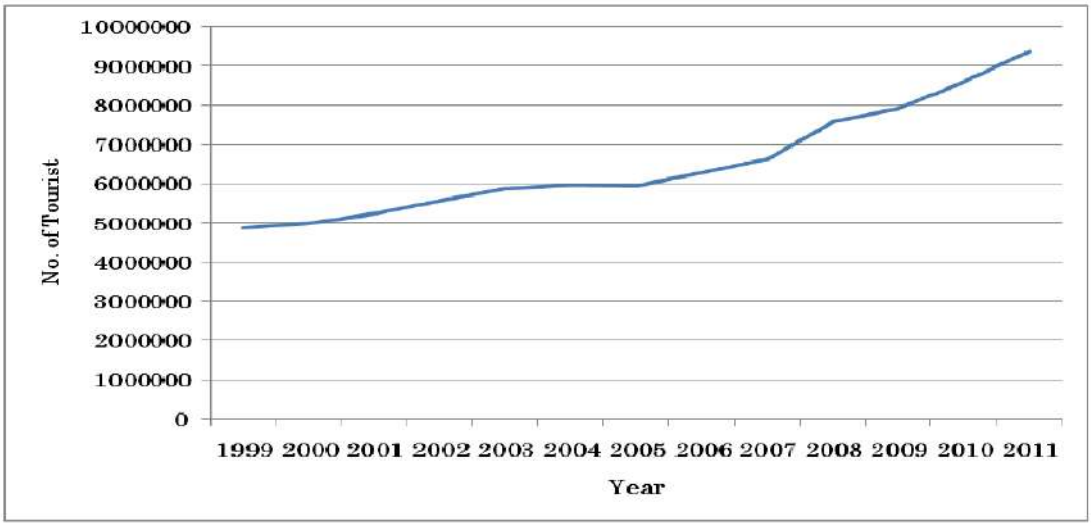
Foreign Tourist Arrival in the state is constant during the year 2004 to 2005, which is due to the natural disaster which hit the state in 2004, creating fear among the people around the world. Then for few years, i.e., from 2005 to 2008, the Foreign Tourist Arrival(FTA) has grown every year. There is a fall in the FTA during 2008 to 2009 as a result of global recession.

Domestic Tourist Visits In Kerala During 1999 To 2011

Domestic Tourist Arrival , for the year 1999 to 2011, shows nominal growth. However, the stagnation in the industry is definitely observed for the year 2004-05, due to the Natural Disaster called Tsunami. Intra-nation tourist were not much affected by the recession and shows normal growth of Domestic tourist arrival (Figure F.2)

Figure F.2

Domestic Tourist Visits In Kerala During 1999 To 2011



Source: Prepared by the investigator.

Conclusion:

Kerala State's unique culture and traditions as well as the geographical features have made it the most attractive tourist destinations in the world.The state of Kerala was established in the year 1956, under the States Reorganization Act by joining the Malayalam speaking regions under the princely kingdoms of Travancore and Cochin with the Malabar district and Kasargode, and South Kanada.By 3000 BCE Kerala had found its place in international trade as a major spice centre ,making the base for tourism.In 1986, Kerala declared tourism as an 'industry'.. The Tourism industry of the state was effected by the natural disaster, Tsunami in 2004 and by Global Recession in 2008.It showed fall of tourist arrival in the state. Overallthe trend in foreign tourist arrival and domestic tourist arrival, was observed to be slow but steady.

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THE KONKAN GEOGRAPHER
Vol. No.05 Nov. 2013
ISSN 2277 – 4858

Status of water supply – A geographical analysis Lucknow city

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Abstract

The high death rate, infant mortality rate, sickness rate and poor standard of health are in fact largely due to defective environmental sanitation. Improvement of environmental sanitation is therefore crucial for the prevention of diseases and promotion of good health of individual and communities. Inadequate water supply increases the risk of schistosomiasis, skin and eye infections and guinea worm diseases.For the analysis of the risk factors of indoor water pollution and sanitation condition several variable has been selected like irregular water supply, contaminated supplied water quality, common source of drinking water, mode of storage of water in open container. Among the entire variable, it is discerned that the intensity of pollution is more pronounced in peripheral, industrial and central i.e. old part of the city. The main objective of the present analysis is to analyse the status of water supply. Some suggestions and recommendations have been proposed to over come the problem of water supply.

Key words:diseases, discerned, insurmountable,

Objectives

The main objective of the present analysis is to analyse the status of water supply. Some suggestions and recommendations have been proposed to overcome the problem of water supply and its contamination.

Data Base And Methodology

To establish the relationship between indoor air pollution variables and the diseases, primary sources of data has been generated through conducting field survey taking one per cent house hold from each wards of the city, i-e is 110 wards. The numbers of house holds are varied from wards to wards depending upon their size. Therefore the number of house are selected variedly from each wards, thus the total number of houses have been selected based on purposive random sampling i.e. 3500 houses out of 300500 residential and residential cum commercial houses. Detailed questionnaire has been prepared for obtaining the information from the respondent. Different age group, men and women have been interviewed, basically children working women in the kitchen and old people who spends their maximum time at houses. During the course of survey affected and non affected people were interviewed. These information have been supplemented with the information regarding disease affected people are taken

from nearest private nursing home, govt. hospitals and medical colleges. The information obtained from primary sources has been organized, categorized, analyzed through standard statistical techniques.

Study Area

Lucknow city formed the central part of the province of *Oudh* and capital of Uttar Pradesh occupies central position of the district. It is situated along both side of the river Gomti- a tributary of the river Ganga. It lies in between $26^{o}30'$ to 27^{o} $10'$ North latitude an $80^{o}30'$ to 81^{o} $13'$ East longitude. It covers an area of 2544 sq. km and the area of city is 310.104 sq km excluding cantonment area. It has 4,589,838 million populations with the density of 14800 persons per sq. km. It is surrounded by the districts Sitapur in the North, Barabanki in the East, Raibareli in the South, Hardoi in the North West and Unnao in the South West.

Spatial Analysis of water Supply

Many cities in India and abroad are facing seemingly insurmountable problem of securing safe drinking water and sanitation Lucknow city is no exception. To evaluate the existing condition of water resources for drinking, its network, sources and level of pollutant content as well as their effects on health. Some selected variables related to system of water supply, its condition and drainage system of the study area as well as the probable water born and water related diseases has been taken into consideration and find out the relation ship between them. These variables are irregular water supply, contaminated supplied water quality, common source of drinking water, and mode of storage of water in open container. The sampled houses are categorized into five group i.e. very high, high, medium, low and very low.

Irregular Water Supply

Lack of sufficient quantity of domestic water supply causes poor hygiene which caused diarrhoeal, hepatitis A, typhoid, skin and eye infection. Therefore inadequate water supply is a high risk factor for health of the people. Water is the biggest single crisis facing India 200 million people are at risk due to the deficit of safe and clean drinking water. 30 per cent of the city population has no water supply and facing water crisis.

Table 1: Irregular Water Supply in Lucknow city 2010-2011

Category	Ranges	Total Wards	Percent of wards
Very High	**75.56-95.5**	**25**	**22.73**
High	**56.23-75.55**	**19**	**17.27**
Medium	**40.23-56.22**	**16**	**14.55**
Low	**28.7-40.22**	**30**	**27.27**
Very Low	**10-28.6**	**20**	**18.18**

Source: Based on sampled House Hold Survey 2010-2011

The spatial analysis of irregular water supply reveals that 40 percent wards consisting 44 wards of the city they are Mallahitola, Daulatganj, Kashmiri Mohallah, Triveni Nagar, Chinhat, Jankipuram, Ismailganj, Haiderganj, Raza Bazar, Kesri Khera, Kharika, Ibrahimpur, Sarojininagar etc. In these wards mostly the households reported that they don't get water from municipal water supply regularly ranges from 56.23 per cent to 95.5 per cent. Though these wards have been connected with networking of municipal water supply but they are not availing these facilities because of inadequacy of water supply they are fully depend upon underground water through hand pumps and booster pumps. Under medium range of inadequate water supply households reported 40.23 to 56.22 per cent spread over in 14.54 per cent wards of the city, which accounts 16 wards of the total wards. Low to very low percentage of inadequate water supply come under the range from 10 cent to 40.22 per cent are spread over in 45.45 per cent wards of the city which accounts 50 wards such as Labour Colony, Ambedkar Nagar, Jal Sansthan, Aliganj, Maha Nagar, Hazratganj, Gomti Nagar, Om Nagar, etc. These wards found mostly in central part of the city and nearest to the water works so they get water form municipal water supply regularly. The analysis reveals that the area under irregular water supply are found in north western part of the city i.e. lies CIS Gomti side, and northern and southern peripheral zone of the city.

Public Source of Drinking Wate

The people get drinking water form municipal water supply. GomtiRiver is the main source of municipal water supply and also underground water. Both the sources are polluted, surface water get more polluted rather than the underground water. During the field survey it is observed that those people don't have municipal water connection. They get the water from road side tap installed in the connection pipeline, or from the broken pipes of pipelines which passes through either along rod side or through the Nalas. the problem get aggravated as pipeline and broken pipes, which results mixing of contaminated water, mud from nalas and surface sources.

Table2: Public source of drinking water supply

Category	Ranges	Total Wards	Percent of wards
Very High	**22.02-45.6**	**22**	**20**
High	**15-22.01**	**22**	**20**
Medium	**11.52-14.99**	**22**	**20**
Low	**8.1-11.51**	**23**	**20.91**
Very Low	**3.02-8.0**	**21**	**19.09**

Source: Based on sampled House Hold Survey 2010-2011

Here we discussed about spatial pattern of public sources of drinking water in Lucknow city. In the 40 per cent wards of the city which accounts 44 wards Garhi Peer Khan, Amberganj, Daulat Ganj, Mallahitola, Kanhiya Madhopur, Haider Ganj, Chinhat, Kashmiri Mohallah, Bhawaniganj, Jankipuram, DaliGanj etc. households in the absence of piped water connection in the premises and irregular water supply rely on water supply tap installed at public place.

Ranges from 45.5 to 15 come under high to very high category. The area mainly comprises of people belong to the very low to low income group, they don't have piped water connection in their houses, get the water from public sources. Public source of drinking water includes piped water connection on road side, hand pump on road side and open wells. Generally people get drinking water from supply water connection installed along road side, major nalas and near to the open drain which brings health at very high risk level. 22 per cent wards comprises the 22 wards come under medium category ranges from 11.52 to 14.99 percent reported that they are fetching water from the tap installed on public places and outside their premises. 40 per cent wards of the city consist of 44 wards e.g. Nirala Nagar, Aliganj, Nishat Ganj, Rajajipuram, On Magar, Vivekanandpuri, Golaganj, Aminabad, Ganesh Ganj, Motilal Nehru, etc. come under low to very low category ranges betwen 3.0 to 11.50 per cent have been observed that they own have own piped water connection but fetching water from outside of their premises due to contamination of supplied water.

Unsatisfactory water supply

Safe and clean drinking water is a prime requirement. Safe and clean water not onlya ffect the health of the people but also affect the socio-economic development of the country if the consumers take the clean water (which is found desired norm) they are at very low health risk but they take contaminated water they are at highest health risk.

Table 3: Unsatisfactory supplied water quality

Category	Ranges	Total Wards	Percent of wards
Very High	**86.36-98.88**	**16**	**14.55**
High	**63.23-86.35**	**54**	**49.09**
Medium	**56.32-63.22**	**17**	**15.45**
Low	**49.89-56.31**	**9**	**8.18**
Very Low	**37.86-49.88**	**14**	**12.73**

Source: Based on sampled House Hold Survey 2010-2011

In study area only 10 per cent people get safe drinking water and rest of 90 per cent people get contaminated water in form of colour, smell, sand, and often some insect appear in drinking water. It is observed that the households of respective wards of Balakganj, Daulat Ganj, Ayodhya Das Nagar, Kadam Rasool, Chinhat, Daulatganj, Nirala Nagar, etc. claimes regarding contaminated water coming from running water, ranges accounts 63.23 to 98.88 found in 63.64 per cent wards of the city accounts 70 wards of the city come under very high to high category. Under medium category which covers 17 wards or 15.45 per cent wards of the city, 56.32 to 63.23 per cent present households reported, that they are not satisfied with supplied water quality. Under low to very low category of unsatisfactory supplied water quality, 20.91 per cent wards of the city which accounts 23 wards where the households ranges between

37.86 to 56.31 per cent reported they are unsatisfied with supplied water quality.The wards belong to this group are Shankar Purva, Vivekanandpuri, Mahanagar, Guru Govind Singh Nagar, Indira Nagar, Nirala Nagar, Murli Nagar, etc.

Storage of water in open container

Very little percentage of peoples is found in Lucknow city, which does storage of water in open containers.This pertain high health risk because open water get contaminated sometime by vectors also provide ground for Aedies mosquito.

Table 4: Storage of water in open container

Category	Ranges	Total Wards	Percent of wards
Very High	**9.1-6**	**6-Jan**	**5.45**
High	**3.56-5.99**	**6**	**5.45**
Medium	**2.1-3.55**	**18**	**16.36**
Low	**0-2.0**	**27**	**24.55**
Very Low	**0-0**	**53**	**48.19**

Source: Based on sampled House Hold Survey 2010-2011

It is observed that peripheral wards of the city such as Balak Ganj Haiderganj, Faizullah Ganj, Shankar purva, Chinhat, Ibrahimpur, Kharika, Shaheed Bhagat Singh, etc. come under high to very high category of storage of water in open container households ranges from 3.56 to 9 per cent spread 12 wards i.e. 10.09 per cent. Rest 98 wards of the city come under medium to very low category of storage of water in open container. Lack of awareness and very low social backwardness and very low income are responsible.

Conclusion

After foregoing analysis regarding variable of indoor water pollution and diseases, it may be concluded that indoor water pollution and diseases are positively correlated. At 108 degree of freedom there is 99 per cent significant level are found among all the variables, taking into consideration of 1 percent's' test. **C**ondition of water supply shows the failure of the distribution system of the Nagar Nigam. Overall study of water supply condition exhibited that mostly of the wards suffer from inadequate water supply. The supplied water contaminated due to the old distribution network of water supply and broken pipeline. Drainage system is also very poor, only on major roads closed drains have been found. In some porch colonies also closed drains may be found. Overflowing of the waste water due to improper construction of open drains also, often water logging in interior part of the mohallah. It provides ground for breeding of the mosquitoes, vectors, and rodent flies. This condition occurs in almost all the peripheral zone of the city.

Recommendations

In order to reduce the level of indoor water pollution and incidence of diseases following recommendation has been made:

1. Immediate attention must be paid towards the condition of water supply.
2. To ensure safe and clean water supply to the consumers, summing and cleaning of tap water by the concern authority should be done at regular interval.
3. Old distribution network of pipeline should be replaced by the new-network of the distribution of water supply because old pipeline is broken at many places cause the reducing of the pressure of water supply and contaminate it also.
4. Action taken against who attach the boosters to the pipeline. But due to the low pressure of water supply people use to do it.
5. Cleaning of underground reservoir and overhead tanks should be done time to time for the sake of safe and clean water supply.
6. Immediate action should be taken to improve the sanitation condition of the city, espcially in those areas where the construction of the closed drainage is not possible. Sweepers should be appointed to clean the drains for the smooth flow of sewerage water.
7. Closed drainage system should be encouraged to reduce the health risk.
8. Education is must to reduce the health risk impact. In this regard time to time awareness programme should be arranged..
9. Promote the NGOs and research programmes to find out the more and more vulnerable areas in the city that could help the planning for reducing the health risk.

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THE KONKAN GEOGRAPHER
Vol. No.05 Nov. 2013
ISSN 2277 – 4858

Environmental Issue and Challenges

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Abstract

The rapid growth of industrialization, urbanization, modern agricultural development, energy generation, has resulted in indiscriminate exploitation of natural resources for fulfilling the human desires and need, which have contributed in disturbing the ecological balance on which the quality of our environment depends.Deforestation is the conversion of forested areas to non-forest land use such as arable land, pasture, urban use, logged area or wasteland.The environment is made up of air, water and land, technically known as atmosphere, hydrosphere and lithosphere respectively which together constitute the biosphere. In the biosphere, apart from human beings, plants, animals, birds, fishes, insects and microorganisms (algae, bacteria and virus) also exist.“Acid Rain” is a broad term referring to a mixture of wet and dry deposition (deposited material) from the atmosphere containing higher than normal amounts of nitric and sulfuric acids.Pollution is any undesirable change in the physical, chemical or biological characteristics of air, water or land. Pollution, in addition to destruction of materials and natural capita, can harm the health and threaten the survival or activities of human beings and other living organisms.

Key Words : Acid Rain, Biodiversity, Deforestation.

Introduction

The rapid growth of industrialization, urbanization, modern agricultural development, energy generation, have resulted in indiscriminate exploitation of natural resources for fulfilling the human desires and need, which have contributed in disturbing the ecological balance on which the quality of our environment depends. Human beings in true sense are the product of their environment. Man-environment relationship indicates that pollution and deterioration of environment has a social origin. The modern technological advancements in chemical processes have given rise to new products, new pollutants and in much abundant level which are above the self-cleaning capacities of environment. One of the major issues in recent times is the threat to the human life caused due to the progressive deterioration of the environment.

Today, we have many environment-related problems:

- Deforestation
- Soil erosion
- Loss of Biodiversity
- Contamination of fresh water reserves

- Deterioration of ambient air quality
- Increase in soil salinity
- Impact of Hazardous wastes on the environment
- Air pollutants and atmospheric photochemical reactions
- Depletion of ozone layer
- Climate change and global warming
- Induced natural disasters

Deforestation

Deforestation is the conversion of forested areas to non-forest land use such as arable land, pasture, urban use, logged area or wasteland. Generally, the removal or destruction of significant areas of forest cover has resulted in a degraded environment with reduced biodiversity. Generally loss of biodiversity is highly correlated with deforestation. Deforestation affects the surface water and ground water reserves and the moisture content in the atmospheric air. Forests support considerable biodiversity, providing valuable habitat for wildlife and medicinal flora and fauna. Deforestation destroys genetic variations irretrievably. Deforestation also contributes to decreased evapo-traspiration, which in some cases affects precipitation levels downwind from the deforested area. Growing worldwide demand for wood to be used as firewood or in construction, paper manufacture and furniture as well as clearing land for residential, commercial and industrial development (including road construction), together with growing local populations and their demands for agricultural expansion would endanger the ever-larger forest areas.

Soil Erosion

Soil erosion is one form of soil degradation along with soil compaction, low organic matter, loss of soil structure, poor internal drainage, salinisation and soil acidity problems. These other forms of soil degradation, serious in themselves, usually contribute to accelerated soil erosion.

Soil erosion is naturally occurring process on all land. The agents of soil erosion are water and wind, each contributing a significant amount of soil loss each year. Soil erosion may be a slow process that continues relatively unnoticed, or it may occur at an alarming rate causing serious loss of topsoil. The loss of soil from farmland may be reflected in reduced crop production potential, poor surface water quality and damaged drainage networks. According to present estimate, which is treated as a first approximation, soil erosion is taking place at the rate of 16.35 t/ha/annum which is more than the permissible value of 4.5 t/ha to 11.2 t/ha. About 29% of the total soil cover is lost permanently to the sea; 10% deposited in reservoirs and the remaining 61% is dislocated from one place to the other.

Status of biodiversity in India

India is one of 12 mega-diversity countries of the world. India occupies only 2.4% of the world's land area but its contribution to the world's biodiversity is approximately 8% of the total number of species, which is estimated to be 1.75 million (As per global

Biodiversity Assessment of UNEP of 1995, describes number of species so far is 1.75 million). Of these, 126,188 have been described in India. The species recorded includes flowering plants (angiosperms), mammals, fish, birds, reptiles and amphibians constitute 17.3% of the total whereas nearly 60% of India's bio-wealth is contributed by fungi and insects. Such a distribution is similar to that found in the tropics and the subtropics.

Biodiversity hotspots

Biodiversity hotspots are areas that are unusually rich in species, most of which are endemic and are under a constant threat of being over-exploited. Among the 18 hot spots in the world, two are found in India. These are two distinct areas: the Eastern Himalayas and Western Ghats and are also depicted in the National forest vegetation map of India. Together these 18 sites contain approximately 49,955 endemic plant species or 20% of the world's recorded plants species, an area 746,400 sq. km. or 0.5% of the earth's land surface.

Importance of Biodiversity

Approximately 80,000 edible plants have been used at one time or another in human history, of which only about 150 have even been cultivated on a large scale. Today a mere 10 to 20 species provide 80-90% food requirements of the world. Biological diversity has direct consumptive value in food, agriculture, medicine and industry. It also has aesthetic and recreational value. Biodiversity maintains the ecological balance and the continuous evolutionary processes. The indirect ecosystem services provided through biodiversity are photosynthesis, pollination, transportation, chemical cycling, nutrient cycling, soil maintenance, climate regulation, air and water system management, waste treatment and pest control.

Loss of Biodiversity

The most serious man-made threat to biological diversity is due to:

- Deliberate destruction of the ecosystem, especially in the tropics.
- Disappearance of habitats in the wake of developmental activities like industrialization, urbanization, population growth and over exploitation of species.
- Forest fire.
- Introduction of exotic and non native species.
- Pollution and contaminants.
- Climate change.
- Ecological imbalance.

Pollution

The environment is made up of air, water and land, technically known as atmosphere, hydrosphere and lithosphere respectively which together constitute the biosphere. In the biosphere, apart from human beings, plants, animals, birds, fishes, insects and microorganisms (algae, bacteria and virus) also exist. The atmosphere provides oxygen, while the Hydrosphere, lithosphere provide food, water and space. Whenever a change,

in physical constitution occurs in the atmosphere, hydrosphere or lithosphere, the eco-system and the living beings are affected. This change is accelerated by anthropogenic and industrial activities, more specifically due to the pollution. Pollution is any undesirable change in the physical, chemical or biological characteristics of air, water or land. Pollution, in addition to destruction of materials and natural capita, can harm the health and threaten the survival or activities of human beings and other living organisms.

Air Pollution

Air pollution can be due to natural or manmade causes. The former is beyond our control as natural disasters like dust storms, earthquakes and volcanic eruptions throw up large quantities of dust and gases into the atmosphere. Manmade causes, however, should be prevented or controlled as they pose a greater danger by way of toxic emissions from chemical industries, power plants, vehicular traffic, etc. These emissions are particularly intense in urban conglomerations where the density of human habitation is very high. Primary pollutants are those which are emitted directly into the atmosphere, like Sulphur dioxide, Oxides of Nitrogen, Acidic gases, Hydrocarbons and Carbon monoxide.

Secondary pollutants are pollutants formed by the photochemical reaction of primary pollutants. For example, “smog”, is a combination of smoke and fog. Smoke consists of carbon particles and fog is an emulsion of water vapor in air. Smog has become very common in large cities, especially during winter. Similarly acid rain is formed by the combination of Sulphur dioxide/Oxides of Nitrogen and water vapor present in the air. Wind movement, temperature and topography can disperse pollutants in the air from few meters to across continents.

Water Pollution

The untreated/partially treated waste water containing toxic compounds, discharged from industries, residential areas enter lakes, streams, rivers and other water bodies, and they get dissolved or lie suspended in water or get deposited on the bed. This results in the contamination of surface and sub-soil water table, whereby the quality of the water deteriorates, affecting aquatic ecosystems. Pollutants can also infiltrate and affect the groundwater reserves.

Water pollution has many sources, the major one being the domestic sewage followed by industrial discharges. The facilities to treat waste water are not adequate in any city in India. Presently, only about 10% of the wastewater generated is treated; the rest is discharged untreated/partially treated into our water bodies. Due to this, pollutants enter groundwater, rivers and other water bodies. Such water, which ultimately ends up as drinking water source is often contaminated and carries pathogenic microbes, causing water-related health problems to the end-users. Agricultural run-off, or the water from the fields that drains into rivers, is another major water pollutant as it contains the residues of surplus fertilizers and pesticides.

According to a study by Engeimn and Roy (1993) per capita water use in the country decreased from around 5.277 cubic meters in 1955 to 0.464 cubic meters in 1990. Per capita availability of water, which was 6,008 cubic meters in 1947, has fallen to 2.266 cubic meters in 1997. This gives a board indication of the growing water scarcity in the country since independence compounded by the serious drought situation year after year in various parts of the country.

Soil Pollution

Land is a very valuable but limited resource, as the population increases rapidly. Many highly urbanized cities are faced with acute space problems, as in Kolkata or Mumbai. Besides the limited availability of land, 175 million hectares of land are becoming less productive every year. India loses 20 tones of top-soil per hectare in a year due to floods, rainfall and deforestation. 20% to 50% of lands under irrigation can go out of cultivation at this rate because of water logging and increasing soil salinity. This scenario of desertification is compounded by pollution which includes:

- Indiscriminate discharge of industrial effluents on land and into water bodies.
- An increase in the use of fertilizers for agriculture.
- Open defecation by animals and human beings.
- Collection, transportation and disposal of municipal solid waste. Unhygienic handling and disposal of garbage is major problem in developing countries like India.

Noise Pollution

Noise is unwanted sound and has become a part of urban life and industrial centers in this century. Noise may be generated from loudspeakers, industries, aerodromes, moving trains, construction activity or even from community sources. Noise level of 80 decibels or more for more than 8 hours a day can increase tension and changes in breathing patterns. The Continued exposure to high levels of noise level results in fatigue, hearing loss or even total loss of hearing, changes in blood circulation, changes in breathing, etc. Noise pollution above 120 decibels in human body. Cholesterol levels in the blood and white cell counts can increase, besides causing hypertension.

Solid Waste

Municipal solid waste consists of household waste, construction and demolition debris, sanitation residue and sweepings from streets. This garbage is generated mainly from residential and commercial complexes. With rising urbanization and change in lifestyle and food habits, the quantity of municipal solid waste has been increasing rapidly and its composition changing. In 1947, cities and towns in India generated 6 million tones of solid waste and in 1997 it was about 48 million tones. More than 25% of the municipal solid waste remains unattended in streets and at the source of collection. 70% of the Indian cities lack adequate infra-facility to transport and to dispose of the waste in appropriate sanitary landfills. The existing landfills are neither well equipped nor

well managed and are not lined to protect against contamination with soil and groundwater.

Municipal Solid Waste generation and its impacts

In India, the amount of waste generated per capita is estimated to increase at a rate of 1% to 1.33% annually. The rising quantities of municipal solid waste from 1997 to 2047 under the BAU scenario assuming the daily per capita waste generation in 1995 as 0.456 kg and the per capita increase in waste generation as 1.33%. The calculated value of daily per capita waste generation in 1997 is 0.468 kg. It is evident that total waste quantity generated in 2047 would be approximately above 260 million tones-more than five times the present level of generation. This enormous increase in solid waste generation will have significant impacts on the environment in terms of the required for disposing this waste, contamination ground water reserves and the obnoxious emissions landfills.

Hazardous Wastes

In India, generation of hazardous waste is to the tune of 6-7 million tonnes per year, although the figures may vary, as at present there is no reliable data available, on the nature and quality of Hazardous Waste Generation in India. The major hazardous waste generation fleet in India includes petrochemicals, pharmaceuticals, pesticides, paints dyes, fertilizers, chlor-alkali and other different industries. The production/manufacturing of these products results in generation of hazardous waste. Management has led to generation of more and more hazardous wastes and sadly, controlling hazardous waste has become a serious problem in India. Despite the ban on import of hazardous waste in the country, implementation of the ban on the ground is very negligent and hazardous waste is coming to our shores in a regular phenomenon. Apart from generating their own hazardous wastes. India invites import of such waste in the name of reuse and recycling, though there is lack of environment friendly technology to reuse and recycle hazardous waste.

Biomedical Waste

Hospital waste is generated during the diagnosis, treatment or immunization of human beings or animals or in research activities in these fields or in the production or testing of biological. It may include wastes like sharps, solid wastes, disposables, anatomical waste, cultures, discarded medicines, chemical wastes, etc. These are in the form of disposable syringes, swabs, bandages, body fluids, human excreta, etc. This waste is highly infectious and can be a serious threat to human health if not managed in a scientific and discriminate manner. It has been roughly estimated that of the 4 kg of waste generated in hospital at least 1 kg would be infected.

Hospital waste contaminated by chemicals used in hospitals is considered hazardous. These chemicals include formaldehyde and phenols, which are used as disinfectants and mercury, which is used in thermometers or equipment that measure blood pressure.

Most hospitals in India do not have proper disposal facilities for these hazardous wastes.

Acid Rain

"Acid Rain" is a broad term referring to a mixture of wet and dry deposition (deposited material) from the atmosphere containing higher than normal amounts of nitric and sulfuric acids. The precursors, or chemical forerunners, of acid rain formation result from both natural sources, primarily emissions of sulfur dioxide (SO_2) and nitrogen oxides (NO_X) resulting from fossil fuel combustion.

Wet Deposition:

Wet deposition refers to acidic rain, fog and snow. If the acid chemicals in the air are blown into areas where the weather is wet, the acids can fall to the ground in the form of rain, snow, fog, or mist. As this acidic water flows over and through the ground, it affects a variety of plants and animals. The impact depends on several factors, including how acidic the water is; the chemistry and buffering capacity of the soils and the types of aquatic species, plants and other living things that rely on the water.

Dry Deposition:

In areas where the weather is dry, the acid chemicals may become incorporated into dust or smoke and fall to the ground through dry deposition, sticking to the ground, buildings, materials and trees. Dry deposited gases and particles can be washed from these surfaces by rainstorms, resulting in more acidity in the runoff mixture. About half of the acidity in the atmosphere falls back to earth through dry deposition.

Effects of Acid Rain:

Acid rain causes acidification of lakes and streams and contributes to the damage of trees at high elevations (for example, red spruce trees above 2,000 feet) and many sensitive forest irreplaceable buildings, statues and sculptures that are part of our nation's cultural heritage.

Ozone Depletion

Ozone is tri atomic molecule of oxygen. Ozone is a natural constituent of the atmosphere occurring in concentration of about 0.1 ppm in stratosphere. A layer of atmosphere between the altitudes of 20 to 35 km where in maximum concentration of 0.5 ppm ozone occurs is termed as 'ozone layer'. Nature has kept a perfect balance of ozone in stratosphere layer of the atmosphere to act as a filter to prevent the harmful ultraviolet (UV) radiations from the sun. Depletion of ozone may create larger exposure to UV producing skin cancer, melanoma etc. Other responses include changes in metabolism, reduced photosynthesis, leaf necrosis, leaf drop and altered growth and quality.

Depletion of ozone layer in the atmosphere is commonly termed as 'ozone hole'. UN declared September 16^{th} as the World Ozone Day to alarm the people to reduce the use of chemicals which can deplete the ozone layer in stratosphere. Over Antarctica (and recently over the Arctic), stratospheric ozone has been depleted over the last 15 years at

certain times of the year. This is mainly due to the release of manmade chemicals containing chlorine such as CFC's (Chlorofluorocarbons), compounds containing bromine, other related halogen compounds and also nitrogen oxides (NOx). CFC's are a common industrial products, used in refrigeration systems, air conditioners, aerosols, solvents and in the production of some type packaging. Nitrogen oxides are a byproduct of combustion processes, e.g. aircraft emissions. The current levels of depletion have served to highlight a surprising degree of instability of the atmosphere and the amount of ozone loss is still increasing. Greenpeace have documented many of the concerns that this raises.

Global Warming and Green House Effect

A secular increase in carbon dioxide in the atmosphere, arising from progressive industrialization and the combustion of fossil fuels, could rise the mean, temperature of the atmosphere, effecting profound climatic changes. Besides carbon dioxide, a number of natural and synthetic gases present in the composition of global atmosphere. The important fact is that-Short Wave Radiation can pass easily through the atmosphere to the surface of the earth, while a proportion of the resultant heat is retained in the atmosphere. Since outgoing long wave radiation (of about 8.5-11.0 microns wave length) cannot penetrate the atmosphere as easily, especially when there is cloud cover of gases, it leads to an enhanced heat-trapping of the earth. This in heat-trapping capacity of the atmosphere a phenomenon called 'Green House Effect'- results in the increase in global temperature.

Conclusion:

The modern technological advancements in chemical processes have given rise to new products, new pollutants and in much abundant level which are above the self-cleaning capacities of environment. One of the major issues in recent times is the threat to the human life caused due to the progressive deterioration of the environment. The environment is made up of air, water and land, technically known as atmosphere, hydrosphere and lithosphere respectively which together constitute the biosphere. In the biosphere, apart from human beings, plants, animals, birds, fishes, insects and microorganisms (algae, bacteria and virus) also exist. The atmosphere provides oxygen, while the Hydrosphere, lithosphere provide food, water and space.

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THE KONKAN GEOGRAPHER
Vol. No.05 Nov. 2013
ISSN 2277 – 4858

SWOTAnalysis of Tourism-A case study of Ratanagiri district

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Introduction:

Tourism is major engine economic growth in most parts of the world. Indian tourism industry is one of the fastest growing industries in the world & it contributes 6.23 % GDP & 8.78 % of total employment in India. According to World Travel & Tourism Council, Indian will be a tourism hot-spot from 2009 to 2018, having the highest 10 year growth potential. Tourism is one of the important attribute to the economic growth of the developing countries. It can act as the pivot of vehicle for socio-economic development. Today, tourism has been acknowledged as the biggest component of the tertiary sector. It constitutes a major portion in the world trade, and its growth rate is faster than that of the tangible goods. Tourism has become a highly organized industry consisting 11% of world's Gross Product and world's revenue from tourism has also increased tremendously in last 25 years. (WTO-2007)

India has a great source of attraction to the world from Ancient time, but tourism industry is quite insufficient considering the continental size of the country & its rich tourist resources. The importance of tourism as a contributor of economic growth is widely accepted year after account of fast expansion of tourism, we can site a large number of economic benefits flowing form this industry Environmental resources are key attractions of tourists demand and constitute the most obvious area in which developing countries do not achieve an optimum return. In some countries underutilization of available resources means that returns that might otherwise be available are foregone. In the Scenario of Indian culture and tourism Maharashtra has

occupied valuable position in the paradise of the tourism. In the Konkan Region Ratnagiri District is one of the important districts which haveenormous potential to develop as a tourism center. The Ratnagiri district having various geographical features like beaches, back water, hill stations, hot springs, rich biodiversity etc. as well as forts, caves are also in good condition. But tourism is not well developed in Ratnagiri district. Business and other service sectors undertake swot analysis to understand their internal and external environment. Using this swot analysis strength, weakness, opportunities and threats of Ratnagiri tourism has extracted and suggested the suggestion for the development of tourism sector in the district.

Study Objectives–

1.To study the tourism potential of Ratanagiri District.

2.To study the Strengths, weakness, Opportunities and Threats of Ratnagiri tourism.

3. Suggest measures for development of tourism in the district.

Research Methodology-

The data is collected from secondary sources such as Newspapers, internet websites, Local magazines and government of Maharashtra's tourism reports also used yearly report of Maharashtra district census handbook. IITTM-ICC report, annual and five year plan reports of ministry of tourism, government of India.

Profile of Study Area

The district Ratnagiri is located in the south western part of Maharashtra and surrounded by the ArabianSea in west, Raigad district in the north,Western Ghat in the east and Sindhudurg lies in south.The districts have the rich in the tourist potential e.g. beautiful beaches, waterfalls,backwater,wildanimal’s medicinal plants, forest,temples forts, hotsprings, infrastructure, advertising and marketing. These places can attract thousands of tourists, but it is not happening in the real time because of lack of proper planning.

Review of Literature-

1.Ajim P. Muharmmed & Dr. Jagathyraj V.P.- Conference on Tourism in India-Challenges ahead, 15-17 may 2008, the author suggested Kerala government should provide attentions to tourism, get feedback from tourist . Teach tourism from school level and create public awareness the researcher made a humble attempt to bring into light the problems, short comings & realities to industry of Kerala.

2.Saurabh Rishi, Dr. B. Sai Giridhar- Social public service and cause related marketing-Himachal Pradesh- Swot analysis- In this paper author has done the Swot analysis using porters model. Author investigated through questionnaire of customer's problem & suggested some thing is adopt new technology, stop exploitation of tourist, develop ecotourism, and increase entertainment facilities.

1.Hassn alka- Journal of applied sciences 6 (13)- Assessment of rural tourism in turkey using swot analysis- In this study, Current & future situations of rural tourism in turkey were criticized through swot analysis technique. Author also suggested turkey has vast rural tourism potentialities but initiatives, investments and promoting for rural tourism are inadequate & very less compared to other tourism. If true policies applied to rural tourism changes will see early.

2.Goran Bojaric, Jovan Plavsa- Swot analysis of tourism on Kopaonik the spas of its piedmont- through the specific examples of "advantages and opportunities of swot analysis, reality of tourism with opportunities of the region suggested a guideline for the development of spas and its piedmont.

Ratnagiri Tourism: Swot Approach- SWOTanalysis for Ratnagiri tourism is given below.

1) Strength's-

a) Tourism in Ratnagiri has the potential to maximize the productivity of natural, human, cultural & technical resources.

b) Tourism is labor intensive industry, providing employment & increasing the higher quality of life. This is golden opportunity to develop tourism in large scale in Ratnagiri that will create employment & it will reduce migration of people those who are going to Mumbai for the job.

c) Ratnagiri district has 320 km. long coast with beautiful places and lush green hills that will attract more tourism in Ratnagiri district.
d) Development of tourism in Ratnagiri will forward the economy & build overall income, employment, investment & increase the revenue of district, state, & central government.
e) In Ratnagiri lots of scenic beauty places, beaches, forts and other places will attract a large domestic & foreign tourism.
f) Ratnagiri is safe & secure place compare to goa.

g) Affordable cost- Hotels charges for accommodation in Ratnagiri are lowest compare to goa.
h) Quality of service- is excellent and no one production district in the fish. Variety of fishes will get to tourist in this place.
i) Ratnagiri is well connected in the world and well known region for Mango production. Hence tourist will attract for the enjoying of taste of mango.
j) More than 50 to 60 % non-workers found in Ratnagiri.
k) Literacy rate is higher than other district of Maharashtra.
l) Airport facility for Ratnagiri is near from Mumbai & Goa.
m) Citizen of the area are hospitable, open minded and simple.
n) Untouched of nature and wealth of rural areas.
o) Exceptional cultural and historical heritage of the Ratnagiri district.
p) Attitude of the local people are positive towards the tourism.
q) Tourist places of Ratnagiri will attract throughout the year.
r) Some of the tourist places are well known.
s) Terrain is well suited for adventure activities.
t) Unspoiled environment and flora and fauna.
u) Landscape of Ratnagiri district is extraordinary.

2) Weakness-

a) Lack of publicity & marketing, separate websites and hoardings, publicity on local and national TV channel & lack of information Centre.
b) Lack of basic amenities- Hotels and frequency of transportation.
c) Lack of tourist guide services.
d) Lack of tour packages.
e) Lack of vision for future development.
f) Low level entrepreneurial spirit among rural areas.
g) Lack of labors
h) Infrastructure is poor in rural areas.
i) Lack of public transportation facilities in rural areas.

3) Opportunities-

a) Development of rural, medical, tourism in the Ratnagiri district is the great opportunity.
b) Various types of tourism places in Ratnagiri like historical – forts, natural- beaches, religious – temples, architeural monuments are available.
c) Agro tourism is developing very rapidly it will attract large peoples of urban areas.
d) Rural households are interested for tourism.
e) Clean and calm, non- polluted beaches
f) To create awareness among urban people about the nature.
g) To increase number of TV programs to focusing the natural area of Ratnagiri district.
h) To motivate the rural areas non-workers people to adopt the concept of Eco, Agri, Rural, & Coastal tourism easily.
i) Tourist spots of konkan are suitable for TV serial or films.

4) Threats-

a) Unpredictable weather change e.g. Cyclones
b) Increasing of mining activities.

c) Migration of young population for Ratnagiri to Mumbai.
d) Mining activities are changing natural landscape.
e) Growing unemployment in rural areas.
f) Increasing pressure on the environment.
g) Lack of strong image of Ratnagiri as a tourist destination.
h) Due to lack of financial support creating insufficient credit opportunities.
i) Majority of the people depending on money order.
j) Strong competition of goa tourism.
k) Isolated places not connected with main route.

1. Suggestions-

- Tourism is fast growing industry in Ratanagiri district.
- Calm& clean beaches of Ratanagiri district are mostly preferred by tourists.
- Local people are accepting tourism but they expect their culture should not be disturbed.
- Tourists itself expecting more improvement in the basic facilities.
- Infrastructure is the backbone of any industry. It should give first priority in the development..
- There is need to give wide publicity of Konkan tourism region on the Internet and organize special programmes in abroad.
- Hospitality training should be provided to local people with initiative lead of MTDC.
- Create awareness among the local people and participate them in the tourism awareness program.

2. Conclusion-

Tourism is a fasting growing industry in Ratanagiri district. Currently recognized as a global industry but it is invisible and highly growing at a high rate, as compare to other any industry.Konkan is also called the California of the India and Ratnagiri is one the district of this California.it is not developed similar to California. Hence there is need to remove the obstacles in the development of tourism. Attract foreign tourist towards the Konkan region and it will improve the living standard of the

local people and also helpful for the employment generation. The success of tourism is depending on the strategy and policy implement. The government should motivate the private agencies in the investment of tourism sector of this district.

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THE KONKAN GEOGRAPHER
Vol. No.05 Nov. 2013
ISSN 2277 – 4858

Environmental pollution and Health Education.

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Abstract

"Man as a part and parcel of environment" has to recognize the role and importance of environment in order to Protect it, and to get protection from it, fro this he needs environmental education as the environmental education is the process of recognizing values and classifying facts in order to develop skill and attitudes necessary to understand and appreciate in the inter-relatedness of man, his culture and his biophysical surrounding, and as it also entails practice in decision making and self formulation of a code of behaviors about issues concerning to the environmental quality education.

Today man is living in a world of crisis the social, economic, political and value crises are some of the threats which the humanity faces and these threats are quite alarming. Added to this in the recent decades, the environmental crisis has become another important factor which has made everyone in the world to think of its gravity. Through the environmental dimension has its own history, it has gained prominence in the recent past due to several reasons such as urbanization , industrialization, automation some Non-Governmental organizations have started working on the sustainability of environmental and ecological balance.

Objectives

1) To increase the public awareness of the problems in this field as well as possible solutions.
2) To Faster clear awareness of and concern about economic, social, political, ecological interdependence in urban and Rural areas.
3) To provide every person with opportunities to acquire the knowledge values, attitudes, commitment and skills needed to protect and improve the environmental.
4) To create the pattern behavior of individuals, groups and society as a whole towards the environmental.
5) To give the environmental education, the need of the present day.

Hypothesis :-

1) This is focused about the environmental pollutions and problems and conservation of environmental conditions.

2) This is concern about the environmental & Health situation of human beings.

Methodology :-

The present study is based on the primary data / sources as well as secondary data / sources like journals, Govt, official documents standard authorized books printed materials, on environmental pollution, and internet.

Environmental Pollutions :-

"Pollution means the direct or indirect changes in the environment which are harmful and undesirable to organizations and man" There are several kinds of pollution and the causes are also many. Due to a rapid rate of increasing the human population the space on the earth available to each man is getting smaller thus in almost all countries, environmental pollution is on the increase and is due to the industrialization and technology. The components of the environmental pollution like these following.

1) Water pollution.
2) Air pollution
3) Soil pollution
4) Solid waste pollution
5) Radioactive pollution
6) Marine pollution
7) etc.

Concept of Ecosystem in the Relation to Man :-

The international union for conservation of Nature and natural Resource (IUCN) commission of education, in the international working meeting on environmental education in the school curriculum held under the auspices of UNESCO in Paris in 1970 has defined" environmental and Health education as" the process of recognizing values and classifying concepts in order to develop skills and attitudes necessary to understand and appreciate the interrelatedness of man, his culture and his biophysical surrounding. So environmental education also entails practices in issues concerning environmental quality. This definition has since then influenced the thinking of many countries concerned with forming polices on environmental education.

Environmental Education :-

Most people recognize the urgent need for environmental education, but only some have clear ideas about what needs to be done, and very few have either the actual experience or the knowledge about the courses that need to be thought. The chief objective of environmental education is that individual and social groups should acquire awareness and knowledge, develop attitudes skill and abilities and participate in solving real life of environmental problems the perspective should be integrated inter disciplinary and holistic in character. The lay public in rural, tribal slum and urban

arias, women and students and teachers in schools, collages and universities as well as planners and decision and policy makers programme implementers and Rural Development workers need to be educated about environment.

A Chinese perception about environmental auctioning here "1st you plan for one years plant rice of you plan for ten years plant trees. If you plan for hundred years give the education to all people of our society.

Health Education. :-

The relationship between the environmental and the human health is on established fact clean air water and soil are the vital ingredient for a happy life of the community. And yet despite these well established norms, environmental degradation is processing at a frightening pace. Human being has become the prime victor of this environmental degradation considering the high shakes the required to bring back to life our dying air, water and soil to make leave's green, the water blue, the air pure to breathe and the humanity to live and lead healthy life.

Environmental degradation undermines development and damages human health. I all health on the other hand affects of the work force hinders development and leads to environmental degradation. Environmental, development and health are thus closely interlinked with proper development increasing community health, making possible sustainable development. The role of each and every individual in the Maintenance of a clean and healthy environment is therefore indispensable.

Environmental Education at the school & college level. :-

Man is a part and parcel of his environment due to his interaction with nature on a large scale, the balance of nature have been upset and environmental decadence occurred in most parts of the world. This might be because of environmental pollution or improper and unscientific exploitation of natural resources. It has posed a great problem to them existence of man, plant and animal life. On the earth planet, threatening the quality of man's life and his survival So, there is need to increase awareness and understanding of those environments and man's impact upon them and to find out effective way's to then. To achieve the above goal, Environmental education is the need of the day.

Suggestions, for Environmental Education. :-

The environmental education programme in India has not made much headway due to luck of funds. Inadequate infrastructure and shortage of trained personal etc. The following suggestions are given for making the environmental education Programme was successful :-

1) Environmental education should be closely linked with Gandhian thought.

2) Environmental education should result in the development of an ecological ethics-a change in attitude of man towards man society and nature, in realization of man as part of nature, not alien to it.
3) The environmental education should be so designed as to integrate course.
4) The University Grants commission should accord high priority in establishing causes in colleges and universities on environmental education.
5) Teachers parents, public, doctors, Engineers, planners, administrators and scientists should be involved in environmental education programme.
6) The Govt. should establish environmental Research centers in every one state as well as districts.
7) Seminars conferences and workshops should be organized from time to time on the environmental education.

Conclusion :-

New about the environment with its diverse forms of pollution appears daily in newspapers news magazines, radio and television broadcast. A quality environment's a must for individuals to possess good health, as well as to grow, develop and achieve. A polluted environment and its habitat. Hinders optional attainment among people as well as animal life in general.

A well informed, motivated teacher may utilize several selected procedures in selecting objectives learning activities and evaluation techniques. In a unit on pollution in its diverse Forms the teacher may stimulate learners to Identify relevant problem's. Thus in a quality current events curriculum, the teacher might utilize a related stimulating discussion on ail spills in the news. From the ongoing discussion students are stimulated to identify causes of oil spills. After the problem has been adequately delimited, students with teacher guidance, determine resources deeded to secure information directly related to the problem.

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THE KONKAN GEOGRAPHER
Vol. No.05 Nov. 2013
ISSN 2277 – 4858

A Geographical Study on Exploring the Potential of Tourism Industry in Kerala

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Abstract

Tourism makes best industry in Kerala which has clear competitive advantages. Its diverse geography in a narrow belt ranging from the Western Ghats covered with dense forests to the backwaters to the Arabian Sea makes it special with tourism point of view. Its ancient rich culture including traditional dance forms and the strong presence of alternative systems of medicine that is Ayyurveda adds to its allure. Unfortunately, Kerala is mainly dominated by domestic tourism within the state; then interstate; than foreign tourism. This paper is an attempt to understand the importance of tourism in the state, there by finding the potential of tourism in the study area. The standard statistical techniques have been used for the study. These techniques have been applied by using SPSS software.

Keywords: Tourism, Kerala Tourism, Potential of Kerala Tourism, Importance of Tourism.

Introduction:

Tourism has turned out to be a very important industry in the modern age. In almost all the countries of the world there are separate ministries of tourism. Tourist spots are being developed all over the world to attract the tourists. It is, indeed, a good source of earning foreign exchange for every country that can manage it efficiently. Such a great industry cannot be ignored by India, especially Kerala state, which abounds in the spots of tourist-interest.

Scope Of The Study:

Tourism makes best industry in Kerala which has clear competitive advantages. Its diverse geography in a narrow belt ranging from the Western Ghats covered with dense forests to the backwaters to the Arabian sea makes it special with tourism point of view. Its ancient rich culture including traditional dance forms and the strong presence of alternative systems of medicine that is Ayyurveda adds to its allure. Unfortunately, Kerala is mainly dominated by domestic tourism within the state; then inter state; than foreign tourism. Considering the vast and varied potential of tourism in the state, a detailed study is found to be relevant and imperative.

Objectives:

3. To understand the importance of tourism in Kerala.
4. To explore the potential of tourism industry in Kerala.

Research Methodology And Database:

The present study is based on secondary data. It has been collected from Wed site of Kerala Tourism, Department of Tourism, Kerala Tourism Development Corporation(KTDC), District Tourism Development Council(DTPC) and News papers. The standard statistical techniques have been used for the study. The data are also supplemented by some published and unpublished sources. Direct oral investigations are also carried out to make the study more significant.

Findings:

The world's fastest growing economic sector, Travel & Tourism, has played a dramatic role in bringing the world so much closer together. Tourism has grown dramatically not just in interest, but also invitation. Tourism significantly contributes towards the growth of Kerala providing employability and overall economic productivity of the state.

The Importance Of Tourism In Kerala

The most appreciable importance of tourism lies in the fact that it is the only smokeless industry with high potential. The state of Kerala is one of the famous tourism destinations in India. The state has various tourism assets such as beaches, hill stations, backwaters, national parks and wildlife sanctuaries. The art forms of Kerala are embodiments of Kerala's culture. Kerala became "50 must see places in the lifetime to visit" (National Geographic Travel 2004. In recent time tourism is emerged as the major revenue generating industry to government of Kerala. This contributes significantly towards the growth of Kerala state providing employability and overall economic productivity of the state. Tourism has contributed almost 8% of the total employment directly and indirectly. The tourism industry provides a large number of benefits, prominent once are listed:

1. Creates and sustains job.
2. Best Smokeless Industry.
3. Major Revenue generating industry.
4. Contributes to the Quality of life.
5. Source of public as well as private income.
6. Source of cultural exchange.
7. Unites the whole world.

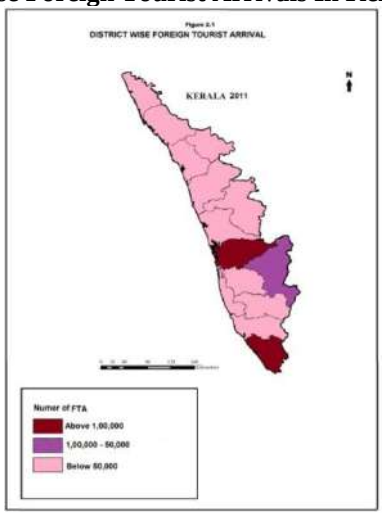
8. Poverty alleviation
9. Sustainable human development.
10. Preserves the beauty of nature.
11. Conservation of Historical Sites. Promotes related industries like handicraft, coir, textiles,

Exploring The Potential Of Tourism In Kerala:

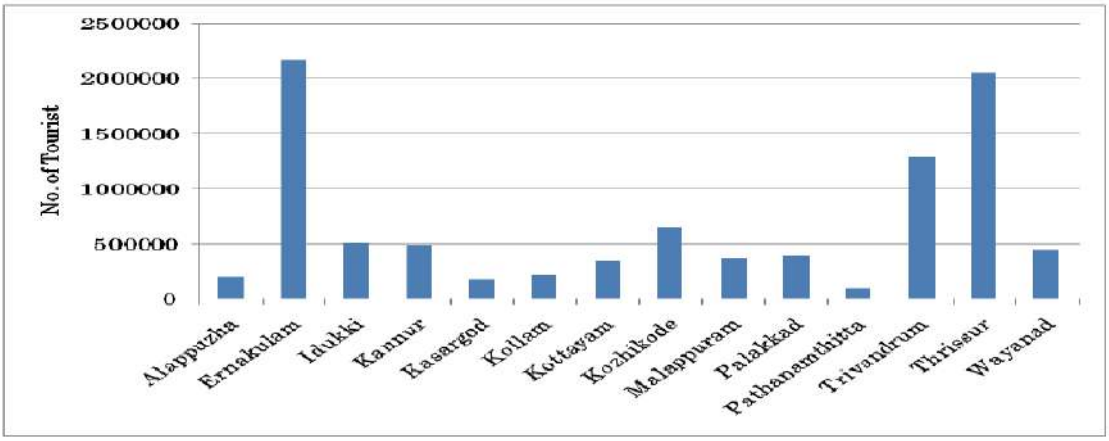
Being a green state with favourable cimate and natural surrounding, kerala can make rapid stride in the tourism sector. It enjoys unique geographical features that have made it one of the most sought after tourist destinations in Asia. With an equable climate,a long shoreline with serene beaches, Tranquil stretches of emerald backwaters, Lush hill stations and exotic wildlife, Waterfalls, Sprawling plantations and paddy fields, Ayurvedic health holidays, Enchanting art forms, Magical festivals,Historic and cultural monuments and an exotic cuisine... All of which offer a unique experience. But unfortunately, the potential of Kerala tourism is not explore to it's extend. Only few of the districts have come up as a good tourist destination. Ernakulam and Trivandrum are the main tourist attraction among the foreigners in Kerala (Fig F.1) while in case of domestic tourist arrival, only three districts, that is, Thrissur, Ernakulam and Trivandrum are the major attraction.

Fig (F.1)

Districtwise Foreign Tourist Arrivals In Kerala (2011)



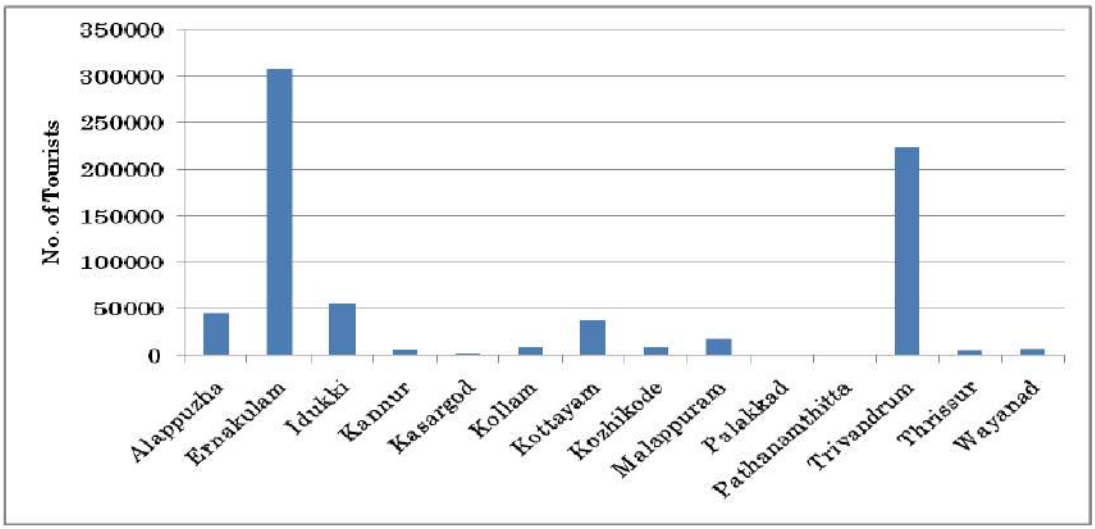
Source: Prepared By The Investigator



Source: Prepared by the investigator.

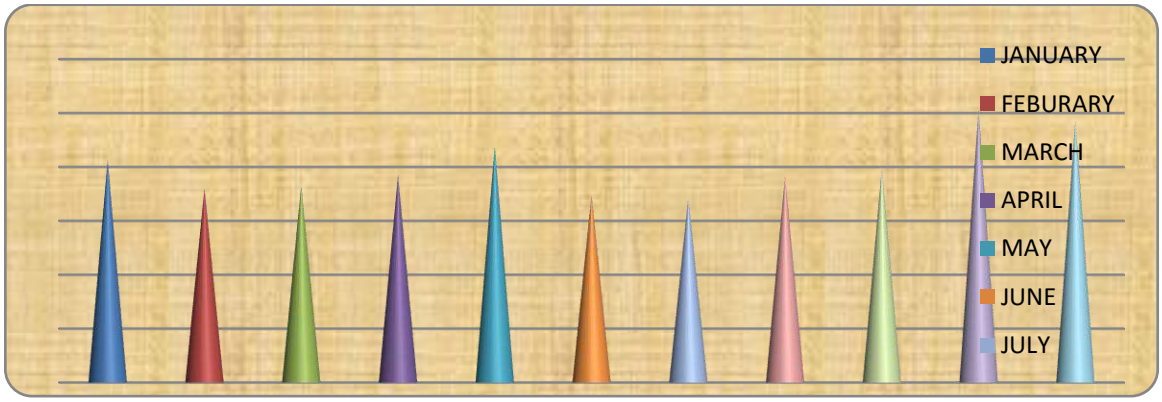
Least explored district of the state, with respect to domestic tourist arrival, is Pathanamthitta. The district has great potential for tourism especially pilgrimage tourism. Very less part of the state is known world over. Northern and Central part of Kerala are hardly visited by the foreign tourist. The existing and future potential and connectivity of the north and central tourist destinations is missing.(Fig F.3 and fig F.4)

(Fig F.4) Districtwise Foreign Tourist Arrivals In Kerala (2011)



Source: Prepared by the investigator.

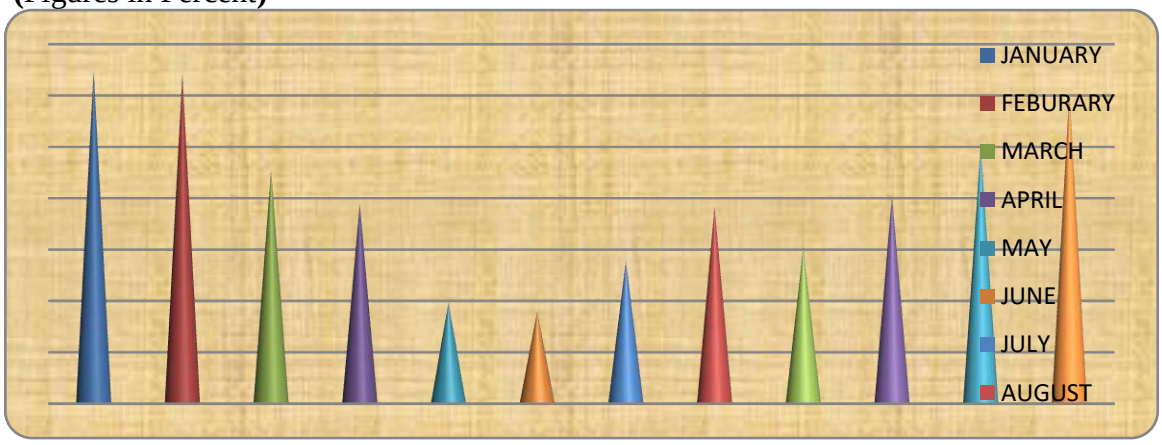
Fig (F.5)
Monthly Domestic Tourist Arrival In Kerala, 2011
(Figures in Percent)



Source: Prepared by the investigator.

The most soothing months for the foreigners are january, feburary, November and December, the winter season. The temperature varies from 28 deg cel to 18 deg. Cel. Foreign tourist arrival is observed to be higher in these months. However, domestic tourist arrival is mainly based on the vacation and occasions, as the data do not show much variation throughout the year.

Fig (F.6)
Monthly Foreign Tourist Arrival In Kerala(2011)
(Figures in Percent**)**



Source: Prepared by the investigator.

The domestic tourist arrival is dominated by the state itself, then by the other neighboring states like Tamil Nadu, Karnataka, Maharashtra etc. And among the foreign tourists visits, the major part of tourist are from European countries.(fig.F.7)(fig.F.8). These foreign visits mainly in two of the districts (Ernakulam and Trivandrum) of Kerala. In fact, the remaining part of Kerala is more beautiful with breath taking hills of Wayanad, virgin beaches of northern Kerala. Perhaps, there is need to increase the number of information centers in other districts of the state, so as to explore potentials of these hidden part of Kerala (table 1.1).

(Table 1.1)**District Wise Information Offices In Kerala (2011)**

S. No	District	Number of Information Offices
1.	Thiruvananthapuram (Trivandrum)	7
2.	Kollam	3
3.	Pathanamthitta	2
4.	Alappuzha	2
5.	Kottayam	2
6.	Idukki	2
7.	Ernakulum	5
8.	Thrissur	2
9.	Palakkad	1
10.	Malappuram	1
11.	Kozhikode	3
12.	Wayanad	3
13.	Kannur	2
14.	Kasargode	2
15.	**Total**	**37**

Source: Dept. of Tourism, Kerala

Suggestions:

WTTC in its report has stated – "Kerala needs to strengthen its overall infrastructure significantly, not only in terms of tourism but for the general economic development".

- More innovative Programs are needed for Conservation and Preservation of natural beauty of the state.
- Promotion programs for the preservation of rich Culture and Heritage of the state.
- Backwater and Boat tourism should be encouraged, the unique tourism in Kerala, which will separate state from rest of the country.
- All means of transport must be develop.
- Special Trains with fascinating facilities are need of today is required.
- Promotion of Ship tourism i.e., attractive ships with all modern facility that touching all major port of the world is needed.
- Higher participation of the state for international fairs.
- Advertising source market.&Quality Fairs and Festivals
- Good National and International Tour Operators
- Facilities and Conveniences for all tourist.
- Loss of passport and baggage
- Good connectivity between North Kerala and South Kerala.

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THE KONKAN GEOGRAPHER
Vol. No.05 Nov. 2013
ISSN 2277 – 4858

Sustainable Tourism Development :A study

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Introduction.

Sustainable tourism is synonym of eco-tourism. in the general sense, eco-tourism means management of tourism and conservation of nature in a way so as to maintain the fine balance between the requirements of tourism and ecology on one hand the needs of the local communities for jobs, new skills ,income generating employment and a better status for women on the other hand .

Tourism as a development tool.

The new National tourism in India, 2002 defines that our mission is to promote sustainable tourism as a means of economic growth and social integration and to promote the image of India abroad as a country with a glorious past, a vibrant present and a bright future. Policies to achieve this will be evolved around six broad areas – Welcome (Swagat), Information (Suchana), Cooperation (Sahyog) and Infrastructure development (Samrachana). The objectives of tourism development are to foster understanding between people, to create employment opportunities and bring about socio-economic benefits to the community, particularly in the interior and remote areas and to strive towards balanced and sustainable development and preserve, enrich and promote India's cultural heritage.

Production of Tourism

The word sustainable implies using a resource so that the resource is not depleted or permanently damaged. The variety products in the industry such as five star tourism,

beach tourism, pilgrim tourism, festival tourism, heritage, eco-tourism etc. should be brought under closer observation to identify the feasibility of each. Sustainability indicators are designed to provide reliable data and information on the environmental, socio-economic impacts of tourism development.

Positive Impact of Tourism.

The massive moment of tourist world over and the economic transformation that is taking place because of tourism growth are the known features of tourism. However, the unimaginable growth of international tourism has brought rapid changes in the economic, social, environmental, wild life and cultural setup of nations. The highlight of world tourism organization 2004 showsthat:-

1) Globally about 7% of total carbon emissions are attributed to air travel from tourism
2) In France, personal travel consumes about 5.3 million tons/equal ant petrol in energy/year or 11% of total energy consumption in transportation, mainly because 80% of domestic tourist travel is by private automobile.
3) In the US, tourism consumes 870 billion liters (230 billion gallons) of water /year, produce 317 million tons CO2 equivalent, and generates 11 million tons of suspended solid in sewage.
4) Tourism plays 20% less than average empires in other areas, and 13-19 million children are employed in the industry.

Results of Tourism.

Negative impact of tourism is a result in certain positive results and outcomes. It has the potential to promote social development through employment creation, income redistribution and poverty alleviation. Other potential positive impacts of tourism include:--

1) Tourism is a force for peace.
2) It helps to strengthen communities.
3) Facilities developed for tourism can also benefit the host communities.

4) Tourism encourages civic involvement and pride.
5) Tourism is one of the highest foreign exchange earners.

Tourism Helps to Environmental Protection.

Tourism has the potential to create beneficial effects on the environment by contributing to environmental protection and conservation. It is a way to raise awareness of environmental values and can serve as a tool to finance protection of natural areas and increase their economic importance. Tourism is one of the five top export categories for 83% of countries and the main source of foreign exchange for at least 38% of them. Tourism is the only international trade in services in which the less developed countries have consistently had surpluses compared with the rest of the world.

The Challenges of Tourism.

1) The Challenge of Globalization: - dealing with world-wide globalization trends is new to all of us. Everything is in a state of flux, demand, labor; knowhow and capital are all following to where the biggest hopes for the future life, with resultant standardization of production technologies, business strategies, marketing plans and management styles.
2) Challenge of the Changing Climate: - the environmental discussion is hitting-up from two sides. On the one hand, many places are already virtually at their ecological limits, and the consequences will become increasing the visible and tangible over the next raw years.
3) The challenge of changing values: - The process of changing values is equally turbulent. It is characterized by a basically hedonist attitude which, however, goes hand in hand with certain pessimism about the future.
4) The Challenge of Mass Leisure: - On the whole people in employment will have more leisure time, in particular through additional free days and as the result of longer breaks among young people. It appears that in

addition to its mass prosperity, mass mobility and mass tourism, a kind of mass leisure is the hallmark of our society.

Greater Participation.

In tourism, there not only winners but also many people are negatively impacted by external effects. In highly developed tourism areas, a kind of tourism awareness is spreading, with people talking of in adequate tourism awareness. To prevent result defensive attitudes, those affected must be given an active role.

More Human Approach:

Pressure to make profits and competitive outlooks have left their mark on many people making them hard hearted, strategy conscious tourism professionals, focused only on a rational action. However, sustainable tourism is based on human qualities such asemotions, empathy, cordially are institution. Such qualities should be encouraged nurtured more.

Conclusion.

Trends points to change and determine the future. In order to prepare a desirable future of tourism industry and to face the challenges before this industry, we should not only analyze the prevailing trends of tourism but also find a joint approach. Keeping this aspect in mind, following suggestions can help tourism professionals and policy designers in making the future of tourism desirable.

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THE KONKAN GEOGRAPHER
Vol. No.05 Nov. 2013
ISSN 2277 – 4858

Zoning For Sustainable Development In Ecotourism Destinations – A Study Of Munnar

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Abstract

The term 'ecotourism' is generally used in the context of tourism in ecologically sensitive areas like the protected areas. Ecotourism has been formulated and studied as an instrument for sustainable and equitable tourism. Ecotourism is thought to encourage both conservation and development and synergistic relationships between tourism, biodiversity and local people. Overdevelopment of ecotourism has resulted in a series of problems which also degrade an environment. Natural resource attractions can be jeopardized through improper uses or overuse. Physical site alteration and disturbance of biota; removal and redistribution of materials; pollution; loss of biodiversity and a host of other problems result from unplanned and uncontrolled tourism development. It is in this context that zoning of ecotourism spots for development activities assumes importance. Proper identification of ecologically fragile areas based on ecosystem, biodiversity and landscape and topography patterns is the major subjective research that has to be undertaken to zone the destinations and state down guidelines for their pattern of development. Munnar, 'the Kashmir of South India' in Kerala has become a very popular ecotourism destination in recent times and is also suffering from unplanned and haphazard development. Hence, this paper reveals the use of zoning in ecotourism destinations taking the major tourism spots of Munnar as a case study.

Key words: Ecotourism, Zoning, Ecosystem, Biodiversity, Landscape and topography patterns

Introduction

Tourism today is one of the fastest growing industries in the world. It has made rapid advances in recent years. The growth of the industry is now recognized in each and every nation by governments as well as the private sector. Around the globe, eco-

tourism is quickly becoming one of the most popular forms of vacationing. In an era of heightened environmental consciousness and accessibility to exotic locales, countries are busily promoting their natural resources as lures for tourists. The aim of Eco-tourism is to preserve the natural resources while also promoting them and accommodating volumes of tourists. Responsible eco-tourism includes programs that minimize the adverse effects of traditional tourism on the natural environment, and enhance the cultural integrity of local people. Ecotourism is thought to encourage both conservation and development and synergistic relationships between tourism, biodiversity and local people. This paper aims to use a subjective methodology to zone the major tourism spots in a destination so that they can be demarked for conservation or leisure purpose based on their importance. The methodology has been applied as a case study for tourism spots in and around Munnar, which happens to be the most popular and most developed hill station of Kerala.

Study Area

Overview

Munnar, located 5000 ft above MSL is a charming hill station surrounded by 12000 hectares of tea plantations. The towering Anamudi peak, the highest in South India looks over Munnar town. Munnar Grama Panchayath was formed in 1961. The village was earlier called Kannan Devan Hills. The three hill streams Mattupetty, Kannanmali and Nallathanni flow through and join together in Munnar town giving the place its name 'the land of three rivers'. The original inhabitants of Munnar are a group of tribals known as 'Muthuvans'.

The history of Munnar begins in the middle of the 19th Century by Mr.John Daniel Munro, an adventurous Englishmen and Kannan Thevar, the tribal chief of Anchunadu, one of the earliest settlements of South India. After getting the permission from his Highness Maharaja of Poonjar for acquiring 588 square kilometers of land, with the assistance of Kannan Thevar, Mr.Munro and his companions visited the misty mountains and hills of Munnar. Immediately they understood that the place is best suited for plantations and the tea and cardamom belt around sprout up.

Physiographic features

Munnar is located in Iddukki district in Kerala state. The tourism zone of Munnar shares borders with Theni and Palani regions of Tamilnadu. Munnar falls within the high hill ranges of the Western Ghats. The region is a typical example of par-humid area where tropical climatehas been remarkably modified by high altitude. The mean annual temp varies from 17.5o to19.5o C. The mean maximum temp is 25o C during March to May and the mean minimumtemp is around 8oC during January. The area receives rainfall both from south-west andnorth-east monsoons, the first being more

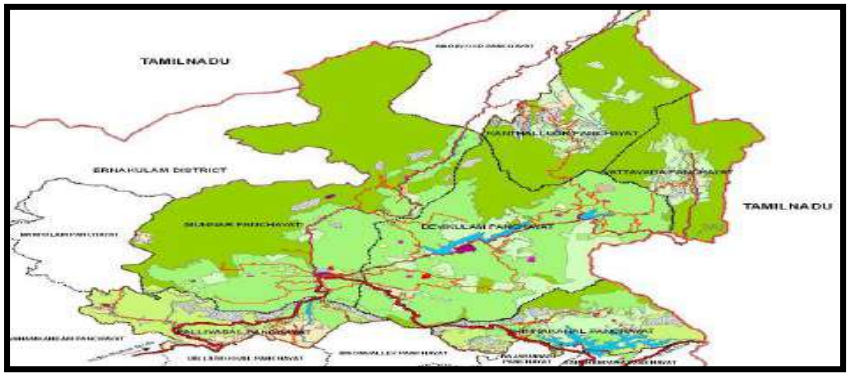
active. The mean annual rainfall ranges from300cms in the western part of the area decreasing progressively to less than 100 cms in thenorth-eastern and the eastern parts (Resource Atlas 1984). The area offers picturesque landscape of high hills which rise to more than 2000 m, dissectedby deep steep valleys. All the valleys in area fall above an elevation of 1400 m. The highest mountain peak in Peninsular India 'Anaimudi' (2695 m) falls on theNorthern boundary of Munnar Panchayath. The area around Munnar stands out as an elevatedportion when compared with the surrounding Periyar plateau (Resource Atlas, 1984) Ingeneral the terrain is characterized by steep to very steep slopes.

Soil

Soils in the area are known by the common name forest loam which falls in the soil groupHapuldolls-Tropudalfs-Tropeptic Eutrorthox (Dept. of Agriculture, 1978; ICAR, 1982). Thistype of soil is developed in the eastern part of Kerala within the forests over the weatheredPrecambrian Crystallines. The top layer is highly enriched in organic matter. The soil is darkand reddish brown to black in colour. It is rich in nitrogen but poor in bases. The soil underforest cover is quite fertile and promotes prolific undergrowth. In denuded areas, the soil is highly susceptible to erosion.

Drainage

The drainage pattern in the Munnar and Devikolam Panchayats shows profound structuralcontrol with straight linear courses. The alignment of streams along certain linear directionsfurther emphasizes fracture/lineament control. The diversity of stream directions like N-S, NE– SW, E – W etc contrary to normal westerly streams with tributaries joining from north andsouth is a peculiarity noted in this plateau landform of the highland. The diversity in drainagedirections in the high altitudinal zone may be due to the presence of remnants of an olderdrainage network which is constantly being captured and eliminated by the headword erosionof the prominent present day westerly drainage.



Map 1 – Land use pattern and general aspects of the study area

Land use

In all the Panchayaths under discussion the main landuse is Tea Gardens. This entire area wasoriginally covered by tropical evergreen forests and natural grass lands which gave place totea gardens during the colonial period. However, the planters maintained strips of originalforest vegetation in between estates and meticulously maintained the same during the colonialperiod.

Geology

The rock types in the area comprising the six Panchayaths belongs to the Precambriancrystallines forming part of the high-grade granulite terrain of South India. The majormappable, lithological units in the area are migmatites, calc-silicate rock, granite gneiss, fissile gneiss and granite.

Structure

The area shows evidence of high grade metamorphism and multiple deformations. Except theGranite all other rock types show well developed foliation.

Problems of overgrowth of Tourism in the study area

Munnar's surge from a quiet plantation town to a bustling tourist destination is a recent phenomenon. Today, Munnar enjoys the coveted position of the most important hill station of Kerala. The salubrious climate, enchanting natural beauty, unique biodiversity, splendid geographical attractions and vibrant cultural facets make Munnar very special among the travelers. A sudden spurt of tourism combined with haphazard developments in the name of tourism and allied infrastructure was the immediate outcome. Once a peaceful town known for its sprawling tea gardens, gurgling brooks, forests and grasslands has been converted into an urban concrete jungle today. (TDP Munnar; Kerala Tourism (June 2010).

Objectives of the study

The main objectives of the study include:

• Controlling and guiding developmental activities through zoning the tourism spots in Munnar and balancing the development through specific norms drawn for developmental activities.

• Tailoring tourism development in line with the unique characteristics and the natural attraction of the destination.

• Ensuring the conservation and preservation of its natural and cultural heritage value and also ensure visitor satisfaction and sustainable tourism development.

Approach and methodology

In this study, the focus is given on the conservation and preservation of the resources. This assumes relevance as the area is marked by fragile ecosystems and important cultural and historical endowments. Duly considering the ecological sensitivity and its vital relationship with tourism, the approach is to interconnect both for an organic and sustained relationship. This model initiates a detailed and objective assessment of the

plan area and its various sub elements particularly on its tourism characteristics and related ecological sensitivity.

The methodology for the study began with an extensive assessment of the study area with respect to its inherent tourism characteristics and the combined ecological status. The information for both was collected through a systematic and exhaustive process with the aid of structured formats and participatory consultation with respect to its tourism characteristics, infrastructural scenario, land use pattern, institutional presence, population and settlements. Simultaneously a systematic mapping of tourism resources at the local level has also been carried out.The data on tourism resources were collected from both primary and secondary sources. The primary data collection was mainly done through a participative consultation process and secondary data from a number of reference materials.

Criteria for zoning

Zoning can be defined as 'regulations that demarcate specific areas for different types of land uses and the development standards to be applied within each land use zone' (Inskeep 1991, p.432). Ideally, all zones should be designated so that they occupy appropriate environments. For the development of ecological index for each destination, the dynamic attributes which are specific to each tourist spot were taken – ecosystems, biodiversity (flora & fauna) profiles and landscape terrain attributes.

•Ecosystems – This include shoalas, grasslands, evergreen forests, deciduous forests, wetlands or water ecosystems and agro eco systems.•Biodiversity – This include flora and fauna, species richness, species diversity index, species uniqueness and rating, recreational value and educative value of the tourist spots

• Terrain fragility analysis – Munnar region falls under a very fragile terrain, of Western Ghats, once covered by tropical grasslands and natural forests. Therefore, in this study, for all the identified tourism spots, evaluation of terrain has been done to know its fragility. This includes slope, relative relief, land use, drainage pattern, drainage density, land form and surface materials.

Appropriate scoring for all these attributes was done subjectively and a total weighted score of 100 was given for each of the three criteria. As such, the values obtained for ecosystem and biodiversity was grouped into three – high, medium and low. For terrain fragility, the categorization was into highly unstable, moderately stable and stable.

Category	Ecosystem	Biodiversity	Terrain fragility
High	> 60	> 60	> 60
Medium	40 – 60	40 – 60	40 – 60
Low	< 40	< 40	< 40

Table – 1 Weightage scoring for each criterion

As seen from the table, the total weight awarded for each of the three criteria has been grouped into three categories – high, medium and low. The total average grade point value (AGP) was then calculated and this was converted to a scale from 0 to 1 and the destinations finally grouped into five zones.

Categorization of zones

The methodology was applied to ten major natural tourism attractions or micro destinations in and around the major tourism destination of Munnar. Manmade tourism attractions like religious shrines, museums and parks have not been selected for this study. Depending on the Average grade point value obtained for each site, they have been categorized into five zones – Core Conservation zone, Buffer Conservation zone, Ecotourism zone, Leisure tourism zone and Local recreation zone, from high to low scale.

No.	Zone	AGP Value (0 – 1 scale)
1	Core Conservation Zone	0.8 – 1.0
2	Buffer Conservation Zone	0.6 – 0.79
3	Ecotourism Zone	0.4 – 0.59
4	Leisure Tourism Zone	0.2 – 0.39
5	Local Recreation Zone	0 – 0.19

Table 2 – Categorization of Zones

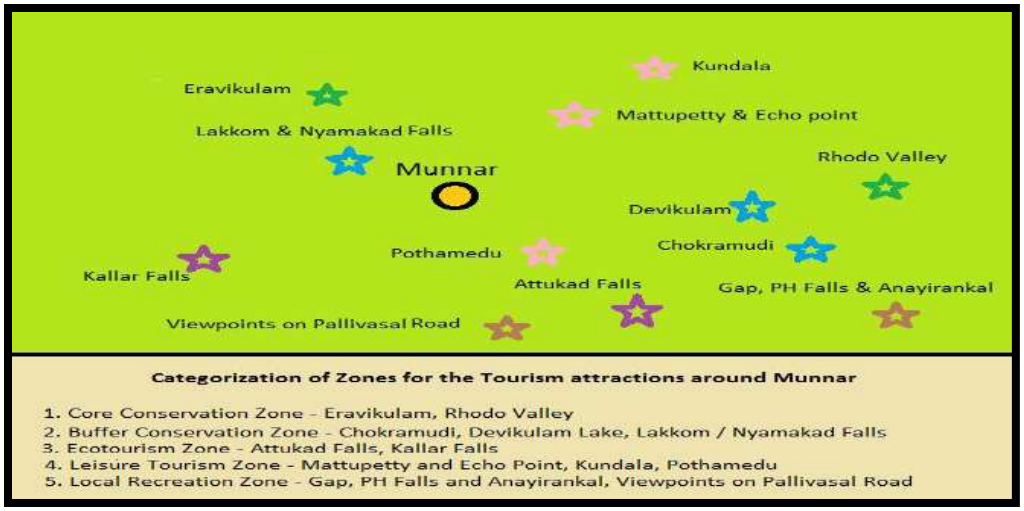
Findings of the study

The attractions taken are located in and around Munnar and fall in Munnar and Devikulam panchayaths. A few attractions are located in Chinnakanal and Pallivasal panchayaths. As mentioned in the methodology, all the natural attractions selected were studied with the three criteria and its categories. Each of the criteria was given the scores subjectively and finally tabulated to total average and AGP value was given. The details have been summarized in the table below.

No.	Name of the Tourism attraction	AGP Value	Name of Zone
1	Attukad Waterfalls	0.58	Ecotourism Zone
2	Chokramudi	0.68	Buffer Conservation Zone
3	Devikulam Lake	0.63	Buffer Conservation Zone
4	Eravikulam National Park	0.97	Core Conservation Zone
5	Gap View / Anayirankal / Powerhouse Waterfalls	0.18	Local Recreation Zone
6	Kallar Waterfalls	0.49	Ecotourism Zone
7	Kundala Dam	0.32	Leisure Tourism Zone
8	Lakkom and Nyamakad Waterfalls	0.63	Buffer Conservation Zone
9	Mattupetty Dam and Echo Point	0.35	Leisure Tourism Zone
10	Pothamedu View Point	0.30	Leisure Tourism Zone
11	Rhodo Valley	0.87	Core Conservation Zone
12	Viewpoints on Pallivasal Road	0.15	Local Recreation Zone

Table 3 – Zoning of Tourism attractions

Maximum conservation and minimum tourism has to be permitted in the Core Conservation Zone followed by Buffer Conservation Zone. Ecotourism activities and educational activities can be permitted in Ecotourism Zone. The last two zones, Leisure Tourism Zone and Local Recreation Zone can be mostly used for tourism activities as it falls under the least fragile environment. Based on this study, basic guidelines for each of the zones for a sustainable balance between tourism and environment have been given.



Map 2 – Zoning of tourism spots around Munnar

- Core Conservation Zone: This represents spots which are ecologically sensitive. All such areas should be devoid of all kinds of tourism interference including tourism infrastructure. The whole focus should be on conservation and preservation.
- Buffer Conservation Zone: These are normally characterized by fragile environment. However, minimal tourism with a conservation focus can be entertained in these areas. No infrastructural development should be permitted here also.
- Ecotourism Zone: In such spots ecotourism can be allowed, however planned and regulated. The development of minimum basic infrastructure and amenities are permitted at the node which involve eco friendly structures like basic camping facilities, thatched roof cottages, tree top huts etc. Activities like trekking, camping, angling, adventure activities etc. will be given priority here with controlled tourist numbers at a given time.
- Leisure Tourism Zone: These attractions represent locations less significant from its ecological perspective and hence better suited for infrastructural developments. They can accommodate more tourists and permanent constructions.
- Local Recreation Zone: The areas under this zone are least important from ecological point of view. They serve as picnic spots or are meant for mass tourism projects and infrastructural developments. The tourism focus should be one leisure and entertainment facilities with accommodation, ancillary services, etc.

Conclusion

Earth has provided us with splendid nature and plenty of resources. Nature has the power to soothe the soul and the body. As such, nature based ecotourism is the buzz word round the world today. Ecotourism should be promoted in order to maximize its economic, environmental and social benefits while avoiding its past shortcomings and negative impacts. Zoning is a best solution for ensuring sustainable and long lasting development of any nature based tourism destination. The study can be modified and applied to the case of other similar destinations also.

If some ecologically sound measures and alternative development based on sustainability is not applied to environment, there may arise several serious uncontrollable ecological hazards which may become responsible for the extermination, extinction and devastation of human race from the planet Earth. We have to preserve and conserve our 'Mother Earth', its land forms, culture and heritage not only for us but also for the coming generations. More and more studies in this area are welcomed and this paper may serve as a key for the studies to follow.

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THE KONKAN GEOGRAPHER
Vol. No.05 Nov. 2013
ISSN 2277 – 4858

Solid Waste Management through Community Participation in Urban city of Nashik

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Abstracts:

Community plays an important role in solid waste management. Treating garbage at ground level, segregation of waste products into biodegradable & non degradable reduces the amount of solid waste. This requires awareness, awakening and environmental concern in the community. This paper presents various methods of reduction of waste and encourages reuse of material. This helps local bodies to treat and process the waste cost effectively. Main emphasis is given on 3R's- Reduce, Reuse and Recycle which is easy and practical way that can reduce amount of solid waste to keep our city clean and beautiful. A combined disciplinary programme of action is needed to achieve a HEALTHY ENVIRONMENT.

Introduction:

Any useful article out of place is what GARBAGE becomes, nothing is ever useless! Japan has decided to make Japan Garbage Free by 2020. HOW? By using every piece of what is GARBAGE to make something USEFUL. They are segregating houseful garbage into as many as 44 different categories. WHAT can we do?

In 1972 the UN conference on the human environment focused worldwide attention on the environmental hazards that threaten human beings. To facilitate work in this area, WHO has compiled a wide ranging survey of environmental hazards to human health.The purpose of environmental health is to create and maintain ecological conditions that will promote health and thus prevent disease. Faeces disposed near homes, contaminated drinking water, fish from polluted rivers and coastal waters, and agricultural produce fertilized with human waste are all human hazards. The lack of water supply and sanitation is the primary reason why diseases transmitted via faeces are so common in developing countries. The most important of these diseases, diarrhea, and intestinal worm infestations, account for 10 per cent of the total burden of diseases in developing countries.

Objectives:

1. Various measures to generate awareness among the citizens in minimizing garbage and the degree of its implementation.

2. To suggest possible measures for achieving 'Zero Garbage' concept in Nashik City.
3. Educational measures according to Social & economic conditions like customs, culture, habits, income, occupation and religion.
4. Health impact of unhygienic environment.

Methodology:

The study is mainly based on secondary data. It is mainly collected from Nashik district Municipal Corporation, Human health and Environment, Regional health department, Water and sewage works, Public health and preventive medicine.

The study has been carried out on the basis of data collected from city waste management reports published by local News papers, local bodies, and Municipal solid waste management plan-2012.

Target groups:

1. General public (Residents/ markets/ commercial, hotels etc)
2. School children
3. Municipal corporation workers.

Study Region:

Nashik is one of the holiest cities from Maharashtra, the city is known for its picturesque surroundings and pleasant climate. The river Godavari flows through Nashik. Kumbhamela is held once in 12 years. Nashik is known as Grape city and wine city. Nashik, a major industrial town situated at Latitude19 **0** - 33' and 20**0** - 53' North and Longitude 73 **0 –** 16' and 75**0** –6' East in Northern Maharashtra, is located at a height of 565 meters above mean sea level at a distance of 180 Km from Mumbai (Bombay), 210 Kms from Pune, 165 Kms. from Ahmednagar and 180 Kms from Aurangabad. The total area is 259.13 Sq.Km which is 2nd largest in Maharashtra after Mumbai. It has a population of **15, 00,000** and road length of 850 Kms. Similarly Mumbai Agra National Highway No.3 (1000 Km) and Nashik-Pune National Highway No.50 (210 Kms). The main rivers flowing in the district are Godavari, Kashyapi, Darna, Girna, Kadwa and Nasardi (Nandini),. There are two industrial eastates namely Satpur having 1600 Acres and 750 no. of units and Ambad having 1400 Acres area with 850 nos. of units.The city is administered by Nashik Municipal Corporation (NMC) since 1982.In the entire NMC area about 225MT of solid waste is generated per day. The more this waste is minimize at the source of waste generation,, better will be the chance of success. The city has population of 1,480,769(censes,2011) Male: 54%; literacy Rate: 80%Female: 66%; Literacy Rate:66%

Municipal solid waste management- Legal Background:

In 2000, the Ministry of Environment and Forest, GoI, (MoEF) notified the Municipal Solid Waste (Management and Handling) Rules (MSW (M&H) Rules) for all Indian

cities. The Rules contained directives for all ULBs to establish a proper system of waste management.

To improve the MSWM systems in the cities the following seven directives were given:

1. Prohibit littering on the streets by ensuring storage of waste at source in two bins; one forbiodegradable waste and another for recyclable material.
2. Primary collection of (segregated) biodegradable and non-biodegradable waste from thedoorstep, (including slums and squatter areas) at pre-informed timings on a day-to-day basis using containerized tri-cycle/hand carts/pick up vans.
3. Street sweeping covering all the residential and commercial areas on all the days of the year irrespective of Sundays and public holidays.
4. Abolition of open waste storage depots and provision of covered containers or closed body waste storage depots.
5. Transportation of waste in covered vehicles on a day to day basis.
6. Treatment of biodegradable waste using composting or waste to energy technologies meeting the standards laid down.
7. Minimize the waste going to scientifically engineered landfills (SLFs) and dispose of only rejects from the treatment plants and inert material at the landfills as per the standards laid down in the rules. Current status of SWM in Nashik: The Nashik Municipal Corporation is collecting 300-350 Tons MSW per day. According to DPR for SWM, 2007 the average waste generation is only 218 gm/capita per day. This situation is either due to collection inefficiencies or due to high proportion of agriculture/ horticulture farming, which helps in utilization of green waste for in-situ composting. With better collection and transportation measures, the collection efficiency should increase. The city is registering almost 20% extra growth rate compared to similar other cities in India.This is leading to rapid development of real estates, housing, complexes, shopping malls etc. Consequently the per capita MSW quantity has been estimated to reach 400 gm/day by 2011 as per DPR (2007).

Source: DPR for SWM, 2007

Analysis of city waste carried out recently, reveals 37.8% easily compostable (short-termbiodegradable) materials, 19.50% hard lignite's and long term biodegradables and 16.20%textiles, plastic, rubber etc. These last two components having 35.70% content in the MSWhave become a major cause of concern. These materials are a negative contributor to theprocessing plant efficiency and rapidly exhaust available land for landfilling.Mounting heaps of high volumes of – low density waste is a common scene around eachcompost plant. This has necessitated re-thinking of the integrated technological approach tosolve MSW disposal problem towards a total solution in a sustainable manner.Looking to the recent trend of changing waste characteristics, increasing quantities ofcombustible materials and infrastructural bottlenecks, it became essential to upgrade overallMSW collection, storage, transportation and processing through integrated technologicalfacility at Khat Prakalp site. This plant came into operation in 2000. However, this plant wassmall and could not deal with the entire 350 TPD waste reaching the plant and a backlog of>2.50 lakh MT waste was generated, which was piled put in two heaps close to the plant.Under JNNURM, NMC sought more funds and upgraded the plant to a capacity of 500 to600 TPD. The plan is that by the time backlog is cleared, fresh arrivals will reach this level of plant capacity.NMC has given contract of collection and transportation of solid waste of the 6 divisions ofthe city to two contractors. Contract of collection and transportation includes door to doorcollection of solid waste through Ghanta Gadi and transportation to Municipal Solid WasteTreatment Facility. Solid waste is collected from 2.9 lakh households of 108 wards of the city through 124 Ghanta Gadi's and ownership of the Ghanta Gadi's is with NMC.

Table 3: Details of Solid Waste Transportation Vehicles

Sr.no.	Types of Vehicles	Total No.	Capacity (T)	Tons/ month
1.	Lorries/Trucks	4	3	360
2.	Mini Lorries/Trucks	3	**1**	**90**
3.	Tracer Trailers	**18**	**3**	**1620**
4.	Tipper Trucks (Ghanta Gadi)	**124**	**3**	**10890**

Processing of MSW

The new processing plant includes the following:

- **Pre-sorting Unit:**

It is electromechanical segregation system for incoming non segregated MSW with the capacity of 500 TPD and it comprises of two lines with all necessary requirements and materials. After mechanical segregation compostable material will go to windrow composting, material with calorific value goes to RDF plant and inert will be further processed at Inert Processing plant.

- **Aerobic Composting Unit:**

Composting is done through windrow composting method and sheds have been constructed for windrows. Today out of total MSW 3 to 5 % is converted into compost. The compost has already become popular amongst the farmers within 100 km radius of Nashik. By maintaining the price line of Rs2000/MT Ex-factory level for

loose form and Rs. 2450/- for packed form with necessary backup support, entire quantity of compost will be saleable in this belt. Once segregation at source will be practiced then the quantity of generation of compost will increase up to 10 to 15 % of total MSW.

- **Inert processing unit**

Inert processing unit, with capacity of 50 TPD, comprises of mechanical sieve and air density separator. Main purpose of inert processing plant is to recover the construction material from the waste and to recycle it by selling or utilizing it for in house construction activities. This is mainly to minimize landfill burden on O&M cost and also saving of land.

- **Leachate treatment plant:**

Leachate treatment plant with capacity of 0.4mld leachate or 10 TPD organic wastes has been installed for treatment of leachate coming out from the windrows, the solid waste dumps and sanitary landfill site. Proper arrangement for collection and transportation of leachate has been made. As leachate is primarily generated in monsoon season and during other period, same plant is utilized for bio gas generation from organic waste. 40 KW power is generated through the plant and utilized for operation of pumps at MSWM facility.

- **Refuse Derived Fuel (RDF) Plant:**

The high calorific energy containing materials present in MSW are to be handled separately from the stage of receiving at the tipping floor onwards. RDF plant with capacity of 150 TPD is installed for generation of fuel pellets from high calorific value materials. Woody materials, paper products, textiles, jute etc forms the main constituents of RDF which is a valuable source of alternate energy. The technology for RDF primarily focuses on refinement of MSW through material re-combinations, segregation, drying, size reduction, blending and homogenization. This material is further refined for separation of sand, dust, metals, glass etc before grinding or shredding. The shredded material is obtained as fluff (<2 cm size) which is further processed into pellets, briquettes or bailing. NMC is exploring the possibilities for marketing of fuel pellets and nearby industries have shown their interest for fuel pellets.

- **Animal Carcass Incinerator:**

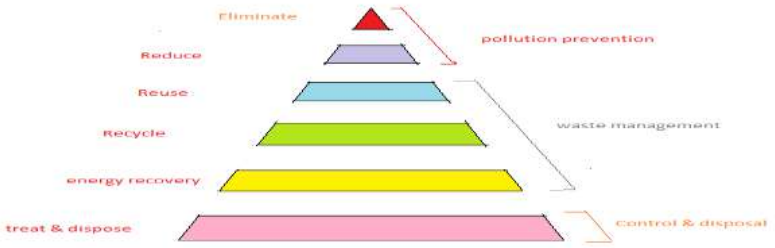
Dead animal carcass incinerator with the capacity of 250Kg per hour is installed for the incineration of dead animals such as dogs, cattle's etc. Solid Waste Management Plan for Nashik Municipal Corporation

- **Sanitary Landfill:**

The solid waste that is not suitable for any processing is transported to the sanitary landfill site. For this purpose, a sanitary landfill in an area of 2 hector has been

developed. All the necessary aspects of scientific land filling were considered during creation of sanitary landfill. Proper arrangement for leachate is also provided and this is connected to the leachate treatment plant for further processing.

Fig: WASTE MANAGEMENT HIERARCHY



Tips for reducing solid waste - and saving money too!

The three Rs - Reduce Reuse and Recycle. There are many easy and practical ways that YOU can reduce the amount of solid waste you produce, and keep city clean and beautiful. Here are a few ideas.

Reduce

- Take your own bag or basket to the grocery and market.
- Do not accept bags for your purchases in stores unless you really need them (e.g. you do not need to place a bag of bread in another bag).
- Choose products wrapped in the least unnecessary packaging.
- Buy everything you can in bulk (large economy sizes) rather than small packages that use much more wasteful packaging.
- Try using concentrated products (e.g. soap) which need less packaging.
- Buy vegetables loose rather than in plastic bags.
- Compost vegetable scraps and garden waste. This can account for up to three-quarters of the waste you produce.
- Don't waste food and store leftovers in a reusable container.
- Give your food scraps to animals.
- Maintain and repair items (e.g. clothes, appliances) so they last longer.
- Sell or donate things you don't want instead of throwing them out (e.g. clothes, books can be sold at garage sales or handed down to younger ones).
- Borrow, rent or share things you don't use often (e.g. tools).
- Use cloth napkins, sponges and dishcloths instead of paper towels and napkins.
- Do not take more than you need to use. For example, don't take packets of ketchup, napkins, or utensils from restaurants unless you need them.
- Use low-energy fluorescent bulbs that last longer than the regular incandescent bulbs.
- If you mow your lawn or trim plants, let the trimmings remain on the soil to decompose and release important nutrients for the plants to use or use them in a compost bin.
- Avoid disposable, single-use items.

Reuse

- Use both sides of paper. Keep a collection of scrap paper to reuse.
- Wash plastic containers and jars and reuse.
- Buy things in plastic or glass containers that can be reused.
- Reuse boxes.
- Use reusable containers for food instead of disposable boxes, plastic wrap, foil, or sandwich bags.
- Reuse plastic bags.
- Ask restaurants to use reusable food containers that can be washed (or at least paper which is less damaging to the environment).
- Reuse envelopes.
- Use cloth bags for shopping.
- Use refillable, pump-spray bottles.
- Buy milk and water in refillable bottles.

Recycle

Buy recycled products. The recycling loop is not closed until we purchase products made from recycled materials.

Conclusion:

Even though the annual production of solid waste is incredibly high, progress is being made to help stabilize growth. With recovery rates growing in the past decade it gives hope to the future of relying on waste recovery rather than waste depositing. The United States economy is not going to change from being consumption based society, but it can become more waste conscious in the products it supports. The markets for previously recycled items, bulk foods and impact reducing products are more available than ever. As awareness continues to grow about the importance of recovery efforts more and more people will be willing to recycle or compost. As methods are implemented for people to reduce their waste easily, solid waste production will continue to stabilize helping reduce impacts felt worldwide.Sanitation is a way of life, it is the quality of living that is expressed in the clean home, the clean farm, the clean business, the clean neighborhood and the clean COMMUNITY. Being a way of life it must come from within the people; it is nourished by knowledge and grows as an obligation and an ideal in human relation.

THE KONKAN GEOGRAPHER
Vol. No.05 Nov. 2013
ISSN 2277 – 4858

Tahsilwise Work Participation Rate In Sangli District

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Abstract:

The study of economic composition of population remains incomplete without its reference to the occupational composition of a population. The occupation referred to trade or profession or type of work one is engaged for survival. Participation in any economically productive activity is called as *work*. A person doing any type of economically productive activity is a *worker*. The term *labour force* is equivalent to *economically active population*, according to the terminology recommended by the United Nations.. Similarly, the term *working population* is also equivalent to *economically active population.* A distinction is also made between *main workers* and *marginal workers.* Census of India divides the population into two categories of workers and non-workers. The size of working force depends upon a variety of demographic, social and economic factors. The composition of occupational structure in an area varies by sex, residence and age. Both, child and female participation in economic activities in rural areas are relatively high in comparison to that in the urban areas. However, the bulk of working force in most of the countries is supplied by the age group of 15 to 59/64. In the present paper an attempt has made to analyse the Work Participation Rate of not only the total persons but also of males and females of all the 9 tahsils in Sangli District. Spatio-temporal changes in WPR are studied by using the Census data of 1991 and 2001.

Key Words: Labour force, Economically Active / Inactive population, Main / Marginal workers, Occupational structure,

Introduction

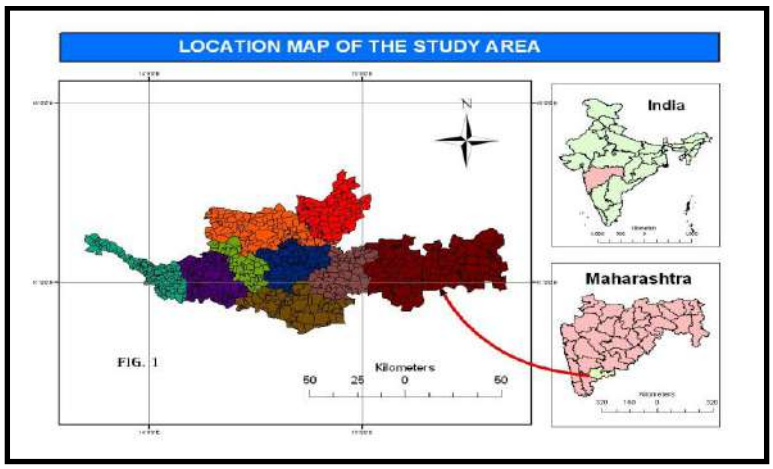
Among various elements of population composition, economic composition holds a prime place for population geographers. The study of economic composition of population remains incomplete without its reference to the occupational composition of a population. The occupation referred to trade or profession or type of work one is engaged for survival (Chandna and Sidhu)[1]. However, each kind of occupation means doing a certain type of work. We must understand the term '*work'* correctly because this word is used in a special sense in the census. Participation in any economically productive activity is called as '*work*'. A person doing any type of economically productive activity is a '*worker'*. The size of working population, its distribution into various occupations, sex-wise participation in different economic

activities etc. are studied in the '*structure of occupation*'. The occupational structure of a society is the product of number of intimately related factors. A distinction has often also been made between total population and manpower. Manpower of a nation consists of those persons who are fit enough to produce goods and services and who have the personality to participate in the economically gainful activities (Chandna)[2]

The term ' *labour force'* is equivalent to '*economically active population'*, according to the terminology recommended by the United Nations[3]. Similarly, the term '*working population*' is also equivalent to '*economically active population'* (United Nations)[4]. The Multilingual Demographic Dictionary[5] defined working population as, "*Generally speaking, the working population consists of those individuals who take part in the production of economic goods and services, including unpaid family workers in an economic enterprise as well as persons who work for pay and profit"*. According to the Census of India[6], "*Work* (economic activity) *may be defined asparticipation in any economically productive activity with or without compensation, wages or profit".* Such participation may be physical and/or mental in nature. Work involves not only actual work but also includes effective supervision and direction of work. The definition of a worker in India has been changing from census to census. At the time 1981 census, a distinction was made between *main workers* and *marginal workers.* The main workers are those who worked in some economic activity over a period of six months or more in both the agricultural seasons. The marginal workers, on the other hand, were those who have worked any time at all in the year preceding the enumeration but have not worked for the major part of the year. Thus, the 1981 Census of India first attempted to divide the population into two categories of workers and non-workers. The working population is also classified with reference to employment status. Employers are distinguished from employees on the one hand and from workers on own account or independent workers on the other hand.

The Study Area

The district of Sangli like Satara and Kolhapur is a Southern district of Maharashtra state. It lies between $16^{o}40'$ and $17^{o}33'$ North Latitude and $73^{o}42'$ and $75^{o}40'$ East longitude (Rammurthy)[9] , and has an area of 8572 sq. km. and Population of 25, 83,524 spread over in 9 tahsils,721 inhabited villages , 3 uninhabited villages and 8 urban centers (Census, 2001)[10]**.** Of the 35 districts in Maharashtra state, Sangli district occupies 21st rank in area and 15th rank in population. Hence, it is smaller in area and medium sized in population.



Objectives:

1. To analyse the Work participation Rates of all the 9 tahsils in Sangli district.
2. To study the Spatio-temporal changes of WPR of these tahsils.
3. To analyse the male-female ratio in WPR of these tahsils.
4. To find the causes and effects of these changes.

Database AndMethodology:

The present paper is entirely based on secondary data. The secondary data on WPR have been gathered from Directorate of Census Operations, Maharashtra, Mumbai (1991 & 2001). '*The work participation rate (WPR) is defined as percentage of total workers (main and marginal) to total population'* (2001 Census).

The formula adopted for the same is as follows ;-

$$\text{Work Participation Rate (WPR)} = \frac{\text{Total Workers (Main + Marginal)}}{\text{Total Population}} \times 100.$$

The present work is entirely descriptive and analytical. All the tahsils are depicted on maps by using Locational Divided Proportional Circles.

Trends In Work Participation Rate (Wpr) [1991-2001]

As has been pointed out earlier, despite the fact that the data on economic activity have been collected in each census right from 1881, the concept regarding economic data have differed from census to census. The labour force participation rates for different years are, therefore, not strictly comparable, and no firm statement can be made about the time trend in the labour force participation rates in India. Some of the difficulties in studying and interpreting these rates over a period of time stem mainly from the different definitions and concepts used during different census operations. In 2001, the work participation rate (WPR) for Maharashtra (43.46) is higher than that for India (39.28) by 4.2 per cent. The WPR in Maharashtra in1991 was 42.96. Male WPR in Maharashtra (53.59) for 2001 is higher than the national male WPR (51.59) by 1.56 per cent. WPR for female in Maharashtra (32.59) for 2001 is higher than the national female WPR (25.68) by 6.9 per cent.

Table 1

Maharashtra State and Sangli District : Work Participation Rates (1991-2001)

Area	T/R/U	1991			2001		
		Persons	Males	Females	Persons	Males	Females
Maharashtra State	Total	42.96	52.16	33.11	43.46	53.49	32.59
	Rural	49.66	53.17	46.04	50.43	54.18	46.52
	Urban	32.32	50.63	11.44	34.00	52.60	12.72
Sangli District	Total	44.12	53.17	34.67	48.24	56.25	39.88
	Rural	47.43	54.10	40.52	52.86	57.82	47.70
	Urban	32.88	50.06	14.44	34.03	51.46	15.55

Source *: Census of India, 1991 and 2001, Maharashtra Series.*

In 1991 the total labour force in the study area was 814,726 (44.12%.) and 1,218,655 (47.2%) in 2001. Thus there is an increase of 403,929 (3.8%) persons in the labour force in a decade. 591,536 (53.17%) males and 223,190 (34.67%) females were engaged in work during 1991. It is increased up to 56.25% (740,429) in males and 39.88% (478,226) in females in 2001. As far as Maharashtra is concerned these figures are 42.96%, 52.16% and 33.11% respectively in 1991 and 43.46%, 53.49% and 32.59% respectively in 2001. It revealed high dependency ratio in the state over the study region. At times those who are willing to participate in economic activities may not get the work. Under these circumstances either underemployment or unemployment may occur resulting into relatively low proportion of working force. The activity rate of study area is higher in rural areas (52.86%) as compared to the urban areas (34.03%) in 2001. There is a striking difference (32.15%) in the activity rates of females in the urban (15.55%) and rural (47.70%) areas.

Tahsilwise Work Participation Rates (1991-2001)

Table 2

Tahsilwise Work Participation Rates (WPR) (1991-2001)

Sr. No.	Tahsil	T R U	Work Participation Rate (%)					
			1991			2001		
			Persons	Males	Females	Persons	Males	Females
1.	Shirala	T	46.4	51.0	42.1	49.3	53.5	45.1
		R	47.1	51.1	43.4	49.4	53.6	45.3
		U	32.4	47.9	15.9	44.2	51.6	37.4
2.	Walwa	T	45.8	54.8	36.1	46.6	55.2	37.4
		R	47.7	55.7	39.1	48.7	56.0	40.9
		U	37.8	51.3	23.3	39.1	52.4	24.8
3.	Palus	T/R	N A	N A	N A	52.3	60.4	43.6
4.	Khanapur	T	48.5	55.4	44.6	59.2	63.5	54.9
		R	50.3	52.5	48.2	63.1	65.3	60.9
		U	36.0	52.3	18.8	39.2	54.6	22.8
5.	Atpadi	T/R	46.4	52.2	40.4	49.0	54.3	43.7
6.	Tasgaon	T	46.0	54.6	37.0	53.2	58.5	47.7
		R	47.1	55.1	38.8	56.3	59.9	52.6
		U	34.4	49.5	18.2	36.8	51.5	20.9
7.	Miraj	T	36.9	52.2	20.4	37.5	53.2	20.8
		R	44.0	55.5	31.7	45.7	57.0	33.7
		U	31.6	49.7	12.0	32.2	50.7	12.6
8.	Kawathe Mahankal	T/R	48.0	52.9	43.0	50.9	56.7	44.8
9.	Jat	T/R	49.1	54.0	44.0	50.6	55.3	45.6
Sangli District Average		T	44.12	53.17	34.67	47.20	56.10	37.90
		R	47.43	54.10	40.52	51.40	57.70	45.00
		U	32.88	50.06	14.44	34.00	51.30	15.70

Source : *Census Of India, Sangli District : 1991 and 2001.*

Spatial Variation (Total) in W.P.R.

Table 2 represents tahsilwise total rural-urban and male-female work participation rates (WPR) for 1991 and 2001 in the study area. Simultaneously they are depicted in the Figs. 2 and 3. In 1991, the average WPR of Sangli district was 44.12% which is increased to 47.20% in 2001 showing the growth of only 3.08%. Generally, it is observed that comparatively WPR fluctuates within the tahsils and study area over time. For the detailed analysis all the tahsils are classified into 3 categories according to their WPR (total) for both the decades. Their break up is asfollows :

Sr.No.	1991		2001	
	Category of W.P.R.	Tahsils (8)	Category of W.P.R	Tahsils (9)
1	High > 48.1	Jat, Khanapur, Kawathe Mahankal	High > 52.1	Khanapur, Tasgaon, Palus
2	Moderate 46.1- 48	Shirala, Tasgaon, Atpadi	Moderate 50.1- 52	Kawathe Mahankal, Jat
3	Low < 46	Walwa, Miraj	Low < 50	Shirala, Atpadi, Walwa, Miraj

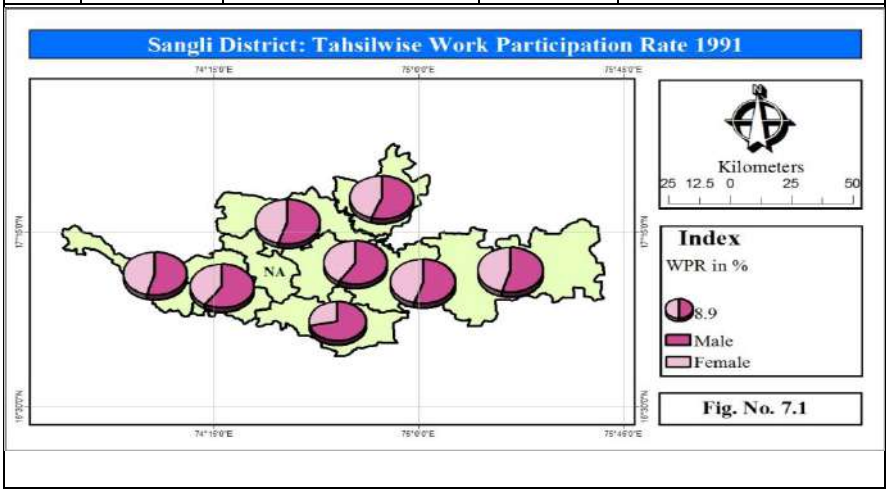


Fig. 2

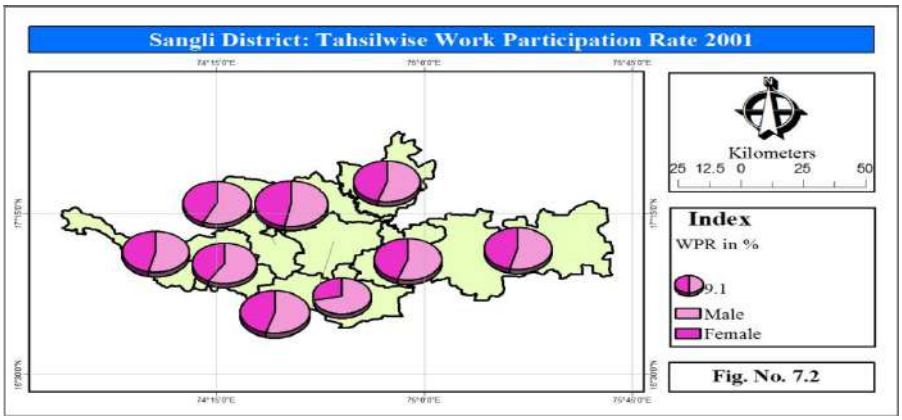


Fig. 3

i) High W.P.R. :-In 1991, Jat (49.1%),Khanapur (48.5%) and Kawathe Mahankal (48%) tahsils are in the category of high WPR, whereas, in 2001, Khanapur (59.2%), Tasgaon (53.2%) and Palus (52.3%) tahsils come under this category. All these tahsils (except Palus) belong to drought prone area of the district. Physio-climatically and socio-economically they are underdeveloped. Agriculture is the main activity of this area. The females and children of farmers also take parts in various agricultural activities to support the family income and hence the WPR is more in this area.

ii) Moderate W.P.R. :- Shirala (46.4%), Atpadi (46.4%) and Tasgaon (46%) tahsils in 1991; and Kawathe Mahankal (50.9%) and Jat (50.6%) tahsils in 2001 represent the category of moderate WPR. Only 1.5% increase in WPR of Jat Tahsil pushed it to moderate category in 2001. Kawathe Mahankal tahsil ranks third in 1991 Census which is declined to moderate category in 2001 with 2.9% increase in WPR.

iii) Low W.P.R. :- Miraj and Walwa tahsils represent this category in both the decades. The lowest WPR is observed in industrially & economically developed and urbanized tahsil Miraj in both the censuses of 1991 (36.9%) and 2001 (37.5%). It is followed by Walwa Tahsil (45.8% &46.6%) with the same reasoning. Shirala (49.3%) and Atpadi (49%) tahsils have declined their position from moderate to low WPR during 1991-2001. The completion of Chandoli dam reduced the WPR of Shirala tahsil, while drought condition affected on the WPR of Atpadi tahsil.

The highest progress in WPR is observed in Khanapur (10.7) and it is followed by Tasgaon (7.2) tahsil during 1991-2001. As against the lowest is depicted in Miraj (.06) and in Walwa (.08) tahsils. Dependency ratio in nearly equal (50%) to work force during 2001 in Kawathe Mahankal, Jat and Shirala tahsils, as they are physio-climatically unfavorable and socio-economically underdeveloped. Khanapur tahsil has high WPR, while Miraj and Walwa tahsils have low WPR in both the censuses. Thus, it is evident from the above discussions that the tahsils of agrarian-rural economy have more WPR than that of the tahsils of industrial-urbanized economy. The reason behind is that the WPR of females is more in rural areas than the urban areas. The females in rural areas, besides attending their household duties also perform one or more economic activities to supplement the family income.

Summary

Among various elements of population composition, economic composition holds a prime place for population geographers. Economic condition, social and political status, availability of economic activities and employment standards are the parameters to be considered for the work participation rates of the region. In 1991 the total labour force in the study area is 44.12% and 47.20% in 2001. Thus, there is an increase of 3.08% persons in a decade. The work participation rates for both the censuses in the study area are higher than the state and national averages and it is due to high rate of female participation and child workers in rural areas of the study area. It also shows low dependency ratio in the study area . The agrarian nature of study area indicates high percentage of population is engaged in agricultural activities. This activity rate of study area is higher in rural areas as compared to urban areas. There is

a striking difference (31.65%) in the activity rates of females in the urban (15.55%) and rural (47.20%) areas.

It is also observed that, work participation rate comparatively fluctuates within the tahsils and study area over the time. Very high work participation rate in 1991 was observed in Jat and Khanapur tahsils, whereas, in 2001 it is found in Khanapur and Palus tahsils. Jat and Palus tahsils are purely rural tahsils, while Khanapur is semi-urbanized tahsil having Vita, the only urban centre. Agriculture is the main economic activity in these three tahsils and hence high work participation rate is observed. The lowest work participation rate is found in Miraj tahsil in both the censuses, because it is not only industrially and economically well developed but also highly urbanized tahsil. Shirala, Jat, Kawathe Mahankal and Atpadi tahsils recorded relatively low working population in secondary and tertiary occupations due to their agrarian economy. On the other hand, those tahsils under urbanization process, and industrially developed have recorded high rate of workers in secondary and tertiary activities, such tahsils are Miraj and Walwa.

The rural-urban differentials of work participation rates of the area under study were also studied. It is found that, rural work participation rate (57.7%) is higher than that of urban work participation rate (51.3%), which differs from tahsil to tahsil. The study area has an agrarian base in rural areas, so majority of females are working as agricultural labourers with their children working in cottage industry and as marginal workers. The study of overall male-female differential in work participation rate reveals that male work participation rate is higher (56.1%) than that of females (37.9%), many causes like prejudices against female mobility, education, low social status of females in family or in society are the responsible factors.

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THE KONKAN GEOGRAPHER
Vol. No.05 Nov. 2013
ISSN 2277 – 4858

Preparation Of Research Project

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Abstract

The research projectis an original essay presenting your ideas in response to information found in library sources. As you gather research material, your ever-increasing knowledge of a topic will allow you to make informed judgments and original interpretations. At each stage of research, you will have a more complete idea of what you have already found and what you are looking for. Midway through the process, the writing tasks of creating a review of the literature and a proposal will help you focus the direction of your research. This chapter addresses both the technical skills of finding and recording information and the intellectual skills of understanding the material, developing original ideas, and making informed judgments. Writing a research project is a process of interaction between the materials you find in primary sources and the ideas you develop yourself. Your ideas lead you to search out additional materials, and these new-found materials lead you to new ideas. Throughout this process, it is you who decides what materials you need, discovers the connections between different pieces of information, evaluates the information, frames the questions you will answer, and comes to original conclusions.

Keywords: Research Material, Judgments,Midway, Intellectual, Conclusion etc.

Introduction

A research project is the culmination and final product of an involved process of research, critical thinking, source evaluation, organization and composition. It is, perhaps, helpful to think of the research paper as a living thing, which grows and changes as the student explores, interprets and evaluates sources related to a specific topic. Primary and secondary sources are the heart of a research paper and provide its nourishment; without the support of and interaction with these sources, the research project would morph into a different genre of writing (e.g., an encyclopedic article). The research project serves not only to further the field in which it is written, but also to provide the student with an exceptional opportunity to increase her knowledge in that field. It is also possible to identify a research project by what it is not.A research

project is not simply an informed summary of a topic by means of primary and secondary sources. It is neither a book report nor an opinion piece nor an expository essay consisting solely of one's interpretation of a text nor an overview of a particular topic. Instead, it is a genre that requires one to spend time investigating and evaluating sources with the intent to offer interpretations of the texts, and not unconscious regurgitations of those sources. The goal of a research project is not to inform the reader what others have to say about a topic, but to draw on what others have to say about a topic and engage the sources in order to thoughtfully offer a unique perspective on the issue at hand.

Important Stages In The Preparation Of Research Project Process

I. Choosing a Topic

While some students come to their research project with a clear research question to address, many others arrive at this point with several ideas, but with no specific research question. In view of the pressure to get started fairly quickly, this can cause anxiety and even panic. It is, however, a common situation to be in. There are several ways forward:

- Talk to others: what topics are other students considering? Does this spark an interest? Don't wait until you have a fully formed research question before discussing your ideas with others, as their comments and questions may help you to refine your focus.
- Look at other writing: set aside some time to spend in the library, skimming through the titles of research papers in your field over the past five years, and reading the abstracts of those you find most interesting.
- Look through the dissertations of previous students in your department: the topics may give you inspiration, and they may have useful suggestions for further research.
- Think about your own interests: which topic have you found most interesting, and is there an element that could be developed into a research project?
- Is there a related topic of interest to you that has not been covered in the syllabus, but would fit with the theory or methodology you have been working with?

II. Developing a Research Question

Once your topic has been accepted by your department, you need to begin the process of refining the topic and turning it into something that is focused enough to guide your project. Try describing it as a research problem that sets out:

- The issue that you are going to be investigating;
- Your argument or thesis (what you want to prove, disprove, or explore); and
- The limits of your research (i.e. what you are not going to be investigating).

It is important that you establish a research problem at, or close to the start of, your project. It is one of the key tools you have, to ensure that your project keeps going in the right direction. Every task you undertake should begin with you checking your research problem and asking "will this help me address this problem?".

You should be willing to revise your research problem as you find out more about your topic. You may, for example, discover that the data you were hoping to analyze is not available, or you may encounter a new piece of information or a new concept while undertaking a literature search, that makes you rethink the basis of your research problem. You should always talk to your supervisor before you make any substantial revision to your plans, and explain why you think you need to make the change.

III. Effective Planning of the Research

a. Writing a research proposal

A research proposal is a more detailed description of the project you are going to undertake. Some departments require you to submit a research proposal as part of the assessment of your dissertation, but it is worth preparing one even if it is not a formal requirement of your course. It should build on the thinking that you have done in defining your research problem; on the discussions that you have had with your supervisor; and on early reading that you have done on the topic. A comprehensive research proposal will make you think through exactly what it is that you are going to do, and will help you when you start to write up the project.

b. Creating a Research Plan

A dissertation is an extended project that asks you to manage your time and undertake a variety of tasks. Some courses schedule the dissertation at the end, while others have it running along concurrently with other modules. Whichever way your course is organized, it is essential that you create a plan that helps you allocate enough time to each task you have to complete.

c. Procrastination

Some people find that they procrastinate more than they would like. This is a common problem, so it is probably best to be well-prepared to identify it and deal with it if it does start to happen.

d. Realistic planning

To improve the prospect of completing on time, and avoiding procrastination, you need to:

- Be realistic about when you can/will start;
- Devote time to planning and revising your plan;
- Try to work out if any of your research will take a set amount of time to complete;
- Allocate appropriate time for any traveling you need to do for your research;

- Include other (non-dissertation related) things that you have to do between now and then;
- Have clear and achievable objectives for each week;
- Focus on one thing at a time;
- Leave time for editing and correcting;
- Reward yourself when you complete objectives that you have timetabled; and
- If you fall behind make sure you spend time reworking your plan.

Your research plan should also include information about what equipment you will need to complete your project, and any travel costs or other expenses that you are likely to incur through the pursuit of your research. You should also think about whether you are dependent on any one else to complete your project, and think about what you are going to do if they are unable to help you.

Once you have created your plan it is a good idea to show it to someone else. Ideally you will be able to show it to a member of academic staff or bring it to the Learning Development, but talking it over with a friend may also help you to spot anything that you have forgotten or anywhere that you have been unrealistic in your planning.

IV. Being Organized and Methodical while Conducting your Research

a. The role of the supervisor

Although a dissertation is an opportunity for you to work independently, you will usually be allocated a member of academic staff as a supervisor. Supervisors are there to help you shape your ideas and give you advice on how to conduct the research for your dissertation. They are not there to teach you the topic you have chosen to investigate: this is your project. They are, however, one of the resources that you can call on during your research.

b. Undertaking a Literature Survey

Regardless of whether you have been given a dissertation topic or you have developed your own ideas, you will need to be able to demonstrate the rationale for your research, and to describe how it fits within the wider research context in your area. To support you in doing this you will need to undertake a literature review, which is a review of material that has already been published, either in hard copy or electronically, that may be relevant for your research project. Key tools that is available to help you include:

c. Collecting data

For most research projects the data collection phase feels like the most important part. However, you should avoid jumping straight into this phase until you have adequately defined your research problem, and the extent and limitations of your research. If you are too hasty you risk collecting data that you will not be able to use.

Consider how you are going to store and retrieve your data. You should set up a system that allows you to:

- Record data accurately as you collect it;
- Retrieve data quickly and efficiently;
- Analyze and compare the data you collect; and
- Create appropriate outputs for your dissertation e.g. Tables and graphs, if appropriate.

d. Pilot studies

A pilot study involves preliminary data collection, using your planned methods, but with a very small sample. It aims to test out your approach, and identify any details that need to be addressed before the main data collection goes ahead. For example, you could get a small group to fill in your questionnaire, perform a single experiment, or analyse a single novel or document.

e. Dealing with problems

Once you start to generate data you may find that the research project is not developing as you had hoped. Do not be upset that you have encountered a problem. Research is, by its nature, unpredictable. Analyse the situation. Think about what the problem is and how it arose. Is it possible that going back a few steps may resolve it? Or is it something more fundamental? If so, estimate how significant the problem is to answering your research question, and try to calculate what it will take to resolve the situation. Changing the title is not normally the answer, although modification of some kind may be useful.

If a problem is intractable you should arrange to meet your supervisor as soon as possible. Give him or her detailed analysis of the problem, and always value their recommendations. The chances are they have been through a similar experience and can give you valuable advice. Never try to ignore a problem, or hope that it will go away. Also don't think that by seeking help you are failing as a researcher.

Finally, it is worth remembering that every problem you encounter, and successfully solve, is potentially useful information in writing up your research. So don't be tempted to skirt around any problems you encountered when you come to write-up. Rather, flag up these problems and show your examiners how you overcame them.

V. Reporting the Research

As you conduct research, you are likely to realize that the topic that you have focused on is more complex than you realized when you first defined your research question. The research is still valid even though you are now aware of the greater size and complexity of the problem. A crucial skill of the researcher is to define clearly the boundaries of their research *and to stick to them*. You may need to refer to wider concerns; to a related field of literature; or to alternative methodology; but you must

not be diverted into spending too much time investigating relevant, related, but distinctly separate fields.

Starting to write up your research can be intimidating, but it is essential that you ensure that you have enough time not only to write up your research, but also to review it critically, then spend time editing and improving it. The following tips should help you to make the transition from research to writing:

- In your research plan you need to specify a time when you are going to stop researching and start writing. You should aim to stick to this plan unless you have a very clear reason why you need to continue your research longer.
- Take a break from your project. When you return, look dispassionately at what you have already achieved and ask yourself the question: 'Do I need to do more research?'
- Speak to your supervisor about your progress. Ask them whether you still need to collect more data.
- Remember that you can not achieve everything in your dissertation. A section where you discuss 'Further Work' at the end of your dissertation will show that you are thinking about the implications your work has for the academic community.

Conclusion

A research project is not simply an informed summary of a topic by means of primary and secondary sources. It is neither a book report nor an opinion piece nor an expository essay consisting solely of one's interpretation of a text nor an overview of a particular topic. Instead, it is a genre that requires one to spend time investigating and evaluating sources with the intent to offer interpretations of the texts, and not unconscious regurgitations of those sources. The goal of a research project is not to inform the reader what others have to say about a topic, but to draw on what others have to say about a topic and engage the sources in order to thoughtfully offer a unique perspective on the issue at hand. This is accomplished through two major types of research project.

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THE KONKAN GEOGRAPHER
Vol. No.05 Nov. 2013
ISSN 2277 – 4858

Changing Pattern of Rural Industrial Development in Solapur District: A Geographical Analysis

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Abstract

The industry denotes a systematic and organized activity in which a new (product) is manufactured on the basis of the transformation of basic resource after processing. Rural industrialization has the potential of relieving the heavy population pressure on land by providing alternative employment opportunities to the surplus man-power in agriculture. Rural industrialization plays a vital role in the overall economic development of a region by contributing to increased industrial production, providing immediate large scale employment, offering a method of incuring a more equitable distribution of regional income, facilitating an effective mobilization of resources of capital and skill and preventing the migration of rural population to urban areas. The main objective of present study is to determine and analyze industrial development in the Solapur district. The paper is based on secondary data source. The data regarding to five indicators of industrial development is collected and used for the period of 1981 to 2001. To determine industrial development Shrivastava. S. L (1983) method i.e. "Proportional Standardized Mean and Composite Index" has been utilized. The study reveals that the low industrial development in Karmala, Sangola and Mangalwedha tahsil is mainly due to low transport and communication development.

Key words: Composite index, Mean, Standard Deviation, Industrial Development

Introduction:

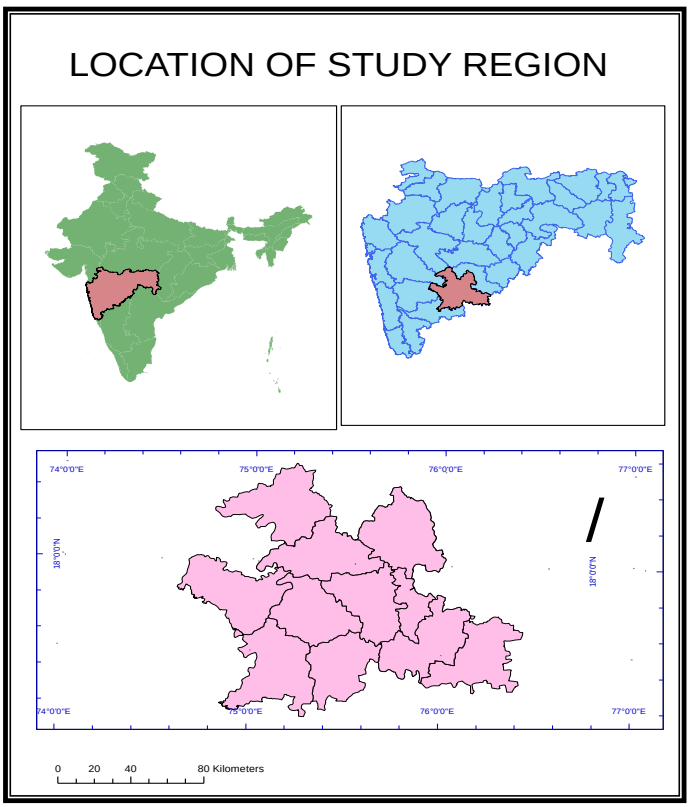
An economy may be conceptualized as a collection of economic, social, institutional, legal and technological arrangements through which individuals in society seek to increase their material and spiritual well-being. The two elementary functions of an economy are consumption and production. Consumption is considered as the prime pump of an economy (Katar Singh, 2009).

Indian economy can comprise two main sectors, namely, rural sector and the non-rural sector. The rural sector is, in turn, composed of two main subsectors, that is, agricultural and

non-agricultural subsector. Rural industralisation plays a vital role in the overall economic development of a region by contributing to increased industrial production, providing immediate large scale employment, offering a method of incuring a more equitable distribution of regional income, facilitating an effective mobilization of resources of capital and skill and preventing the migration of rural population to urban areas. When agriculture sector on the whole is already suffering from surplus a labour force and modern sector has limited absorption capacity, case for development and promotion of labour intensive industries in the rural areas for creating employment opportunities and for generation of additional income needs priority in our development planning efforts (R. K. Srivastava, 1992). Therefore attempt is made here to study Rural industrial development in Solapur District.

Study region:

The Solapur District area under Study lies entirely in the Bhima basin of Krishna river system. The district is bounded by 17^0 10' North to 18^0 32' North latitudes and 74^0 42' East to 76^0 15' East longitudes. The North South stretch of the district is 150 km and east-west extension is 200 km. The adjoining districts are Sangli to its South-West, Satara to its West, Pune to its North-West, Ahmednagar to its North and Osmanabad to its East and Bijapur district in Karnataka to the Sout. The district has a total geographical area of 14878 sq km. It constitutes 20 percent of the total area of Pune division, 5 percent of the state Maharshtra. For administrative purpose, the district is divided into eleven talukas, which constitute 1150 villages and 10 urban areas. These talukas are North Solapur, Barshi, Akkalkot, South Solapur, Mohol, Mangalvedha, Pandharpur, Sangola, Malshiras, Madha and Karmala. The climate of district is hot and dry with 577 MM average annual rainfall and mean monthly maximum temperature ranging in between 32.8^oc and 41.28^oc while mean monthly minimum temperature ranging in between 13.94^oc and 24.2^oc.the district is drained by Bhima River.



Objectives:

The main objective of present study is to determine and analyze industrial development in the Solapur district.

Data Collection and Methodology:

To fulfill above objective the data regarding to five indicators of industrial development i.e Percentage of Non Agriculture Worker, Percentage of Industrial Worker, Small Scale Industries per 10000 rural population, Small scale Industries per 10000 land, Number of Large Scale Industries is collected and used for the period of 1981 to 2001 comes from secondary sources. After the collection data is processed. To determine industrial development **Shrivastava. S. L (1983)** method i.e. "Proportional Standardized Mean and Composite Index" has been utilized. Which is as Following.

$$W = \frac{\text{Mean}}{SD}$$

Where,

W= Weight of one particular indicator

Mean= The average of the series of one particular indicator.

SD = The standard deviation of same series.

$$Ci = \frac{x1w1 + x2\,w2 + x3\,w3 - - - - - -}{w1 + w2 + w3 \;\; - - - - - - - - - -}$$

Where,
CI = Composite Index
X = Particular Indicator
W= Weight of series of one particular Indicator

Depending upon the composite index the indices have also calculated by taking whole region as 100 (for average composite index) by using following formula.

$$\text{Indices} = \frac{\text{Composite Index of Any Unit}x}{\text{Average Composite Index}} \text{ x } 100$$

Then on the basis of these statistical technique results and conclusions are drown.

Industrial Development in1980-81

The following table shows mean and weighted index of all tahsils.

Table – 1: Indicators of Industrial Development in 1980-81

Tahsil	PNAW	PIW	SSIP	SSIA	NOLSI
Akkalkot	14.4	2.09	0.72	0.86	3
Barshi	14.57	2.06	2.99	3.69	2
Karmala	12.99	1.37	0.94	0.88	4
Madha	18.87	1.71	0.74	0.92	5
Mangalw.	21.19	1.3	1.79	1.58	2
Malshiras	21.3	2.57	0.67	1.18	6
Mohol	21.42	2.07	1.95	2.35	20
N. Solap	40.77	2.31	41.5	61.2	19
P.Pur.	15.46	1.29	3.12	4.17	4
S.Solapur	22.57	1.34	2.91	3.68	8
Sangola	20.69	2.21	1.44	1.51	3
TOTAL	19.42	1.88	3.85	4.72	76
Mean	20.38	1.85	5.34	7.456	6.91
SD	7.575	0.46	12	17.87	6.47
Weight	2.691	4	0.44	0.417	1.07
Total weight	8.62				

Source: Compiled by researcher on the basis of Socio-economic review and District Statistical abstract Of Solapur District,1981,2001

Composite index and indices value of each indicator are calculated with the help of table-1 which is given in table -2.The indices value of all tahsil lies in the ranging from below mean to mean plus one standard deviation therefore all the tahsils are grouped on the basis of Mean and Standard Deviation.

Table -2: Composite Index of Industrial Development in 1981.

Tahsil	Composite Index	Indices Value
Akkalkot	5.92	67.99
Barshi	6.09	69.94
Karmala	5.18	59.49
Madha	7.39	84.87
Mangalw.	7.64	87.74
Malshiras	8.68	99.69
Mohol	10.34	118.75
N. Solap	21.26	244.16
P.Pur.	6.28	72.12
S.Solapur	8.99	103.25
Sangola	8.01	91.99
Average Index	8.707	

Source: Complied by researcher on the basis table 6.16.

Tahsils with High Industrial Development:

The tahsils which have above mean plus one standard deviation indices value i.e. > 15.93 is included in this category. High Industrial development is recorded in North Solapur tahsil due to the location of district head quarter within the tahsil, development of transportation and availability of Solapur city as big market leads to increase of number of large and small scale industries in MIDC estate.

Tahsils with Moderate Industrial Development

Tahsils which have composite index in between above mean and mean plus one standard deviation are included in this category. The moderage industrial development is registered in Mohol and South Solapur.

Tahsils with Low Industrial Development:

Tahsils which have below mean indices value i.e. < 100 are included in low development. The low industrial development is found in Akkalkot, Barshi, Karmala, Madha, Mangalwedha, Malsiras, Pandharpur and Sangola tahsil.

Industrial Development in 2000-2001:

The table-3 indicates the indicators of industrial development and their mean, standard deviation and weighted index values. The industrial development in study region is not uniform. The respective weight of all the above indicators are 3.09, 1.90, 0.42, 0.46 and 0.92. Thus it is observed that the highest weight is recorded in Percentage of Non agriculture

Workers (3.09). The lowest weight (0.42) is recorded in Small Scale Industries per 10000 Rural Population. Onthe basis of mean and standard deviation of indices values the tahsils are divided into following three groups.The value to composite index of all tahsil has been given in table -4. The indices have also been calculated by taking Solapur district as 100(for average composite index) and also given in table-4.

Tahsils with High Industrial Development:

Tahsils which have above mean plus one standard deviation composite index i.e. > 165.47 is included in high industrial development. It is found only in North Solapur tahsil, due to the location of district head quarter the establishment of MIDC estate, where small and large scale industries are concentrated therefore high percentage of non agriculture workers, high density of small scale industries and high density of road length is found in North Solapur tahsil.

Table - 3: Indicators of Industrial Development in 2000-01.

Tahsil	PNAW	PIW	SSIP	SSIA	LSIP
Akkalkot	20.99	2.98	5.57	9.06	1.32
Barshi	22.81	3.05	6.57	10.18	0.85
Karmala	17.44	2.6	4.41	5.83	1.9
Madha	26.17	2.6	2.34	4.13	1.86
Mangalwedha.	17.95	2.02	6.31	8.23	1.34
Malshiras	33.41	5.24	3.02	8.08	1.39
Mohol	26.99	2.78	4.9	9.34	7.97
N. Solapur	47.52	8.39	143	186.2	11.2
Pandharpur	26.67	2.03	5.27	12.67	1.29
S.Solapur	26.82	3.21	6.82	12.05	3.79
Sangola	20.98	3.55	4.47	6.84	1.23
TOTAL	287.8	38.4	193	272.6	34.2
Mean	26.16	3.50	17.51	24.78	3.11
SD	**8.48**	**1.84**	**41.62**	**53.59**	**3.38**
Weight	3.09	1.90	0.42	0.46	0.92
Total Weighy	6.78				

Source: Compiled by researcher on the basis of Socio-economic review and District Statistical abstract of Solapur District,1981-2001

Table -4: Composite Index of Industrial Development in 2001.

Tahsil	Composite Index	Indices Value
Akkalkot	0.72	71.81
Barshi	0.78	77.79
Karmala	0.6	59.84
Madha	0.83	82.78
Mangalwedha.	0.61	60.84
Malshiras	1.1	109.70
Mohol	0.94	93.75
N. Solapur	2.93	292.21
Pandharpur	0.88	87.76
S.Solapur	0.93	92.75
Sangola	0.71	70.81
Average Indices	1.0025	99.98
A.Iindex	1.0027	

Source: Complied by researcher on the basis of Socio-economic review and district statistical abstract and ofDistrict Industrial development Department

Tahsils with Moderate Industrial Development:

The moderate industrial development lies in the range of mean to mean plus one standard deviation of indices value i.e. 100 to 165.47 and it is observed in Malshiras tahsil. Due to high development of surface irrigation leads to high concentration of sugarcane industries.

Tahsils with Low Industrial Development:

Tahsils which have below mean indices value i.e. 100 are included in low industrial development category. Low industrial development is found in Akkalkot, Barshi, Karmala, Madha, Mangalwedh, Mohol, Pandharpur, Sangola and South Solapur tahsils. It is low in Mangalwedha, Sangola and South Solapur tahsil due to lower development of infrastructure.

Change in Overall Industrial Development in Study Region:

Shift of industrial development from low to high is found in Malshiras, due to the development of surface irrigation by the Nira Bhatgar and Ujani cannel increase surface irrigation which resulted into high growth of cash crop cultivation. Therefore, number of large and small scale industries are concentrated. While high to low shift is found in Mohol

tahsil. Where there are no change in North Solapur, Akkalkot, Barshi, Karmala, Madha, Mangalwedha, Pandharpur, Sangola and South Solapur tahsil.

Concluding Remarks:

The foregoing analysis reveals that the high industrial development in North Solapur is the result of the location of district head quarterwithin the tahsil and development of MIDC area, and in Malshiras and Mohol tahsil due to the development of surface irrigation leads to increase in area under sugarcane and other cash crop which leads to development of agrobase industriesl. The low industrial development in Karmala, Sangola and Mangalwedha tahsil is mainly due to low transport and communication development.

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