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CONTENTS

Editorial	v
In Pursuit of History: Discussion on the Collection and Interpretation of Data <i>DAVID R SYIEMLEIH*</i>	1
Female Employment Trends in India: A Disaggregated Analysis <i>ANAND SHARMA & SANJOY SAHA</i>	....	....	17
Inter-State Variations in Rural Healthcare Infrastructure in North-East India <i>LASARA M. LYGDOH</i>	....	....	31
Agricultural Productivity and Productivity Regions in West Bengal <i>NASIM AKTAR</i>	....	....	49
Declining Sex Ratio in Sikkim: A Spatial Analysis <i>JAYASHREE DEY</i>	....	....	63
The Gandhian Movement and Railway Workers in Bihar: A Case Study of the Workers of Jamalpur Railway Workshop (1919-1930) <i>PUSHPA KUMARI</i>	....	....	75
Experiments with Love: Janice Pariat's Boats on Land <i>HARPREET KAUR VOHRA</i>	....	....	87
Book Reviews	....	....	95
Guidelines for Authors	....	....	101

Editorial

In this issue of The NEHU Journal, we have a special article from Prof. David R. Syiemlieh titled, 'In Pursuit of History: Discussion on the Collection and Interpretation of Data'. In the article the author, an eminent historian of Church History, presently a Member of Union Public Service Commission, (UPSC) New Delhi, shares with us his experiences in empirical research on the history of Church in Khasi Hills, Meghalaya. His efforts and experiences as a historian would be a source of inspiration for budding historians.

In addition to this commissioned article the present issue includes six articles and two book reviews. The issue includes well-researched papers on Female Employment in India, Rural Health Infrastructure in North-East India, Agricultural Productivity in West Bengal and Declining Sex-Ratio in Sikkim. In addition to these vital economic issues, the volume also includes two more articles, one reflecting on Railway Workers' Strike in Bihar and the other on Janice Pariat's story, "Boats on Land". The Book Review section includes review of two books: Vimal Kant's *Caste Consciousness & Power Politics in Bihar (1937-1967)*, and Rekha Sarin and Ranjan Kapoor's *Chai: The Experience of Indian Tea*.

Relying on NSSO data, Anand Sharma and Sanjoy Saha in their article, 'Female Employment Trends in India: A Disaggregated Analysis' attempts to give a comprehensive picture of female employment in the country. Their study shows that female participation in work force is growing in rural areas, compared to the urban areas, but unfortunately that does not lead to the empowerment of the rural women.

Lasara M. Lyngdoh in his article, 'Inter-State Variations in Rural Healthcare Infrastructure in North-East India' attempts to study whether the manpower and facilities for rural health mission are adequate to meet the requirements of rural population in the northeastern states. The author points out difficulties in evolving a satisfactory index due to non-availability of data on health in the region. He feels that the health facilities available in the northeast are far from satisfactory, and calls for the government intervention to restructure the health system.

Nasim Aktar in his article, 'Agricultural Productivity and Productivity Regions in West Bengal' attempts to examine the pattern of agricultural productivity in different districts of the state West Bengal which exhibits wide variations in agro-climatic specificities. The author identifies high, medium and low productivity regions within the state and accounts for the social, economic and technological factors that account for differential productivity. In the conclusion, he proposes different steps that need to be taken to protect the farmers, whom he identifies as mostly small and marginal farmers.

In her article, 'Declining Sex Ratio in Sikkim: A Spatial Analysis', Jayashree Dey tries to probe the reasons why Sex Ratio in Sikkim is declining, although the usual reasons attributed to the disparities in the sex ratio in other parts of the country are absent in Sikkim. Based on National Family Health Survey (NFHS 3), the author arrives at the conclusion that factors like early marriage, short spacing of birth interval, high maternal mortality rates, preference for son, lack of attention towards maternal care, health hazards and migration of men folk in search of jobs to other parts of the country are responsible for declining sex ratio in Sikkim.

In her article, 'The Gandhian Movement and Railway Workers in Bihar: A Case Study of the Workers of Jamalpur Railway Workshop (1919-30)', Pushpa Kumari narrates how in absentia, Mahatma Gandhi acted as a cementing force to inspire the workers of Jamalpur Railway Workshop to fight for redress of their grievances and at the same time to respond to the call of the nation to raise voice against colonialism as citizens of India. The author discusses three phases of their movement, the first one coinciding with the entry of Mahatma Gandhi, the next one during the Non-Cooperation Movement and the third one during the Civil Disobedience movement. At no point of time Gandhi visited the workers. But the workers took inspiration from Gandhi to lead their own struggles against exploitation, racialism and colonial domination, at times following Gandhian tactics and at times even indulging in violence.

In the west, there is considerable literature valorizing lesbian relationships. In India it is still a taboo; not many Indian writers have written about it. Harpreet Kaur Vohra in her paper titled, “Experiments with Love: Janice Pariat’s Boats on Land” reviews the Janice Pariat’s story of lesbian relationship between two girls with different social background and experience. How the acquaintance of two girls develops into an emotional relationship and how that relationship changes the personalities and perceptions of both is the focus of the paper.

From next issue onwards, with a view to encourage and showcase the works of young scholars, The NEHU Journal will be publishing short notes on research and findings of the doctoral scholars. We hope the initiative will get positive response.

H. Srikanth
Editor

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In Pursuit of History: Discussion on the Collection and Interpretation of Data

DAVID R SYIEMLIEH*

Introduction

Over the past thirty five years and more I have taught, which I enjoyed, researched and wrote out research in the form of articles and books. Historians draw their sources from a variety of material both published and unpublished, including documents of reports both official and private, surveys and reports, again both official and private, chronicles and histories, family and personal sources, polemical documents and media communication, archaeological sources, literary and artistic sources as also oral sources, particularly useful to reconstruct the histories of pre-literate societies. For the historian to use such material they should be made available in libraries and archives both public and private. The historian should search for material from which he intends to reconstruct the past where he finds material not easily available in repositories. Often the researcher will have to depend on unconventional sources such as interviews and field work - these will substantially add to the scope of the material to be used but would require being cross-checked with other sources. In this sense therefore, historians also have an added task of playing a role in the preservation of manuscripts and other forms of recording the past.

Among the sources historians of North East India use for reconstructing our understanding of the past are archival records. The British colonial rulers had a sense of history and its uses; as biased as it was, and for this they maintained their official records in archives. The official records and papers first in handwritten form and then in print, were periodically deposited in archives attached to the offices of Collectors/Deputy Commissioners of the districts, the province levels and decisions of a higher level at the National Archives of India and the India Office Library and Records London. The

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same records offices and archives and other specialized repositories today continue to house official papers under the Indian administration. The collections were generally arranged in three categories, A, B and C. 'A' category was maintained in full form; 'B' files were retained with links to 'A' while the 'C' category were noted but not maintained.

Three generations of researchers in the region have utilized and benefited from study in official archives for their research. Several have used only the records in the region such as are available in the State Archives and record offices of the Deputy Commissioners. It was necessary for several scholars to then follow up the records and official decisions taken from this to the next level. The National Archives of India and the Jawaharlal Nehru Museum and Library, Delhi have provided historical material to countless scholars of the region. Some then have been able to go one step further to investigate and collect material at the India Office Library and Records, now the India and Oriental Collection at the British Library; manuscripts at the British Museum, both at London, and the Public Records Office at Kew, Richmond in the UK. Scholars have also accessed many other repositories abroad. The more extensive the material collection and carefully used, the more useful and significant have been this genre of research. I will later in this presentation relate my experiences of researching in these archives.

These archives were intended to be official and public repositories for official purposes and research. Today historians and social scientists are making use of the archives for generating material over a wide range of interests relevant to their research. It has not only been histories which enquire the colonial connection and have had use of archives. Registers, for instance of births and marriages and deaths in British India have cleared up many a concern for search through genealogies and the like. The Imperial War Museum also at London has a large collection of material relating to the Second World War with record, photographs, memoirs on the British, American and Commonwealth soldiers who were for periods of time in the Naga Hills and Manipur theatres of war and idea and setting up of the Lushai Scouts. The Cambridge South Asia Archives in Cambridge University has a very specialized collection of records and memorabilia on India. Researchers working on themes of the last years of British rule in India will find this collection of immense use as I did when my research scholar Wati Imchen and I researched in this Archive in the winter of 2007. Much of the material collected has been used in the publication of *On the Edge of Empire*. Imdad Hussain was able to retrieve material for the

account, photographs and sketches from these repositories for Residency to Raj Bhavan . Researching in Nottingham University Library, Department of Manuscripts and Special Collections many years earlier and shifting through the Portland Collection of Lord William Bentinck's collection was particularly rewarding for me in the reconstruction of the early phase of British rule over the Khasi-Jaintia and their interest in Sohra-Cherrapunji. I followed the lead from N. K. Baruah's biography of David Scott.

Such archives can hold both published and unpublished materials. The materials can be in any format. Some examples are manuscripts, letters, photographs, moving image and sound materials, I recently listened to very rare recordings of memoirs of tea planters of Assam on 'Koi Hai' , a portal supported by former Assam tea planters and was able to get a rare and unused photograph of Sir Robert N. Reid, Governor of Assam at Haflong, 1942. Materials in archives are often unique, specialized, or rare objects, meaning very few of them exist in the world, or they are the only ones of their kind. Some other examples of archival materials include letters written by Rabindranath Tagore with Visva Bharati University; Gopinath Bordoloi papers at the Nehru Memorial Library and Museum; East India Company records at numerous archives and principally at the West Bengal Archives; the National Archives of India and the British Library.

Significance of History

Through sources such as those mentioned, historians construct and reconstruct histories and often ponder over the presentation. It is not often realized that the thought process which eventually becomes history is first organized and enacted in the historian's mind before it is placed in words. Significant threads from the past are taken by historians and woven into a work of history. This needs some explanation-much has occurred in the past but to write it all down would be impossible because no historian can cover and thus re-cover the totality of past events because their content is virtually limitless. Historians cannot recount more than a fraction of what has occurred and no historian's account ever corresponds precisely with the past- the sheer bulk of the past precludes total history. It is only the significant that the historian uses- which means that where two or more historians write about the same past there will be two or more histories. It is this use of and what constitutes the significant to a historian that gives the subject its variety and abuse.

At the core of the historian's activities is not only to establish what happened in the past, but to communicate his research. Historians are expected not to have any bias in their intent and presentation. This is more easily said than done. The historian is required to be both objective in the use and interpretation of his sources so that he does not get drawn into a subjective involvement with his material and interpretation.

Discovering Tirot Sing's date of death

I will relate some of my personal experience. I was fortunate to have located the date of death of Tirot Sing, the Syiem of Nongkhlaw in the then India Office Library and Records, London. Early in 1988 while researching in the IOLR and while waiting for some material that was taking longer than usual to reach my table, I checked a catalogue on Bengal, used my common sense to check it, found an entry on Tirot Sing, requisitioned the bound volume of the Bengal Judicial Proceedings, 1835 which largely comprised of letters and had before me that all important letter which recorded the date and time of the death of the Khasi Syiem of Nongkhlaw. Returning home, I jotted down a short note on the discovery wherein I also showed that the British treated the Syiem as a ruler of a native Indian state under house arrest. He had servants, moved around Dacca in a palanquin, and was provided a fine house and a comfortable allowance to live on. After the euphoria of the find, which the Government of Meghalaya till date has not formally acknowledged, 17 July every year is commemorated as Tirot Sing day.

Politicians, traditional leaders and others called upon to make speeches on this holiday, however have not accepted the more recent findings on the last day of the Syiem. Speeches on this one day continue to tell of the "freedom fighter's" hardship in prison, which has no historical base, and refer to his last words, which come from a drama on the man and his times and therefore not real words, though they may have represented the feeling of the man. Khasis continue to want to believe in the wretched treatment of Syiem Tirot Sing. They refuse to believe the research which has been published and for which there is documentary proof. A more recent publication has an update on the last days of the Syiem.

College and university archives are repositories that preserve materials relating to a specific academic institution. Such archives may also contain a "special collections" division. The School of Oriental and African

Studies has the papers of Christopher von Haimendorf, the anthropologist who studied the Naga and Arunachal tribes, and J. P Mills I.C.S., who served for many years in the Naga Hills and later was Secretary to the Governor of Assam. S.O.A.S. holds the largest collection of Christian missionary archives in the UK; as well as personal papers of many individual missionaries. These collections span the 18th to 20th centuries and include a wealth of primary source material, such as correspondence, reports, minutes, journals, photographs and films. At SOAS I have read the papers of Thomas Jones' application to become a London Missionary Society missionary and some details of Alexander Lish, Thomas Jones' precursor in the Khasi Hills. College and university archives exist first to serve their parent institutions and alumni, and then to serve the public. The Notre Dame University, Indiana, USA, has a special collection on the Bengal Mission in East Bengal including archival material on Mizoram and Tripura missions.

Digital Collections

Many archives digitize materials (photographs, meeting minutes, reports, letters, audiovisual recordings, etc.) from their collections and make them available on their websites. The NEHU Library has digitised the NEHU Academic Council and Executive Council Minutes and has uploaded a sizeable list of publications of its faculty in its digital repository DSpace@NEHU:Home. Digitization enables the researcher to view materials without visiting the archives in person. Some digital content is full-text searchable, allowing you to enter words pertinent to your research (such as names or terms) into a search box and then search the document to see whether instances of those words appear. Very interesting research material is placed on the portal 'Brahmaputra Studies Database', for example Alexander Lish's 'A Brief Account of the Khasees', Calcutta Christian Observer, 1838; and the multi-volume Assam District Gazeteers, and much more. Scholars in pursuit of history should check repository websites, catalogues, databases, and aids to see whether links to digital collections exist. However, be aware that digital collections often reflect just a fraction of the total holdings of a repository. There may be non-digitized materials at the same institution that are also pertinent to research. Researchers are advised to go through holdings listings carefully and ask the archival staff for assistance in accessing non-digitized content.

Archives set restrictions for use of their collections. While it is in order to put restrictions to the use of some collections as does SOAS and CSAA, for reasons that the donors apply, the National Archives of India restriction for use of official material on the North East after 1913 had me worried. The recourse then was to use the material in the India Office and Library Records, London which most graciously provided the required sources without any fuss. Restrictions remain on the use of maps in archives and libraries maintained by the Government of India. This is a serious problem scholar's face when there are no other options for the use of cartographic material. Another problem faced by scholars researching in archives such of the National Archives of India, the West Bengal Archives, and the Assam State Archives is that files listed in the catalogues are not made available for study as these are often not available or located. The Government of Meghalaya Records has a small collection and yet has made little effort to catalogue the records of the Deputy Commissioner, East Khasi Hills or the Deputy Commissioner, East Garo Hills, though the latter has made an attempt to preserve the diaries of the first Deputy Commissioner. It is a matter of concern that little is being done to catalogue, preserve and provide archival data. A seminar should be organized to sensitize Government and other organizations to maintain repositories and provide facilities for study and research.

Church History

My research interest later shifted over the years to church history and Christianity in North East India. This was first encouraged by my colleague Prof. Milton S Sangma who did seminal work on the Baptist missions in the region. He taught a course Christianity in North East India and when he shifted to Tura as PVC, the course would have been without a teacher. I then moved into this area study first by reading the extant literature on the subject to service the course and then moved into research on the subject.

Another of my findings relates to locating archival material and the grave of Thomas Jones, the first Welsh Presbyterian missionary to the Khasis. Thomas Jones died in Calcutta on 16 September 1849. He was buried in the Scottish Cemetery, Karaya Road. This find then directed me on other interesting facets of the man including name and date of his second marriage, and the education of his grandchildren at Dr. Graham's Homes, which for me was interesting as the Homes is my alma mater. This genealogical note has been used in a number of publications the latest being

the biography on Thomas Jones, which was released on 16 February 2013.

As communication improved and imperialism gave the call to venture into new lands, a tremendous missionary spirit pervaded over much of Europe and the North American continent. Numerous missionary societies and organizations were started to take the challenge of spreading the Gospel to peoples hitherto unaffected by the Christian faith. Much of the material which may be used to construct the history of the Missions in India and North East India in particular are available in libraries and archives in India. Records of the American Baptist mission may be read at the United Theological College, Bangalore; the Eastern Theological College, Jorhat and the Council for Baptist Churches, Guwahati. Materials on the Catholic missions are available at the Archbishop's House in Shillong, and in smaller collection in the different dioceses and parishes. The Welsh Presbyterian mission records are to be found in the Synod offices at Shillong, Aizawl and in collections at the John Roberts Theological College, Mawklot and the Aizawl Theological College, Durtlang. Depending on the research to be undertaken, scholars will find ample collections within the region to research on the missions. Large holdings are in archives and universities abroad, in England, USA, France, Germany, Australia and New Zealand from where missionaries served the missions in the North East, in libraries. I have benefited reading the material in Le Mans and Paris in France on the early history of the Holy Cross Congregation in Bengal. Much more historical data is in the archives of the American and French Canadian provinces of the Congregation. These are located in the Provincial Archives Center and the Library at Notre Dame University, USA and the Provincial Archives at Montreal. The Congregation's Generalate Administration Records at Rome and the records of the present Vice Province at Dhaka also have much material on the Indian mission. Very useful for researchers has been the records at the Provincial House at Bangalore; parish records, particularly at Haflong, Badarpur, the Bishop's House Records at Silchar; the records at Agartala and files and notes from the many parishes and schools run by the Congregation.

As the missionaries came from many nationalities their records are in several languages. Language skills are required to read through records in Welsh, French, German and Italian as the case may be. The faculty of Sacred Heart and Theological College in Shillong, as have others, have skillfully used material in foreign languages when writing their dissertations.

Mission records may not relate only to the missions. For instance the language and script controversy between the colonial administration in Bengal and Assam and the American Baptist missionaries was a long drawn affair covering many years of concern for the missionaries who advocated the use of Assamese as the official language. The journal of the ABM, the Orunodoi apart from the encyclopedic information it provided the first readers of printed Assamese literature, has a wealth of information on the issue of script and language.

Back to the Holy Cross

After its foundation in Le Mans, France the Holy Cross Congregation ventured into Canada and the United States of America where the base was laid for what would become the largest activity of the Congregation. The same driving spirit that went to America drew the attention of the founder, Fr Moreau and his successors to send missionaries to Bengal in 1853. In time that Bengal mission was to grow into two Holy Cross missions in erstwhile East Pakistan, now Bangladesh and India. The Bangladesh church has much to be grateful to the sacrifice and dedication of Holy Cross religious in the continued growth of the Church under somewhat trying circumstances. In like manner the Congregation has contributed to the growth of the Church in some states of North East India and in the South where formation of priests has been the attention of the Congregation for many years and a more socially oriented mission in recent times. This somewhat brief review of the heritage of the Holy Cross Congregation enables us to appreciate that its concerns are at the same time global, national, regional and local.

I will now review the nature and extent of information relating to the Holy Cross missions in India read by me in connection with my research on *They Dared to Hope*. The research covered a number of winter months. The first round of research took me to Dacca and Chittagong, Bangladesh. The Provincial House, Dhaka has a reasonable well arranged and catalogued records office from where I was able to collect some material in connection with the American Holy Cross work in Tripura. It would interest some that this records room has a whole file on Brookdene, Shillong. I regret not having gone through the record of the Diocese of Dacca as there is certain to be material therein on the Holy Cross work in Tripura. Chittagong did not have much archival material but what got me started into the history was the information I first read there from the pages of *The Bengalese*

and the Orient, the journals of the American and Canadian Holy Cross provinces respectively. I would two years later browse through the copies of the journals in the Holy Cross Mission Office at Notre Dame.

The next winter saw me travelling through Tripura and South Assam, visiting Holy Cross missions. I had not expected that there would be much in the nature of historical material to be found in these missions. To my surprise the chronicles each mission have maintained were to be of invaluable significance and the letters, reports and correspondence read during the study enabled me to have a picture of the very trying yet fulfilling experience many of the expatriate missionaries experienced in the beginnings and growth of the Tripura mission, which at a point of time the Congregation was thinking of giving up! Badarpur was sheer delight. In the priest's residence is to be read the register of baptisms and marriages going back to 1860, with records of the visits made by early French and Canadian missionaries and the Bishops of Dacca to Badarpur, a Firingi village as its inhabitants were of Portuguese descent and Cherrapunji, Shillong and Gauhati. I was then Bishop Denzil's guest for a week. The records now housed in the Bishop's House, Silchar is a treasure trove of information on the Haflong Prefecture, which was a Holy Cross mandate working in Tripura, the then Lushai Hills, Cachar and the North Cachar Hills. Here the material has not been properly catalogued other than placed in files, which have no sequence and little connection with other files. I was fortunate then to have researched in the Haflong Parish records. Though there is not much in the nature of an archive at this beautiful hill station, the chronicle of the mission, "Prefecture of Haflong" in the neat pen of Monsignor George Breen, I believe is among the most valuable material one can find on the early work of the Congregation in the region.

The third winter of research was spent abroad, first in Montreal where I spent three weeks after which I made my connection with Notre Dame University. I had decided to first research in the archives of the Canadian Brothers and the Priests Provincial Administration as by then I had learned that there would be more material in Montreal than at Notre Dame. The reason was historical. In 1927 the Holy Cross mission in Bengal was divided between the Canadians who took charge of Chittagong and the Americans with whom the charge of Dacca remained. It was the Canadian presence in the missions which were to become part of independent India that later encouraged the Canadian province to sponsor the erection of the Indian Province of Priests and the continued connection between the Brothers

Province in Canada and their Indian confreres. The Brothers archives was well organised and in the care of an enthusiastic archivist who provided whatever I believed could be useful in the book. The priests' archive is professionally managed. It is located in the basement of the old-age home of the Canadian priests. The problem of language in reading the records was overcome with the selection of records for photocopy by the archivist Fr. Maurice Dube. Among the many useful material located in this repository were the memoirs of Canadian missionaries who first visited the Lushai Hills in 1925 and 1935. The material collected from Montreal was gladly translated for me by expatriate priests and brothers.

The Provincial Archives Center, Notre Dame, is another professionally managed archive. It was able to retrieve minutes of General and Provincial Chapter, Circular Letters, letters on the Tripura connection and a complete set of The Bengalese. A longer stay in Notre Dame University as a Fulbright Scholar in 1999-2000, enabled me to make a more detailed study of records on deposit in this archive. The results of this research have been published.

The Provincial House of the Priests at Bangalore has a small collection of historical material, neatly arranged and easily located. Very interesting and useful for writing the history of the foundation of the Holy Cross in the South are the first four references mentioned in the bibliography of *They Dared to Hope*. Typed in the meticulous hand of Fr. Alfred McClure these again should be preserved for their significance in summarising the early endeavours in Yercaud and Salem in South India. If the Holy Cross is to seriously think about its history the records of the Provincial House will have to be updated and expanded. It will require expertise, funds and space. The full utility of such an archive will be appreciated when records are asked for and when other studies of the Congregation will be attempted in course of time.

Finally, reference need be made of the Generalate Administration Records at Rome. Between visits to historical sites, museums and the Vatican I read the material on deposit in this archive. As this is the Generalate Records for the entire Holy Cross Congregation the material on deposit here cover a long span in time and are in many languages. The archive has an impressive collection on India, including the North East.

Copyright

At every stage of research and data collection I was aware of copyright guidelines. Copyright generally protects authors of original works in any form, including literary, dramatic, pictorial, musical, etc. The copyright holder has the right to control the use, reproduction, and distribution of those works, as well as the ability to benefit from works monetarily and otherwise. Archives must abide by these laws, which can be complex. In other words even if the archives physically owns a particular document, the copyright of the document and stipulations on how it can be used may be managed by another individual or institution. For example I had read the papers of Robert Lindsay, Superintendent of Sylhet in the 1780s when on one of my winter visits to Edinburgh. I had to take permission from the Earl of Balcarres, Scotland to reprint a section of *Lives of the Lindsays, Anecdotes of an Indian Life* (NEHU Publications, 1997), as his family continues to hold the copyright of the material on deposit in the National Library of Scotland, Edinburgh. While amendments to copyright law have been made to help archives and libraries better serve researchers, limitations still exist on what materials repositories can provide. Archives may require donors to give both property and copyright to the archives upon donation. However, donors can only give an archives copyright to materials that they created; so many documents in collections remain under original copyright. It is the responsibility of researchers to find the copyright holder in order to publish or cite from the materials they research.

Some comments in conclusion

I have rambled in this essay to say something of how I started out in research, the areas of study that drew me to research, the use of archives and their collection for scholars working on modern India and Christianity with some personal anecdotes. I regret not taking notes from an article of Ma Token Rymbai. Somewhere he had mentioned of a 'Kong Kuttel', the wife of Thomas Jones. He had no records to show, no book to go by. He must have heard the story of the Welsh missionary and mentally noted the name of the missionary's second wife. How close this name that came down through two to three generations was to the name of Emma Cattell.

Much of the material used for writing the history/biography of Tirot Sing are records available in archives located in Shillong, Guwahati,

Calcutta, Delhi and London. The several biographies on the man have also brought up oral tradition from which writers have drawn interesting anecdotes. It has been established that Tirof Sing died in Dacca in 17 July 1835 of unknown circumstances. There is a tradition that he passed away after a stomach ailment. That such a young man should have died so early in life is something to ponder about and for which no answers appear to be forthcoming. There is a tradition that the Syiem was visited by his clansmen and his son. Was this son from a Khasi women of the daughter of the Nawab of Dacca another tradition makes mention? These are questions that will require study before tradition becomes historical. One other 'source' should be taken up for study. There is a belief that the last words of the Khasi Syiem was "It is better to die in prison than live as a vassal". The line referred to comes from U Tirof Singh, the Khasi drama in English of Victor Bareh. Published in 1963, the line in the drama has been quoted in other genre including, movies, dramas, biographies and other literature on the man. The words are etched in stone and in the thought processes of Khasis. Victor Bareh could have taken the lines from ancient Indian history and placed them in the context of Tirof Sing's last days. The concern of some historians is that this line from a dramatist's imagination has become 'the' last lines. Tirof Sing surely would have wanted to return to his hills, but knowing full well the nature of his house imprisonment, he was not in a position to return home. Did he have servants or any other Khasi to have heard these words? There are references that he had two servants. Could these have passed down these words? Most unlikely! I am convinced these are the words of Victor Bareh. The importance given to the last words is the interest generated by the Khasis on the man and all the reverence given to him. As a historian I am concerned that the line has become part of history. It features in history texts and historical literature. However there has been no critical thinking on the processes by which the line was first used and now become part of history texts.

I find another oral tradition requires to be critiqued. There is a tradition that David Scott, Agent to the Governor-General and resident at Nongkhlaw was informed by the mother of Tirof Sing of the impending danger to his life. It does not go well for the community to believe that the Syiem's mother should have given this information and thus Scott was saved, not so three other British officers who were killed in Nongkhlaw in early April 1829. Perhaps some thought could be applied here to see the implications this tradition has on the Khasis. The tradition goes on to say that while on

the road from Nongkhlaw to Sohra Scott threw coins to slow the persuaders if any. Scott could have been on the road some days before the Nongkhlaw massacre. He has traversed this road often and there just could have been no indication to him of the impending danger. Yet stories are made of the coins and that the Khasis while picking up the coins failed to apprehend Scott. This tradition too requires to be critiqued.

There appears to be some contradiction between what we know of the past and what is being brought out today. Good history should have a judicious use of archival records and oral tradition. While archival records can easily be interpreted and generally are reliable, the over-dependence on oral traditions in writing the past could be misused by those who have too close a relationship between the actors of the past and their own lives.

Notes

- ¹ Read Sharma's critique, 1998, pp. 22-44.
- ² Syiemlieh, 2014.
- ³ Hussain, 2005.
- ⁴ Barooah, 1970.
- ⁵ <http://www.koi-hai.com/Default.aspx?site=Koi+Hai>
- ⁶ Syiemlieh, 1987.
- ⁷ Syiemlieh, 2014, pp. 31-42.
- ⁸ Fürer-Haimendorf Archive Digitisation Project, SOAS, University of London.
- ⁹ J. P. Mills Photograph Collection, SOAS Digital Library, University of London.
- ¹⁰ Syiemlieh, 2005.
- ¹¹ <http://brahmaputra.vjf.cnrs.fr/bdd/>
- ¹² Four of Thomas Jones' grandchildren were admitted into Dr Graham's Homes, Kalimpong in 1900.
- ¹³ May, 2012.
- ¹⁴ Andrew J. May, has used Welsh records extensively for *Welsh Missionaries and British Imperialism: The Empire of Clouds in Northeast India*. I have used material in French for writing *They Dared to Hope: The Congregation of Holy Cross in India, Fathers of the Holy Cross, Bangalore, 1998*. Mathew Muttumana has drawn from German, Italian and English sources for *Christianity in Assam and Interfaith Dialogue*.
- ¹⁵ Kottuppallil, 1988.

¹⁶ Downs, 1992.

¹⁷ Syiemlieh, 1998.

¹⁸ My other writings on the theme are given in References.

References

- Barooah, N. K. 1970. David Scott in North East India. Munshiram Manoharlal, New Delhi.
- Downs, F. S. 1992. History of Christianity in India, Church History Association of India, Bangalore.
- Hussain, Imdad. 2005. Residency to Raj Bhavan. Regency Publications, New Delhi.
- Kottuppallil, George. 1988. History of Catholic Missions in Central Bengal 1855-1886. Vendrame Institute, Shillong, 1988.
- May, Andrew J. 2012. Welsh Missionaries and British Imperialism: The Empire of Clouds in Northeast India. Manchester University Press.
- Muttumana, Mathew. 1984. Christianity in Assam and Interfaith Dialogue. Ishvani Kendra, Indore.
- Sharma, Manorama. 1998. Official Records and their bias: The Problems of Writing History, History and History Writing in North East India. Regency Publications, New Delhi: 24-33.
- Syiemlieh, David R. 1987. 'New Light on Tirot Singh: His Last Days and Demise', The NEHU Journal of Social Sciences and Humanities, 5(4), October-December.
- Syiemlieh, David R. 1994. 'Mariamnagar: An Ancient Christian Settlement in Tripura', Indian Church History Review. June.
- Syiemlieh, David R. 1995a. "The Holy Cross Mission in India with Special Reference to North East India", Indian Journal of American Studies, Vol. 25, No. 1, Winter.
- Syiemlieh, David R. 1995b. Notes from Catholic Missionary Letters: Lushai Hills 1935, in Proceedings of the North East India History Association, Sixteenth Session, Silchar.
- Syiemlieh, David R. 1997a. 'Mariamnagar: Cultural Integration: Social Seclusion', in Proceedings of the North East India History Association, Eighteenth Session, Agartala.
- Syiemlieh, David R. 1997b. 'The Haflong Prefecture 1952-1969', The North Eastern Hill University Journal of Social Sciences, New Series, 13.

- Syiemlieh, David R. 1998a. 'Portuguese Settlements in North East India', in Francis Fernandez and Jose Varickasseril (eds), *Mission A Service of Love: Essays in Honour of George Kottuppallil*, SDB, Shillong.
- Syiemlieh, David R. 1998b. *They Dared to Hope: The Congregation of Holy Cross in India. Fathers of the Holy Cross*, Bangalore.
- Syiemlieh, David R. 2000. 'The American Baptist Medical Mission in North East India', in *Proceedings of the North East India History Association, Twentieth Session*, Imphal.
- Syiemlieh, David R. 2003a. 'Catholic Missions Among the Garos of Mymensing: Some Reflections of its Early History 1909-1942', in Mignonette Momin (ed.), *Readings in the History and Culture of the Garos: Essays in Honour of Milton S. Sangma*, Regency Publications, New Delhi.
- Syiemlieh, David R. 2003b. 'Historical Survey of Studies on the Holy Cross Mission in North East India', in Priyam Goswami (ed.), *Insight: a Collection of Articles*, Department of History, Gauhati University, Guwahati.
- Syiemlieh, David R. 2005. 'Thomas Jones' Application and Affirmation to become a Missionary to the Khasis.' In *Proceedings of the North East India History Association, Jorhat Session*.
- Syiemlieh, David R. 2006. 'Christianity in Tripura: A Brief History', in David R. Syiemlieh (ed.), *Diocese of Agartala: Ten Years and Onwards*, Bishop's House, Agartala.
- Syiemlieh, David R. 2007. *Disappeared and Integrated: The Indo Portuguese in North East India*. Indian Council of Historical Research, North –Eastern Regional Centre, Guwahati.
- Syiemlieh, David R. 2014a. 'Call of Freedom from the Hills: Tirot Sing and his Significance in the Freedom Struggle', in Sanjoy Hazarika (ed.), *Little Known Fighters Against the Raj: Figures from Meghalaya*, Centre for North East Studies and Policy Research, Jamia Millia Islamia, New Delhi: 31-42.
- Syiemlieh, David R. 2014b. *On the Edge of Empire: Four British Plans for North East India 1941-1947*. Sage India, New Delhi, 2014.

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Female Employment Trends in India: A Disaggregated Analysis

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Abstract

Using the NSSO data, the present study tries to reveal an overall picture of female employment in India—type of employment, wage differentials, work participation, employment potentiality. It looks at rural – urban differences and inter-state disparities. The study focusing basically on disadvantaged women makes appropriate recommendations for improving the employment potentialities of women in India.

Keywords: Female Employment, Work Force Participation, Wage Differential

Introduction

A country's economic development crucially depends upon the participation rates of its women as they constitute around 50 percent of its human resources (NIPCCD, 2010). Not only that, women's participation in the workforce as compared to men is also an important determinant of their social status (Mammen, 2000). Women's employment is crucial for raising their living standards and well-being. However, economic well-being and welfare of women may not improve if they are engaged in low-paying distress-driven work (Srivastava & Srivastava, 2009). Women's participation in the workforce assumes more importance in the case of developing countries. This is because of its positive effects on the level of output and negative effects on population growth (Collver & Langlois, 1962). Increasing rates of women's participation have enabled developed countries to embark on a path of higher growth (The Economist,

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2006). It has been found that in developing countries like India, women's participation in the workforce has been remarkably low as compared to men. However, the role of women in economic activity has been increasing in recent years. Therefore, it is important to examine magnitude and nature of work taken up by women in India.

There are extensive studies that have looked at the issue of female employment in India. Ghosh and Mukhopadhyay (1984) reported a drastic reduction in number of female workers and their work participation rates. They explained this situation mainly in terms of the dominant position of the male in the workforce, the low level of overall employment, and the adverse sex-ratio of females in the population. They also examined the issue of inter-state variations in female employment. They found that northern States like Haryana, Uttar Pradesh (UP) and Punjab are characterised by low participation rates and southern states like Tamil Nadu and Kerala show higher participation rates. Dunlop and Velkoff (1999) explain that despite the fact that most women in India work, most of their work does not get accounted in the official statistics. They argue that the recorded workforce participation of females is very low, and it is difficult to estimate unemployment in India. So, much of the unemployment data does not correctly reveal the participation rates of women. Unni and Rani (2000) have examined the issue of informalisation of employed women. Their study finds rising informalization of the labour force in India and other South Asian countries. They argue that sub-contracting and loose contracts are primary reasons that are responsible for this trend.

Chandrashekhar and Ghosh (2007) have examined the urban female employment at the national level. They have looked at the quality of new jobs created for the urban females. Their analysis reveals that there has been a decline in casual employment of urban females and increase in the regular and self-employment. Similarly, a study by International Institute for Labour Studies (2004) has looked at the quality of women employment. The study explains that since most women in India are engaged in part-time work, informal sector, and in the form of non-unionised labour, therefore, it is highly likely that they are employed in low-quality work.

Chandrashekhar and Ghosh, (2007) in their analysis of urban female employment have found that there has been a sharp decline in the casual employment of urban women. They have observed that there has been an increase in self and regular employment for urban women. Srivastava

and Srivastava (2009) have studied the trends and patterns of women's employment in rural India and also examined the determinants of women employment. They have found that rural female employment in last few decades has increased, but there has not been an improvement in outcomes. Their study also finds that female workers are engaged in agricultural work as self-employed or casual labour. They further argue that higher work participation does not always indicate a higher welfare unless it is accompanied by educational attainment. They find that that education is a strong determinant of high-quality work for employed women.

Given the above evidence, this paper attempts to present an overall picture of women's work in India and compare the rural-urban scenario with respect to women's employment. The paper seeks to capture the trends and patterns of female employment in urban and rural areas, both at the all-India and state level. It also examines the kind and quality of work taken up by females in India and makes a comparative study of the urban-rural female employment scenario with respect to wages, education level, sectoral employment, etc.

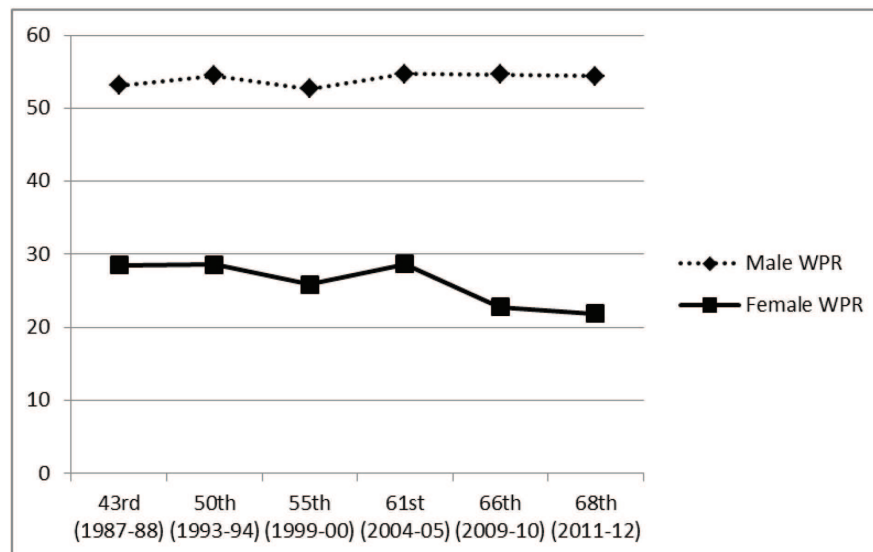
Data Sources and Methodology

The main data sources used in this paper are the employment and unemployment surveys (EUS) of the NSS. NSSO carries out such surveys once in almost every five years covering about 5 lacs individuals. The NSS reports of the 43rd (1987-88), 50th (1993-94), 55th (1999-2000), 61st(2004-05), 66th (2009-10) and 68th (2011-12) rounds have been used to look at the trends and patterns of female workforce participation in the urban and rural areas. NSS provides four different employment estimates based on three approaches to activity classification (usual status, current weekly status, and current daily status). NSS defines 'Principal Status' (PS) as "the activity status on which a person spent relatively longer time during the 365 days preceding the date of survey." This is similar to the definition of 'main worker' in the Census. A person is said to be employed in 'Subsidiary Status' (SS) "if he is engaged in any activity for only a part of the year (similar to the concept of a 'marginal worker in Census)." If a person is working either under PS or SS, he is said to be counted under 'Usual Status or Usual Principal Subsidiary Status (i.e., both combined). This paper uses the employment estimates based on usual status (or usual principal subsidiary status, PS+SS).

Analysis and Interpretation

In almost all countries especially in the developing parts, the male participation rates are significantly higher than females. Same is also evident in India as well; women participation rates in employment are almost half as compared to men. Figure 1 shows that at the all-India level male WPR range between 50-55percent from 43rd round (1987-88) to 68th NSS round (2011-12). Corresponding rates for females are in the range of 22-29percent. Male WPR has remained more or less stable during the entire study period.

Figure 1: Male-Female Workforce Participation Rates



Source: Employment and Unemployment Surveys of NSS

In comparison to the male WPR, female WPR reveals a slightly more fluctuating trend. Female WPR has declined from 28.5 percent in 43rd round to 21.9percent in the 68th round. The 61st round (2004-05) shows significant increase in female WPR as compared to the earlier rounds. Several scholars (Chandrashekar and Ghosh, 2007; Srivastava & Srivastava, 2009) have argued that globalisation could be one of the important reason for this increase in female employment. However, it is equally important to examine whether there has been an increase in employment opportunities for both rural and urban women.

Table 1 presents male and female WPR in urban and rural areas for the period 1987-88 to 2011-12. It is clear from the table that participation rates of rural women are significantly higher than those of urban women. And there is a wide gap in female employment in rural and urban areas. During the 43rd round, only 15.2 percent of female were employed in the urban areas which further decreased to 14.7 percent during the 68th round. Similarly, 32.3 percent of the rural females were participating in the rural activity which had further decreased to merely 24.8 percent. In comparison to the magnitude of rural-urban disparity of female employment, the same is very less for male participation rates. Given the picture, can we conclude that higher WPR of rural women is an indication of their well-being?

Table 1

Urban and Rural WPR: Male & Female				
	Female WPR		Male WPR	
Round	Urban	Rural	Urban	Rural
43rd	15.2	32.3	50.6	53.9
50th	15.5	32.8	52.1	55.3
55th	13.9	29.9	51.8	53.1
61st	16.6	32.7	54.9	54.6
66th	13.8	26.1	54.3	54.7
68th	14.7	24.8	54.6	54.3

Source: Employment and Unemployment surveys of NSS

Such questions can be answered by analysing the kind of work taken up by women. This is done in the subsequent section. Employment in both rural and urban areas has witnessed a decline in the 66th round as compared to 61st round. This decline is sharper for urban women as compared to rural women. One of the reasons for this phenomenon could be the fact global recession of 2008 would have had a more adverse effect on urban employment vis-à-vis rural employment

¹Self-employed are persons who operated their own farm or non-farm enterprises or were engaged independently in a profession or trade on own-account. Regular workers are persons who worked in others' farm or non-farm enterprises (household and non-household) and, in return, received salary or wages on a regular basis. Casual workers are persons who were casually engaged in others' farm or non-farm enterprises (household and non-household) and, in return, received wages according to the terms of the daily or periodic work contract. (Definitions taken from NSS employment reports).

Type of Employment of Females in India

In this section, we have examined the type of work taken up by female workers of both rural and urban areas by examining the status of their employment—whether self, regular or casual. Such an analysis of employment type is useful in providing information about the nature of women’s employment in India. Whether women in India can find employment that raises their welfare or is it solely driven by unskilled, low-paying type of work is a major question. Table 2 shows the employment status of urban and rural females for the period 1987-88 to 2011-12. There has been a continuous rise in the regular employment since the 43rd round. It has increased from 27.5 percent in the 43rd round to 42.8 percent in the 68th round. This increase is positive development since regular employment means better working conditions and higher incomes. Self-employment of urban females has also witnessed an increase during 61st round, after remaining more or less constant for the last two rounds. However, it has declined significantly in the recent years. On the other hand, casual employment of urban females has continuously declined from 25.7 percent in the 43rd round to 14.3 percent in 68th round except a marginal increase in the 61st round in comparison to the earlier round. Overall, the decline in casual employment and increase in regular employment of urban females is a promising development.

Table 2

Type of Employment (PS + SS) of Females Workers						
Urban Females				Rural Females		
Rounds	R.E	S.E	C.E	R.E	S.E	C.E
43rd	27.5	47.1	25.4	3.7	60.8	35.5
50th	28.4	45.8	25.8	2.7	58.6	38.7
55th	33.3	45.3	21.4	3.1	57.3	39.6
61st	35.6	47.7	16.7	3.7	63.7	32.6
66th	39.3	41.1	19.6	4.4	55.7	39.9
68th	42.8	42.8	14.3	5.6	59.3	35.1

Source: Employment and Unemployment surveys of NSS

Note: PS: Principal Status, SS: Subsidiary Status, RE: Regular Employment, SE: Self-Employment and CE: Casual Employment.

In contrast to urban females, there has been marginal increase in regular employment of rural females in the recent years after a slight decline during the 50th round. It has increased from 3.7 percent in 43rd round to 5.6 percent in the 68th round that means that stable employment opportunities for rural women have not increased significantly. On the other hand, casual employment of rural women has remained more or less stable during the entire period except a slight dip during the 61st round. This marginal increase in regular employment and constancy of casual employment needs examination at length. Similarly, self-employment of rural women does not show any systematic pattern. It is erratic in nature.

Sectoral Employment of Females in India

Table 3 represents the broad sectoral classification of employment for urban and rural females. The proportion of urban women engaged in agriculture has gradually declined over time from around 29 percent in the 43rd round to around 11 percent in the 68th round. This sharp decline over this 24-year period from 1987-88 to 2011-12 is very much expected in the context of structural transformation following the economic reforms of 1991. However, the proportion of urban women engaged in the manufacturing sector nearly remains constant upto 66th round. However, there has been a significant increase of urban females to 44 percent in the manufacturing sector. Given the export-oriented and liberalization policies of the government, this stagnancy of urban female employment from 43rd round to 66th round is indeed surprising. Chandrashekhar & Ghosh (2007) have examined this aspect in detail and have pointed to the chances of misclassification of employment in the available data. They find that while the employment of urban women according to principal status does not display any clear trend, but the employment of urban women according to subsidiary status has been rising steadily. They have explained that home-based subcontracting work does not get included in the employment data and thus could be an explanation of the stagnancy of female employment in manufacturing. However, female employment in manufacturing has increased significantly between 66th and 68th round.

Table 3

Share of Female Employment in Different Sectors						
Urban Females				Rural Females		
Rounds	Agriculture	Manufacturing	Services	Agriculture	Manufacturing	Services
43rd	29.4	27	27.8	84.7	6.9	3.7
50th	24.7	24.1	35	86.2	7	4
55th	17.7	24	34.2	85.4	7.6	4.3
61st	18.1	28.2	35.9	83.3	8.4	4.6
66th	13.9	27.9	39.3	79.4	7.5	5.7
68th	10.9	44	55.1	74.9	16.7	8.3

Source: Employment and Unemployment surveys of NSS

The major gainer has been the other services. It includes both well-paying skilled jobs as well as low-paying unskilled jobs in the private and public sphere. For urban women, employment in other services increased from around 28 percent in 43rd round to around 55 percent in the 68th round. The service sector employment needs to be studied at a disaggregated level to examine the nature of service sector jobs being created for urban women. For rural women, the proportion employed in agriculture has declined from about 85 percent in the 43rd round to about 75 percent in the 68th round. Srivastava & Srivastava (2009) have labelled this slow movement out of agriculture as “creeping feminisation” of agriculture. The concentration of women in agriculture would not significantly improve their well-being as agricultural wages are significantly lower than non-agricultural wages. The proportion of rural women engaged in manufacturing has been very low and stagnant except an increase of 16.7 percent in the 68th round. Similarly, the employment in other services is also very low and has increased only marginally.

Educational Status of Working Females in India

Table 4 shows the educational levels of working urban and rural women. The education level is divided into 6 categories: ‘not literate’, ‘literate and up to primary’, ‘middle’, ‘secondary’, ‘higher secondary’, and ‘graduate and above’. In urban areas, WPR is higher for illiterate females than for females with higher levels of education except graduates. For the 66th

²Other services category excludes trade, hotels and transport and communication.

round, 23 percent of illiterate urban women are employed, but this is only 15 percent and 9 percent for women who have middle and higher secondary education.

Table 4

Educational Level of Working Females										
Urban Females						Rural Females				
Rounds	43 rd	50 th	55 th	61 st	66 th	43 rd	50 th	55 th	61 st	66 th
Not Literate	29.2	30	27.1	30.4	23.1	52.6	54	51.3	55	43.2
Upto Primary	17.5	20.3	17.7	23.4	20.6	39.1	41.6	40.3	44.9	38.4
Middle	11.3	13.1	12.9	16.1	15.4	29	29	29	37.1	29.4
Secondary	15.1	13.4	12.4	12.3	9.7	26.1	25.8	25.7	30.5	22.2
Higher Secondary	NA	14.7	12.4	12.9	9.4	NA	23.4	20.6	25.2	18.3
Graduate & Above	31.5	30.1	27.3	29	25.9	35.1	36.6	31	34.5	29.7

Source: Employment and Unemployment surveys of NSS

However, such a pattern does not hold true for men i.e. higher levels of education are associated with higher participation rates (Srivastava & Srivastava, 2009). Now the question arises is that what are the reasons for such differences. There are complex social and economic factors at work which could be held responsible for this pattern.

In the case of urban females with graduate and above level of education, the WPR declined from around 32 percent in the 43rd round to 29 percent in the 61st round and then to 27 percent in the 66th round. This indicates that urban women finding employment are less educated and are probably finding work in low-paying unskilled jobs which do not require much education. Even for rural women, WPR is higher for illiterate females than for females with higher levels of education. In the 66th round, around 43 percent of the illiterate rural women are employed, whereas this is only 18 percent and 29 percent respectively for women who have higher secondary and graduate level of education. Like urban women, WPR of rural women with secondary, higher secondary and graduate and above level of education have also declined from 50th round to the 66th round. This implies that a lesser number of educated and skilled rural women are participating than earlier and most of them finding work in low-paying unskilled jobs.

Wages Paid to Women

Table 5 shows the average wage of regularly employed for men and women in rural and urban areas from 1993-94 to 2011-12. It is clear from this Table that the absolute wage differentials between rural and urban women have widened over time. During 1993-94, rural women had an average wage of Rs 35 while urban women had an average wage of Rs 62 and the corresponding figures for 2011-12 are Rs 201 and Rs 366 respectively.

Table 5

Average Wage of Rural & Urban Females from 1993-94 to 2011-12				
Females			Male	
Rounds	Rural	Urban	Rural	Urban
50th	34.89	62.31	58.48	78.12
55th	114.01	140.26	127.32	169.71
61st	85.53	153.19	144.93	203.28
66th	155.87	308.79	249.15	377.16
68th	201.56	366.15	322.28	469.87

Source: Employment and Unemployment surveys of NSS

Thus, it becomes clear that wage differentials for rural and urban women have not narrowed down during the study period. There are also problems like lesser number of days of work for females and receiving less than the minimum stipulated wages (Srivastava & Srivastava, 2009; NCEUS, 2007). In contrast to females, the wage disparities in case of males are less striking. Therefore, female workers are in a worse-off position in terms of wage earnings in comparison to the male workers. In the category of female workers, rural females are relatively worse off. Thus, there is an urgent need for governmental policy to improve the average earnings of rural women and reduce these disparities.

State-level Employment Scenario

Table 6 shows urban female WPR in different states during 1993-93 to 2011-12. Among major states-Tamil Nadu, Andhra, Kerala, Rajasthan and Maharashtra show higher than all-India average participation rates for the urban females. On the other hand, Assam, Bihar, Uttar Pradesh, Gujarat, Haryana, Punjab and M.P. have female WPR lower than the national

average. West Bengal and Orissa show WPR coincide with the all-India average. Only three states Andhra, Kerala and Tamil Nadu have female WPR higher than the level of 20 percent. Almost all states have experienced a fall in urban female WPR during 66th round, 2009-10. The reasons for this fall at the state-level and national-level needs details examination. However, the global financial recession could be one of the possible reasons for this decline in WPR. Except Bihar, Assam, and Kerala, all states experienced an increase in the urban female WPR from 55th round to the 61st round. The increase is more significant for states like Andhra, Tamil Nadu, Maharashtra, and West Bengal. The WPR of both rural and urban females declined between 61st and 66th round. However, this trend was reversed in the subsequent 68th round.

Table 6

State-Wise Female Workforce Participation Rates										
States/ Rounds	Urban Females					Rural Females				
	50th	55th	61st	66th	68th	50th	55th	61st	66th	68th
Andhra Pradesh	19.9	17.8	22.4	17.6	24	52.1	47.8	48.3	44.3	62.2
Assam	9.2	11.2	10.9	9.3	12.2	15.9	15.1	20.9	15.8	17.8
Bihar	6.9	7.5	6.5	4.7	7.1	17.2	17.3	13.8	6.5	8.5
Gujarat	14.2	13.5	15.1	14.3	19.3	39.6	41.3	42.7	32	40.3
Haryana	15.2	9.8	13.2	13	14.4	27.1	20.2	31.7	25	23.4
Karnataka	18.1	17.8	18.1	17	23.5	43	38	45.9	37	40.6
Kerala	20.3	20.3	20	19.4	27.8	23.8	23.8	25.6	21.8	30.8
Madhya Pradesh	14.2	13.4	15.4	13.1	17	41	38.2	36.6	28.2	38
Maharashtra	16.9	13.7	19	15.9	23.6	47.7	43.4	47.4	39.6	56.5
Orissa	15.1	14.5	14.8	11.9	21.6	31.7	29.9	32.2	24.3	36.1
Punjab	9.3	12.5	13.3	12.4	19.4	22	28	32.2	24	32.9
Rajasthan	16.3	13.8	18.2	12	20.6	45.7	38.8	40.7	35.7	53
Tamil	23	21.5	24.1	19.1	27.9	47.8	43	46.1	40.5	51.9
Uttar Pradesh	10.2	9.4	11.7	8	14.5	21.9	20.1	24	17.4	28.1
West Bengal	14.3	11.7	15.5	14.1	23.8	18.5	16	17.8	15.2	27.9
All India	15.5	13.9	16.6	13.8	21	32.8	29.9	32.7	26.1	37.2

Source: Employment and Unemployment surveys of NSS

States like Assam, Bihar and Uttar Pradesh, are the worst performers in terms of the participation of urban women in the workforce. This raises questions about the economic and social status of women in these states. Does economic advancement of a state propel its women into employment? Because of complex social and economic factors which are significantly different in different regions such questions do not have a simple answer. On the other hand, Tamil Nadu, Kerala, Andhra and Maharashtra display a good performance with respect to female WPR.

In the case of Kerala, Punjab and Haryana, WPR of rural women is similar to the all-India average. Gujarat and Rajasthan emerge as two states where rural female WPR are significantly higher than urban female WPR. Assam, Bihar and U.P. are the three states where both urban and rural female employment is very low as compared to the national level. So it is clear that significant inter-state variation in case of female WPR is observed in both urban and rural areas. A more in-depth and disaggregated analysis is required to find out the reasons for such inter-state disparities.

Conclusion

The female workers have much lower participation rates than their male counterparts and hence comprise a marginalized section. The share of rural women in the workforce is much higher than those in urban. However, women in rural India are clearly in an inferior position in the labour market vis-à-vis their urban counterparts. This is evident from the fact the most of the rural women are casually employed and are engaged in low-paying agricultural work. During 2011-12, more than 35 percent of rural women were casually employed while this figure stood at less than 15 percent for urban women. This implies that most rural women work long hours in poor working conditions. Moreover, most of the rural women are predominantly engaged in agriculture where earning opportunities are low. On the other hand, the proportion of urban women engaged in agriculture has been declining rapidly, and most of the urban women are finding work in 'services' sector. The wage differentials between rural and urban women are also striking. Rural women earn considerably lower wages than urban women, and the disparities have not shown any tendency to decline. It has been observed that both in urban and rural areas, WPR are higher for illiterate females than for females with higher levels of education in general. This implies that a lesser number of educated and skilled women

are participating than earlier, and most of them are getting work in low-paying unskilled jobs.

State-wise female WPR reveals that southern states like Tamil Nadu, Andhra Pradesh, Karnataka, Maharashtra, and Kerala have participation rates higher than the all-India level. Wide interstate disparities are observed with respect to female WPR for rural and urban females. Several important policy implications emerge out of the above analysis. There is an urgent need to provide education, training and skill development programmes for women that would help in raising their productive potential. It is also important to focus on the provision of secondary and higher education that would ensure that women workers find high-quality regular employment.

There are significant wage differentials between rural and urban women. Apart from rural-urban wage differentials there exists a significant gender differential also in the labour market. Therefore, the study suggests appropriate government intervention along with policy formulation for addressing the issue.

References

- Chandrashekar, C.P. and Ghosh, J. 2007. 'Women Workers in Urban India', Macroscan http://www.macroscan.com/fet/feb07/fet060207Women_Workers.htm
- Collver, A. and Langlois, E. 1962. 'The Female Labour Force in Metropolitan Areas: An International Comparison', *Economic Development and Cultural Change*, 10(4): 367-385
- Dunlop, J.E. and Velkoff, V.A. 1999. 'Women and the Economy in India', Working Paper, International Programs Center.
- Ghosh, B. and Mukhopadhyay, S.K. 1984. 'Displacement of the Female in the Indian Labour Force', *Economic and Political Weekly*, 19(47): 1998-2002.
- Mammen, K. and Paxson, C. 2000. 'Women's work and Economic Development', *The Journal of Economic Perspectives*, 14(4): 141-164.
- National Sample Survey Organisation. 1993-1994. 'Employment-Unemployment Situation in India, Round, Round 50th', Report No. 409, Ministry of Statistics and Programme Implementation, Government of India, New Delhi
- National Sample Survey Organization. 1999-2000. 'Employment-Unemployment Situation in India, Round 55th, Report No. 458 – I and II, Ministry of Statistics and Programme, Implementation, Government of India, New Delhi.

- National Sample Survey Organisation.2004-05. Employment-Unemployment Situation in India, Round 61st, Report No. 515 – I and II, National Sample Survey Organization, Ministry of Statistics and Programme Implementation, Government of India, New Delhi.
- National Sample Survey Organisation.2009-10. Employment-Unemployment Situation in India, Round 66th, Report No. 537 – I and II, National Sample Survey Organisation, Ministry of Statistics and Programme Implementation, Government of India, New Delhi.
- National Sample Survey Organisation. 2011-12. Employment-Unemployment Situation in India, Round 68th, Report No. 537 – I and II, National Sample Survey Organisation, Ministry of Statistics and Programme Implementation, Government of India, New Delhi.
- National Institute of Public Cooperation and Child Development. 2010. Statistics on Women in India.
- NCEUS. 2008. ‘A Special Programme For Marginal And Small Farmers’, National Commission for Enterprises in the Unorganised Sector, New Delhi. Government of India.
- Srivastava, N. and Srivastava, R. 2009. ‘Women, Work and Employment Outcomes in Rural India’. Discussion draft presented at FAO-IFAD-ILO workshop on Gaps, trends and current dimensions in agricultural and rural employment.
- The Economist. 2006. ‘Women in the Workforce: The Importance of Sex. <http://www.economist.com/node/6800723>
- Unni, J. & Rani, U. 2000. ‘Women in informal employment in India (private)’. The International Association for Feminist Economics Conference, Istanbul.

Inter-State Variations in Rural Healthcare Infrastructure in North-East India

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Abstract

The objective of this study is to understand the rural public healthcare system in North East India. It also aims to look at the status of the healthcare infrastructure of the region, the healthcare facilities available, the position of manpower available at these centres and the extent to which these facilities cater to the requirements of the rural population. An attempt is made to construct a healthcare infrastructure index for the eight states in order to determine their service capacity to the rural population, with the help of the method of Principal Component Analysis. Subsequently the states would also be ranked according to their performances in terms of infrastructure as well service capacity.

Keywords: Health Infrastructure, Manpower, Northeast India

Introduction

Good health is an important determinant of economic growth and a component of well-being of the population. The performance of the nation's public healthcare system and the importance of health as a means to enhance economic growth and development of a nation have received widespread attention in recent decades. Improving the health status of the population has become a forefront agenda of most developing countries for a very long time (WHO, 2000). Health is no longer viewed as an end product of the development process, but an important contributor to the development of a nation. The linkages between health, a productive workforce, poverty reduction, and development have been well recognised.

This necessitates the need for the existence of a strong and efficient public healthcare system which is not only an important determinant of an individual's health but the health of a population as a whole. Therefore,

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the tasks laid down before every government are addressing the issues related to good health, a strong and efficient healthcare system to deliver the objectives and thus achieving the end result which is improved health of the population and economic development.

Infrastructure has been defined as “the basic services or social capital of a country, or part of it, which make economic and social activities possible” (Rutherford, 2002). Its components may directly protect the health of the individuals, such as public sanitation systems or they may indirectly support the activities that protect and promote the health of a population. Thus, the physical health infrastructures are looked upon as formal and tangible structures that support the health system. Since health is a basic universal and fundamental right, the distribution of health resources is also important both in terms of quantity and quality (Goel, 2009).

The term physical infrastructure in health, according to Bhandari and Dutta (2007), has a much broader meaning. It includes not only healthcare centres, dispensaries, or hospitals, but also well trained staff with a service perspective. Healthcare infrastructure is also looked upon as an important indicator in order to understand the provisioning and the working of any health system. Thus the aim of a health care system is to provide healthcare facilities to the people, thereby improving their health status. Demographic indicators such as infant mortality rate, death rate and birth rate are dependent to a large extent on the availability of healthcare facilities.

The most imperative health sector issues that India has to tackle with are its mortality indicators, such as infant mortality rate and maternal mortality rate which continue to lag behind the target plan (NHDR, 2011). These indicators have been found to be strongly influenced by the availability of health infrastructure. Prabhakar and Manoharan (2005) also added that some of the factors that have impeded the tribals in India from accessing healthcare services are their geographic isolation, poor economic status and levels of living, different societal attitudes and traditional beliefs, and deficiency in healthcare services.

Singh (2008) also reported that access to health services in the north eastern states becomes difficult due to problems in physical accessibility due to the difficult terrain. The presence of a vast network of health infrastructure was also found to be ineffective. However, since the size of the population was low, the number of population served per health centre was reported to be high in these states. The states of north east India have

a poorly developed health care delivery system both in terms of health care personnel, health care institutions and infrastructure particularly in rural and tribal areas. The findings of the Preliminary Assessment of the Social Enterprise Sector in the North Eastern Region in India (2012) cited topographical peculiarities as one of the major challenges to healthcare in the north east. The region is characterised by difficult terrain such as hilly areas frequented by floods and landslides and a huge tribal population living in remote villages. Given these conditions, it becomes difficult to ensure the provision of health services and sanitation in the region. Active participation is needed from the government and society to make healthcare more accessible and affordable.

Against this background, this paper attempts to look into the status of the rural health care infrastructure of the north eastern states of India. An attempt would also be made to construct a health infrastructure index that throws light on the level of development in infrastructure and availability of facilities in the rural health sector.

Rural Healthcare System in North East India

India's north eastern region comprises of eight states; Assam, Arunachal Pradesh, Manipur, Meghalaya, Mizoram, Nagaland, Tripura and Sikkim. The entire region (8 states) covers a total area of 262,000 sq. kms, accounting for about 3.7 per cent of the country's total geographic area. With a population of 45.6 million (Census 2011), it accounts for 3.67 percent of the country's population. The region has a long international border (98 per cent); it is bounded by China and Bhutan in the north, Myanmar in the east, Nepal in the west and Bangladesh in the south and west. Most of the region is characterized by hilly terrain, inhabited by tribes and people belonging to different cultural and ethnic groups. The region is home to over 200 tribal communities which constitute about one-fourth of the region; Mizoram and Nagaland comprising the majority of the tribal population.

Sheet and Roy (2013) argued that regional disparities in health infrastructure are one of the many problems faced by low income countries. It has been observed that the rural health infrastructure in the north eastern states is said to be one of the poorest among the regions of the country (Saikia and Das, 2012). The population of the north eastern states comprises mainly the rural and tribal communities and as such these rural communities

rely heavily on the public healthcare systems and the traditional system of healing. The health status of the population is also greatly affected by the healthcare services available to the people. The region has better than average Human Development indices as reported in the National Human Development Report (NHDR, 2002). It has, however, failed to bring about economic growth which is evident from the widespread poverty and unemployment both in the rural and the urban areas.

The rural health care infrastructure in the region conforms to an all-India prescribed population norm (Table 1) which was laid down in the Minimum Needs Programme (MNP) of the Fifth Five Year Plan (1974–78). The main objective was to ensure that the rural areas conform to a minimum uniform availability of health care services.

Table 1

Population Norms for Different Health Centres		
Centre	Population Norms	
	Plain Area	Hilly/Tribal/Difficult Area
Sub Centre	5000	3000
Primary Health Centre	30000	20000
Community Health Centre	120000	80000

Source: MHFW (2005), Population Norms (Census 2001)

Thus, based on this pre-determined population norm the rural health care system has been developed into a three-tier structure. The three-tier delivery system is as follows:

1. Sub-Centre for a population of 3000 is the most peripheral contact point between the Primary Health Care System and the community. It is manned by Female Health Worker/one Male Health Worker and one Auxiliary Nurse Mid-wife (ANM).
2. Primary Health Centre (PHC) for a population of 20,000 serves as the first contact point between the village community and a medical officer. It acts as a referral unit for 6 or so sub-centres. It has 10 beds for indoor patients.
3. Community Health Centre (CHC) for a population of approximately 80,000 serves as a referral centre for PHC's. It should be manned by

four medical specialists; a surgeon, a physician and a paediatrician. It has 30 beds for indoor patients with an operation theatre, X-ray, labour room and laboratory facilities.

Sub Centres

The Sub Centre is the most peripheral and is the first contact point between the public healthcare system and the community. Table 2 shows the status of Sub Centres over the various plan periods in the north eastern states.

Table 2

Establishment of Sub Centres during Five-Year Plans						
State	Sixth Plan	Seventh Plan	Eighth Plan	Ninth Plan	Tenth Plan	Eleventh Plan
	(1981-85)	(1985-90)	(1992-97)	(1997-02)	(2002-07)	(2007-12)
Arunachal Pradesh	55	155	223	273	379	286
Assam	1,711	5,109	5,109	5,109	5,109	4,604
Manipur	301	420	420	420	420	420
Meghalaya	172	272	377	413	398	405
Mizoram	162	220	324	346	366	370
Nagaland	133	244	244	302	397	396
Sikkim	82	132	147	147	147	146
Tripura	230	506	537	539	579	632
All India	84,376	130,165	136,258	137,311	145,272	148,124

Source: Rural Health Statistics Bulletin: Various Years.

Table 2 gives a picture of the position of Sub Centres established in the region over a period of three decades i.e. from the Sixth Plan period onwards up to the Eleventh Plan period. The Table shows that there has been an increase in the number of Sub Centres in almost all the states. Assam has the largest number of health sub-centres owing to its large geographical size. The state of Manipur however shows that the number of Sub Centres have remained constant over the various plans. Sikkim also depicts a similar picture where the number of Sub Centres was 82 in the Sixth Plan period and increased to 132 in the next period. From the Eighth Plan onwards however, the numbers of Sub Centres have remained stagnant thereby experiencing a shortage of 3 per cent in relation to the population norms.

Primary Health Centres

Table 3 shows the trend in the establishment of Primary Health Centres (PHCs) in the north eastern states over the different plan periods.

Table 3

Establishment of Primary Health Centres during Five-Year Plans						
State	Sixth Plan	Seventh Plan	Eighth Plan	Ninth Plan	Tenth Plan	Eleventh Plan
	(1981-85)	(1985-90)	(1992-97)	(1997-02)	(2002-07)	(2007-12)
Arunachal Pradesh	0	24	45	65	85	97
Assam	237	449	610	610	610	938
Manipur	31	64	69	69	72	80
Meghalaya	32	56	81	85	103	109
Mizoram	19	35	55	58	57	57
Nagaland	21	33	33	46	84	126
Sikkim	18	20	24	24	24	24
Tripura	32	49	55	58	75	79
All India	9,115	18,671	22,149	22,875	22,370	24,049
Source: Rural Health Statistics Bulletin: Various Years.						

From Table 3 we observe that in the case of PHCs, there has been a steady increase for all the states in the region. In Arunachal Pradesh PHCs were established only in the Seventh Plan. By the Eleventh Plan Period, 97 PHCs had been set up in the state across various districts. In Manipur we observe that there were no changes in the Eighth and Ninth Plan Period where the number of PHCs stood at 69. However the number rose to 80 by the Eleventh Plan Period. Similarly, in Meghalaya and Nagaland by the Eleventh Plan period we can see that the number of PHCs increased to 109 and 126 respectively. Sikkim however showed no change in the establishment of new PHCs where the number remained at 24.

Community Health Centres

The Community Health Centres (CHCs) in the region have witnessed slow growth accompanied by stagnation at various periods of the Five Year Plans. Assam reported no increase in the number of CHCs in the Eighth,

Ninth and Tenth Plan Period. In Sikkim by the Tenth Plan period a CHC was established in each of the four districts of the state. However, by the Eleventh Plan it was found that only 2 CHCs were operating i.e. in East Sikkim and South Sikkim only. Arunachal Pradesh however saw a steady increase in the number of CHCs being established over the different plan periods.

Table 4

Establishment of Primary Health Centres during Five-Year Plans						
State	Sixth Plan	Seventh Plan	Eighth Plan	Ninth Plan	Tenth Plan	Eleventh Plan
	(1981-85)	(1985-90)	(1992-97)	(1997-02)	(2002-07)	(2007-12)
Arunachal Pradesh	0	6	9	20	31	48
Assam	12	60	100	100	100	108
Manipur	6	10	16	16	16	16
Meghalaya	3	3	10	13	26	29
Mizoram	1	4	6	9	9	9
Nagaland	1	4	5	9	21	21
Sikkim	0	2	2	2	4	2
Tripura	3	8	11	11	10	11
All India	761	1,910	2,633	3,054	4,045	4,809
Source: Rural Health Statistics Bulletin: Various Years.						

Manpower

Another very important facet that constitutes the healthcare system besides infrastructural facilities is the availability of adequate and competent manpower for proper functioning of the system. It has been described as the heart of a health system in any country. Human resources for health are defined as “the stock of all individuals engaged in the promotion, protection or improvement of population health” (World Health Report 2007). The health workforce constitutes not only doctors and nurses but also public health workers, policy makers, educator’s clerical staff, scientists, pharmacists, etc.

India’s mandate for the Universal Health Coverage to a large extent depends upon efficient distribution and organization of human resources

(Planning Commission, 2011). Their role and contribution to this sector is fully recognized. Thus, the challenge for any healthcare system to ensure the equitable distribution of health professionals – both geographically and in the different areas of health care (Martinez and Martineau, 2002). One of the problems in the rural areas, however, is the lack of qualified practitioners of different systems of medicine (WHO, 2007). The availability of well trained human resources is imperative for the improvement in health outcomes in rural areas. The Sixth Five Year Plan reaffirmed the importance of investment in health as part of its strategy to develop the human resources of the country both horizontally and vertically. Similarly, the Ninth Five-Year Plan also emphasised the need for health manpower planning taking into consideration the assessment of available manpower and health care facilities and the demand for health care services. The occupational categories of the health force can be categorised as follows:

Physicians: Generalists and Specialists.

Nurses: Professional and auxiliary nurses and other nurses –dental/primary care.

Midwives: Includes auxiliary midwives but excludes traditional birth attendants.

Dentists: Includes dental assistants and dental technicians.

Pharmacists: Includes pharmaceutical assistants.

Lab Workers: Includes Lab scientists, lab assistants, technicians and radiographers.

Community Health Workers: Includes traditional medicine practitioners, faith healers, lady health visitors, traditional birth attendants, etc.

Health Management and Support Workers: Includes managers, statisticians, teaching professionals, accounts/administrative staff, computer technicians, ambulance staff and general support staff.

The status of manpower in the north eastern states is however mixed (Saikia and Das, 2011). While some states show a surplus of manpower, other states show an acute shortage of manpower resources. Table 5 and 6 shows the number of doctors and specialists serving the rural population of the north eastern states. We observe that for most states the number of doctors serving the rural population has increased after 2011. There is a decrease in the population served per doctor. The state of Manipur, however,

experienced a decline in the number of doctors therefore increasing the population size served per doctor.

Table 5

State-wise Number of Doctors Serving the Rural Population				
State	Year	No. of Doctors	Census Population in ' 000	Population Served per Doctor
Arunachal Pradesh	2001	355	1091	3037
	2011	445	1198	2692
Assam	2001	2160	26638	12128
	2011	3844	30191	7854
Manipur	2001	684	2389	2820
	2011	584	2364	4048
Meghalaya	2001	346	2306	6665
	2011	504	2560	5079
Mizoram	2001	260	891	3427
	2011	298	993	3332
Nagaland	2001	344	1989	5782
	2011	327	2223	6798
Sikkim	2001	156	540	3462
	2011	373	605	1622
Tripura	2001	797	3191	4004
	2011	737	3574	4849

Source: Rural Health Statistics Bulletin: Various Years

One of the major concerns of the health sector in this region is manpower shortages. The average doctor to patient ratio in India was six per 10,000 populations. The ratio is much lower among the north eastern states. The region still faces an acute shortage of specialists to meet the requirements of the population. Garg et. al (2012) argued that there exists a huge imbalance in the urban–rural distribution of specialists, as more medical specialists are concentrated in the urban areas. Thus, there is a need to address imbalances in the rural sector in order to address the shortage of skilled manpower catering to the needs of the rural population.

Studies that have focused specifically in the north east attribute a number of factors to the low levels of development of healthcare which

results in poor health outcomes of the population. The healthcare in the north eastern region is thus characterized by a number of problems such as lack of infrastructural facilities, non-functioning of available infrastructure and difficulty in access.

Table 6

State-wise Position of Total Specialists at Community Health Centres (CHCs) in Rural Areas						
State	Year	Required (R)	Sanctioned (S)	In Position (P)	Vacant (S-P)	Shortfall (R-P)
Arunachal Pradesh	2001	80	3	0	3	80
	2011	192	NA	1	NA	191
Assam	2001	400	200	200	0	200
	2011	432	NA	216	NA	216
Manipur	2001	64	40	19	21	45
	2011	64	64	4	60	60
Meghalaya	2001	52	2	2	0	50
	2011	116	8	9	*	107
Mizoram	2001	36	4	4	0	32
	2011	36	NA	2	NA	34
Nagaland	2001	36	12	0	12	36
	2011	84	NA	34	NA	50
Tripura	2001	44	0	0	0	44
	2011	44	NA	0	NA	44
Sikkim	2001	8	20	3	17	5
	2011	8	NA	0	NA	8
India	2001	12172	6617	4124	2493	7459
	2011	19236	9831	6935	3880	12301
Source: Rural Health Statistics Bulletin: Various Years						
* Surplus. All India figures for Vacancy and Shortfall are the totals of State-wise Vacancy and Shortfall ignoring surplus in some States / UTs						

Literature Survey

Laxmi and Sahoo (2013) described health infrastructure index as a “weighted average of various components”. In their study, the number of hospitals and

dispensaries, the number of beds and number of doctors were used as latent variables using Principal Component Analysis (PCA). Hati and Majumder (2013) argued that the main aim of a composite indicator is to have a single indicator that would be representative of the various components of the healthcare system. In their study they constructed a health infrastructure index by combining three components of healthcare preventive, curative and promotive health infrastructure. Kumari and Raman (2011) in a similar study developed a composite health development index by taking into account several components such as number of PHCs, number of allopathic, unani, ayurvedic hospitals, dispensaries, maternal and child health centres, sub-centres and community health centres. The infant mortality rate and crude death rate are also included in order to rank the health attainment in the state of Uttar Pradesh. Annigeri (2004) in a similar study attempted to create a health infrastructure index as well as a health performance index using similar indicators as seen in the study by Kumari (2013) for the States of Maharashtra, Karnataka and Orissa. These models have been estimated using OLS methods, with linear and log-linear specifications in order to determine the elasticity of performance of the health sector with respect to the budget allocation. The findings reveal that the state of Orissa has worsened over time while Maharashtra and Karnataka have shown no signs of improvement.

Data and Methodology Used

In order to develop a health infrastructure index across the north eastern states, 16 indicators have been considered. They include both physical infrastructure as well as manpower resources. These indicators will be compiled for two time periods 2001 and 2011. The indicators used to construct the composite health infrastructure index are as follows:

- X1: Average number of villages covered by a SC
- X2: Average number of villages covered by a PHC
- X3: Average number of villages covered by a CHC
- X4: Average rural population covered by a SC
- X5: Average rural population covered by a PHC
- X6: Average rural population covered by a CHC
- X7: Hospital -Population ratio

- X8: Bed-Population ratio
- X9: Doctor-Population ratio
- X10: Block extension worker-Population ratio
- X11: Laboratory technician – Population ratio
- X12: Radiographer-Population ratio
- X13: Surgeon-Population ratio
- X14: Obstetrician and Gynecologist - Population ratio
- X15: Pediatrician - Population ratio
- X16: Pharmacist –Population ratio

The different components of health infrastructure have been selected to reflect the different facets of the healthcare system i.e. physical infrastructure, manpower resources as well as the average population served by the healthcare centres across the eight north eastern states. Therefore the method of principal component analysis (PCA) is adopted in order to construct a single unique index in order to capture the variance contained in the different variables of infrastructure.

$$I_{it} = \sum W_{jt} X_{jit}$$

Where, I_{it} is the healthcare infrastructure index of the i -th state (8 north eastern states) in t -th point of time ($t = 2001, 2011$), W_{jt} = measure of j -th component of healthcare infrastructure for t -th time and X_{jit} value of the j -th component of infrastructure for the i -th state at t -th time period. W_{jt} is estimated with the help of principal component analysis in order to arrive at a common infrastructure index for rural health infrastructure in the north eastern states of India.

Empirical Results and Discussions

This section presents the results of the empirical analysis of healthcare infrastructure in the north eastern states. Since infrastructure is measured by various indicators, an attempt is made to derive a single standard measurement or composite index in order to gauge the level of development of health infrastructure in the region. The composite index has been computed for two different time periods 2001 and 2011. The data for the two time periods have been pooled in order to facilitate a comparison between the two time periods.

Table 7

Health Infrastructure Index: Ranking of States based on Composite Index (CI) for Infrastructure					
2001			2011		
Rank	State	Infrastructure Index	Rank	State	Infrastructure Index
1	Tripura	1.328	1	Tripura	2.496
2	Mizoram	0.878	2	Mizoram	1.282
3	Arunachal Pradesh	-0.088	3	Manipur	-0.077
4	Manipur	-0.101	4	Nagaland	-0.099
5	Nagaland	-0.575	5	Arunachal Pradesh	-0.125
6	Sikkim	-0.677	6	Sikkim	-0.638
7	Assam	-0.801	7	Assam	-0.776
8	Meghalaya	-1.169	8	Meghalaya	-0.858
Total Variance Explained 26.689 %					
Extraction method: Principal Component Analysis					

The total variance in the tables is the sum of the variances of these observed variables. The total variance will be equal to the number of observed variables analysed. Thus the total variance explained for the time period 2001 and 2011 is 26.689 per cent. The Eigen value represents the amount of variance that is accounted for by a given component. For both the time periods 2001 and 2011 the first seven components extracted account for relatively large amounts of variance, while the later components account for relatively smaller amounts. According to the Kaiser Criterion, any component that displays an Eigen value greater than 1.00 is accounting for a considerable amount of variance. Therefore, such components will give us a more meaningful variance.

From the composite indices for infrastructure derived for the different states of the north east we can conclude that Tripura is the better performing state from the rest of the states in the region for both the time period 2001 and 2011. In terms of physical infrastructure and manpower, Tripura and Mizoram have better facilities serving the population. Arunachal Pradesh that showed a dismal performance in 2001 reported a huge improvement in

2011. Assam and Meghalaya on the other hand are the poorest performers. Many reasons can be attributed to their performance. The Health Sector Workforce Development Plan (2012) reported that Assam (0.28) was below the regional level in terms of availability of beds in the rural areas. This was against the national average of 1.2 per thousand populations. Similarly, the composite infrastructure index derived showed that Sikkim and Tripura were better performers even though they were geographically smaller states.

The North East Human Development Report (2011) also reported acute shortage of manpower resources in Assam, particularly male health workers at Sub Centres, doctors at PHCs and specialists at CHCs. There was also a huge shortage in the number of pharmacists and lab technicians.

In line with the above findings, Goswami (2005) stated that the state of infrastructure in the north east region was minimum and poor in terms of their service capacity towards the people. Meghalaya was found to be short of at least 100 doctors, which severely affected the people of the rural areas. Most of the PHCs and CHCs were also inadequately staffed. Similarly in the state of Manipur, a shortage of around 160 doctors (including 120 specialists) was observed and only 150 doctors were positioned over 420 public health SCs, 72 PHCs and 16 CHCs.

According to the Nagaland State Human Development Report, 2004, it was observed that “the quality of existing infrastructure needs to be improved”, as the number of health personnel and specialists was inadequate which “restricts the coverage of health services in rural areas”.

Sikkim is perhaps the only state in the region and the only State in the country to achieve the national norm of establishing 1 PHC for 20,000 people and 1 PHSC for 3,000 people (Govt. of Sikkim 2001). Studies done by Chutani and Gyatso (1993), Gyatso and Bagdass (1998), showed that in Sikkim there is a heavy dependence on PHCs and CHCs which could be seen from their utilization pattern. Traditional medicine also continues to dominate the scene in the state.

Sengupta (2009) revealed that the rate of deprivation in terms of coverage of health facilities in the north east was very high. It was reported to be the lowest in Assam followed by Manipur and Nagaland. Arunachal Pradesh also showed better results, despite the difficult terrain which made accessibility extremely difficult.

Sankar and Kathuria (2004) also pointed out that one of the foremost problems plaguing the Indian health systems were the persistent gaps in manpower and infrastructure. The wide interstate disparities, at the primary health care level affect the rural people to a large extent. Therefore there is an urgent need to redress this problem if equity in health access, utilization and health outcomes are to be achieved. Similarly, Chaudhury et al. (2006) and Das and Hammer (2007) reported that high absenteeism, poor quality health services, accompanied by low satisfaction levels of patients and corruption in the system were some of the major drawbacks of the Indian healthcare system.

Conclusion and Limitations

From the analysis, it can be seen that the different variables play an important role in simplifying multiple components into a single figure. A good index will be determined by the data quality and the sources that have been used. Thus the limitation and unavailability of data for the north eastern states played a very important role in the selection of variables for the construction of the healthcare infrastructure index. Thus, the selection of variables that best represent or capture health infrastructure - physical and manpower - will determine the healthcare infrastructure index.

Therefore we can conclude that there is an urgent need to address the shortcomings faced by the public healthcare system in the north eastern states. Our analysis shows that the state of rural healthcare infrastructure in these states is far from satisfactory. Hammer et al. (2007) recognized accountability as the key to solving the crisis in government performance in the public health sector. Health in India is also becoming highly inaccessible to the public due to the high cost of treatment by private medical practitioners. The government must step in to meet the supply gaps in healthcare services particularly in the rural areas and to ensure quality in the standards of its services. The two most important components of the social sector i.e., health and education must be given top priority in order to churn out quality human capital which in turn would contribute to the overall development of the economy.

References

- Annigeri, V. B. 2004. 'Changes in Health Care Infrastructure Manpower and Performance in Three States during Economic Reforms', CMDR Monograph Series No. – 41.
- Bhandari, L. and Dutta, S. 2007. 'Health Infrastructure in Rural India'. in P. Kalra and A. Rastogi (eds) India Infrastructure Report , New Delhi: Oxford University Press : 265-285
- Chaudhury, N., and Hammer, J. S 2003. 'Ghost Doctors: Doctor Absenteeism in Bangladeshi Health Centres', Working Paper No. 3065, World Bank Policy Research.
- Chutani, C.S. and Gyatso, T.R. 1993. 'Health Status of Women and Children in Sikkim', UNICEF, New Delhi: 30.
- Department of Planning and Coordination. 2004. Nagaland State Human Development Report, Government of Nagaland.
- Deutsche Gesellschaft Fur Internationale Zusammenarbeit. 2012. Compass Due North-East: Mapping the Regional Social Enterprise Landscape. Preliminary Assessment of the Social Enterprise Sector in the North Eastern Region of India, New Delhi.
- Garg, S., Singh, R. and Grover, M. 2012. 'India's Health Workforce: Current status and the Way Forward', The National Medical Journal of India, 25(2): 111-113.
- Goel, S. L. 2009. Health Care System and Hospital Administration: Primary. Deep and Deep Publications: 5.
- Goswami, R. 2005. 'Nagaland has 500 doctors for 2 million people', InfoChange Agenda. <http://www.infochangeindia.org/agenda/access-denied/nagaland-has-500-doctors-for-2-million-people.html> , accessed on 30/1/2015
- Gyatso, T.R. and Bagdass, B.B. 1998. Health Status in Sikkim, Department of Health & Family Welfare. Government of Sikkim.
- Hati, K.K. and Majumder, R. 2013. 'Health Infrastructure, Health Outcome and Economic Wellbeing: A District Level Study in India', <https://mpr.ub.uni-muenchen.de/id/eprint/53363>, accessed on 30/01/2015
- Hazarika, I. 2013. 'Health Workforce in India: Assessment of Availability, Production and Distribution', WHO South-East Asia J Public Health, 2:106-12.

- Kumari, R. and Raman, R. 2011. 'Inter- District Disparity in Health Care Facility and Education: A Case of Uttar Pradesh', *Journal of Education and Practice*, 2(1): 38-56
- Kumari, R. 2013. 'Inclusive Health in India: A disaggregated Level Analysis. *Journal of Community Positive Practices*, (1): 45-60.
- Laxmi, T. S. and Sahoo, D. 2013. 'Health Infrastructure and Health Indicators: The Case of Andhra Pradesh, India', *IOSR Journal of Humanities and Social Science*, 6(6):22-29.
- Martínez, J., and Martineau, T. 2002. 'Human Resources in the Health Sector: An International Perspective', *Issues Paper*, London: DFID Health Systems Resource Centre.
- Ministry of Development of North East Region. (MDoNER). 2011. *Human Development Report of North East States*. Government of India.
- North Eastern Council (NEC).2012. *Health Workforce Development Plan for NER*. Shillong. Government of India.
- Planning Commission. 2007. *National Human Development Report 2001* (No. id: 1284).Govt. of India.
- Planning Commission. 2011. *India Human Development Report 2011: Towards Social Inclusion*, Oxford University Press.
- Prabhakar, H., and Manoharan, R. 2005. 'The Tribal Health Initiative Model for Healthcare Delivery: A Clinical and Epidemiological Approach', *Medicine and Society*, 18(4). http://www.nmji.in/archives/Volume_18_4_July_August2005/Medicine_and_Society/The_Tribal_Health.htm, accessed on 26/11/2014.
- Rutherford D. 2002. *Dictionary of Economics*. Second Edition. Routledge. London and New York.
- Saikia, D. and Das, K.K. 2012. 'Rural Health Infrastructures in the North-East India', <http://mpr.ub.uni-muenchen.de/41859/>, accessed on 19/11/2014
- Sankar, D. and Kathuria, V. 2004. 'Health System Performance in Rural India: Efficiency Estimates Across States', *Economic and Political Weekly*, 39(13):1427-1433.
- Sengupta, K. 2009. *Genesis of Human Development in North East India. A Diagnostic Analysis*, Concept Publishing Company. New Delhi.

- Sheet, S., and Roy, T. A. 2013. 'Micro Level Analysis of Disparities in Health Care Infrastructure in Birbhum District, West Bengal, and India', IOSR Journal of Humanities and Social Science, 7 (3): 25-31.
- Singh, U.P. 2008. Tribal Health in North East India: A Study of Socio-Cultural Dimensions of Health Care Practices, Serials Publication. India.
- The World Health Report .2000. Health Systems: Improving Performance, World Health Organization.
- The World Health Report .2007. A Safer Future: Global Public Health Security in the 21st Century. World Health Organization.

Agricultural Productivity and Productivity Regions in West Bengal

NASIM AKTAR*

Abstract

The green revolution technology has played an important role in the development of agriculture but it has also created regional imbalances in crop productivity. The productivity variations in production of cereals, pulses, oilseeds and cash crops in the state of West Bengal have been computed on the basis of Crop Yield Index method initiated by W.M. Yang. In this paper an attempt has been made to examine an overall pattern of agricultural productivity in 18 districts of the state by computing the composite index. On the basis of index value of productivity, the regions were categorized as high, medium and low productivity area.

Keywords: Agricultural Productivity, Productivity regions, Inter-district variations, Crop yield index.

Introduction

Agricultural productivity may be defined as the ratio of total agricultural output to total input used in farm production. Productivity has interchangeably been used to explain production. Production refers to the total volume of output, while productivity refers to the output in relation to resources expended. Therefore, agricultural productivity can be defined as a measure of efficiency in agriculture with which land, labour, capital and other resources are employed.

Agriculture occupies an important place in the economy of West Bengal. It not only provides food to the large and fast growing people but also raw materials to numerous agro-based industries. About 70 per cent of the working population is directly or indirectly engaged in agriculture. In the last three decades agriculture has shifted from subsistence to commercial agriculture. The state of West Bengal is one of the fertile regions in the country. So there is a considerable scope for the improvement of agricultural production and productivity per hectare and per agricultural worker,

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particularly on small and marginal farms which will help to increase income levels and improve the quality of life of the people in the rural areas.

Agricultural productivity has been computed worldwide by many scholars using different methods. Thomson (1926) while measuring the relative productivity of “British and Danish Farming” emphasized and expressed it in terms of gross output of crops and livestock. Kendall (1939) treated it as a mathematical problem and inter related a system of four coefficient (a) productivity coefficient, (b) ranking coefficient, (c) money value co efficiency and (d) starch coefficient or energy coefficient. Shafi (1960) has determined the agricultural efficiency in Uttar Pradesh taking into consideration, eight food crops grown in each of the 48 districts of the state. Chatterjee and Maitrya (1964) has calculated the levels of agricultural development and productivity during 1950-51 to 1957-58 in the state of West Bengal, taking two crops (Rice and Wheat) into consideration. Khusro (1965) has linked assessment of productivity with the output per unit of a single input and output per unit of cost of all inputs in the agricultural production. Shafi (1965) has assessed the productivity on the basis of labour population engaged in Agriculture. According to him, it can be calculated by dividing the gross production in any unit area by the number of man-hours or less precisely by the number employed in agriculture.

Shafi (1967 & 1969) applied Stamp’s standard nutrition unit technique for measuring the efficiency of agriculture in India. He has considered the district as the areal unit and has selected all the food crops grown in India. Noor Mohammad (1967) considered net total productivity (being the relationship between the net products and factor inputs) as a method for the measurement of field productivity and also to assess comparison in time and space. The purpose of this measure is to changes in labour and capital inputs in agriculture. S. H. Siddiqui (1999) calculated the productivity indices of North Bihar Plain on the basis of Yang’s method.

To compute productivity the present study is based on Yang’s ‘Crop Yield Index’ method due to the fact that it considers the yield of all crops compared with the average yield of crops in the region.

Objectives

The present study has the following objectives:

1. To determine the productivity on the basis of computing productivity indices considering the major crops grown in the study region.

2. To delineate the crop productivity regions in order of high, medium and low.
3. To suggest suitable measures for the purpose of agricultural development in weaker districts of the state.

Database and Methodology

The present study is based on secondary sources of data collected from Evaluation Wings, Directorate of Agriculture, Govt. of W.B. and Bureau of Applied Economics and Statistics, Govt. of W.B., Kolkata.

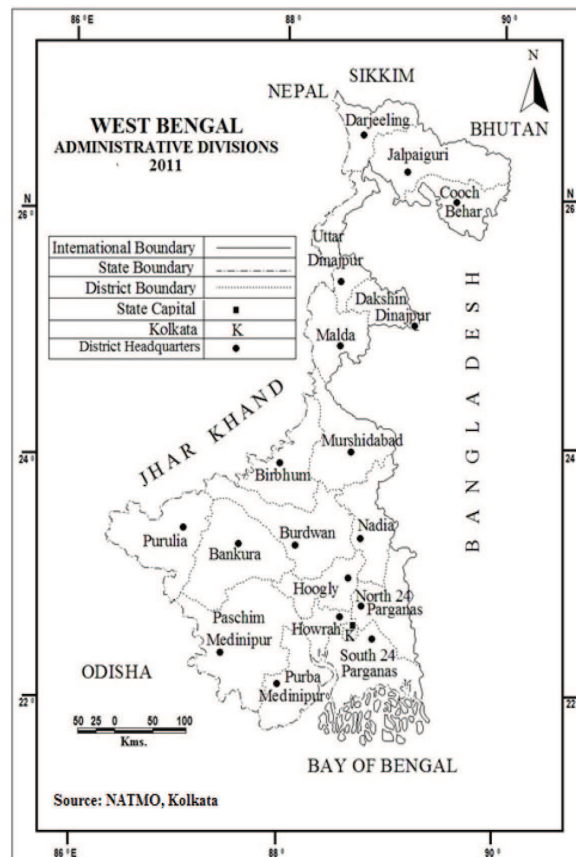
To assess the crop productivity indices on the basis of Yang's (1965) crop yield index method values pertaining to area and yield of major crops for the year 2010-2011. Computation of Crop Yield Index considers the yield of selected crops in the district and compares it with the average yield of crop in the entire region. In calculation of crop yield index, a value in percentage is obtained by dividing the yield per hectare of crops in a particular farm by the average yield of the crop in the entire region. The obtained value is multiplied by 100 and is given the index number, by taking the area, devoted to each crop as a weight and multiplying this by percentage index, the products are obtained. By adding the products and dividing the sum of the products by the total cropped area in the district, the average index obtained is the desired crop index for the particular district, using crop area as weight.

The Study Area

The state of West Bengal has been selected as a study area which is located between $21^{\circ} 25' 24''$ to $27^{\circ} 13' 15''$ north latitudes and $85^{\circ} 48' 20''$ to $89^{\circ} 53' 04''$ east longitudes with three international boundaries i.e., Bangladesh, Nepal and Bhutan. It occupies a geographical area of about 88,752 sq. km. (2.70 per cent of the India's total geographical area) and extending from the Himalayas in the north to the Bay of Bengal in the south. It is surrounded by Sikkim and Bhutan in the north, Assam and Bangladesh in the east, the Bay of Bengal in the south and Orissa, Jharkhand, Bihar and Nepal in the west. The agriculture area of the state is 51,675.40 sq. kms. in 2008-09 and ranking the first in production of rice and jute, and second in production of tea in the country. West Bengal accounts for 16.10 per cent of the total rice production from the 13.43 per cent total rice producing area; 79.53 per cent

of the total jute production from 68.13 per cent of total jute producing area and 19.56 per cent of total tea production from about one-fourth of the area of the country respectively. The total population of the state is 9,13,47,736 and density of population is 1029 in 2011. There are five main seasons in West Bengal, spring, summer, rainy season, a short autumn, and winter. The summer temperatures in the state ranges between 26°C and 40°C while the winter temperatures ranges from 13°C to 19°C. The annual rainfall varies in the different parts of the state. North Bengal receives the highest rainfall, 200 to 400 cm. In the coastal areas rainfall is about 200 cm, in the Ganga plain and in the central part of the state rainfall is 150 to 200 cm. Drought is a common phenomenon in the Bankura and Purulia districts.

Figure 1: Administrative Divisions in West Bengal



Crop Productivity Regions (2010-2011)

With the computation of crop productivity for all the districts of West Bengal, the productivity indices were categorized into high, medium and low.

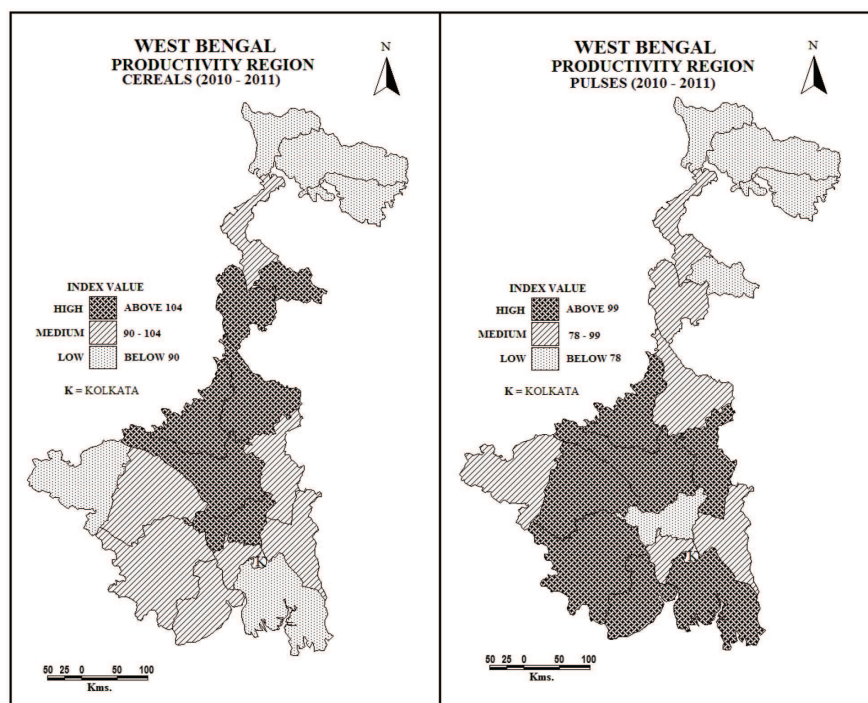
Productivity Regions – Based on Cereal Crops Yield Index

Cereal crops occupy an important place in Agriculture of West Bengal. They occupy 5364.8 thousand hectares area, which account for 60.74 per cent of the total cropped area of the region. Productivity region of cereals has been depicted in Figure 2 whereas the number of districts in each category is given in (Table 1). The region of high productivity of cereals lies in the central, southern, eastern and western part of the study area which includes the districts of Dakshin Dinajpur, Malda, Murshidabad, Hoogly, Burdwan and Birbhum with an area of 2005.1 thousand hectares. The high productivity in this region is due to the assured irrigation facilities, sufficient amount of fertilizers consumption, high yielding varieties of seeds and agricultural implements and machinery. The medium productivity region covers central, south-eastern and southern part of the study region and it includes the districts of Uttar Dinajpur, Nadia, North-24 Parganas, Purba Medinipur and Paschim Medinipur. Altogether they cover an area of 2211.2 thousand hectares. The area under low productivity of cereals lies in northern, south-eastern and western part of the study region which includes the districts of Darjeeling, Jalpaiguri, Cooch Behar, South-24 Parganas and Purulia, with an area of 1148.2 thousand hectares.

Table 1

Productivity Regions under Cereal Crops in West Bengal (2010-2011)			
Category	Index Range	No. of Dist.	Name of the Districts
High	Above 104	6	Dakshin Dinajpur, Malda, Murshidabad, Hoogly, Burdwan and Birbhum
Medium	90-104	7	Uttar Dinajpur, Nadia, North 24 Parganas, Purba Medinipur and Paschim Medinipur
Low	Below 90	5	Darjeeling, Jalpaiguri, Cooch Behar, South 24 Parganas and Purulia
Source: NATMO, Kolkata			

Figure 2: Cereal and Pulses Production in West Bengal



Productivity Regions – Based on Pulses Crops Yield Index

In our predominantly stuffy vegetarian diet, pulses form a very important part as they provide us rich amount of protein. In this study region, only five crops (gram, mung, masur, khesari, maskalai or urd) are taken into account. They occupy 197.0 thousand hectares (2.23 per cent) of the total cropped area of the region. Productivity regions of pulses are shown in (Fig. 2). The high productivity region of pulses occupies an area of 94.1 thousand hectares with crop indices of above 99. It includes the districts of Nadia, South-24 Parganas, Burdwan, Birbhum, Bankura, Purba Medinipur and Paschim Medinipur. The medium productivity regions spread in central, western and southern part of the study region, with an area of 90.3 thousand hectares. It includes the districts of Uttar Dinajpur, Malda, Murshidabad, North-24 Parganas, Howrah and Purulia with crop indices ranging between 78 to 99. The low productivity region covers an area of 12.4 thousand hectares, spread in remaining five districts namely, Darjeeling, Jalpaiguri, Cooch Behar, Dakshin Dinajpur and Hoogly. Here the crop indices are below 78.

Table 2

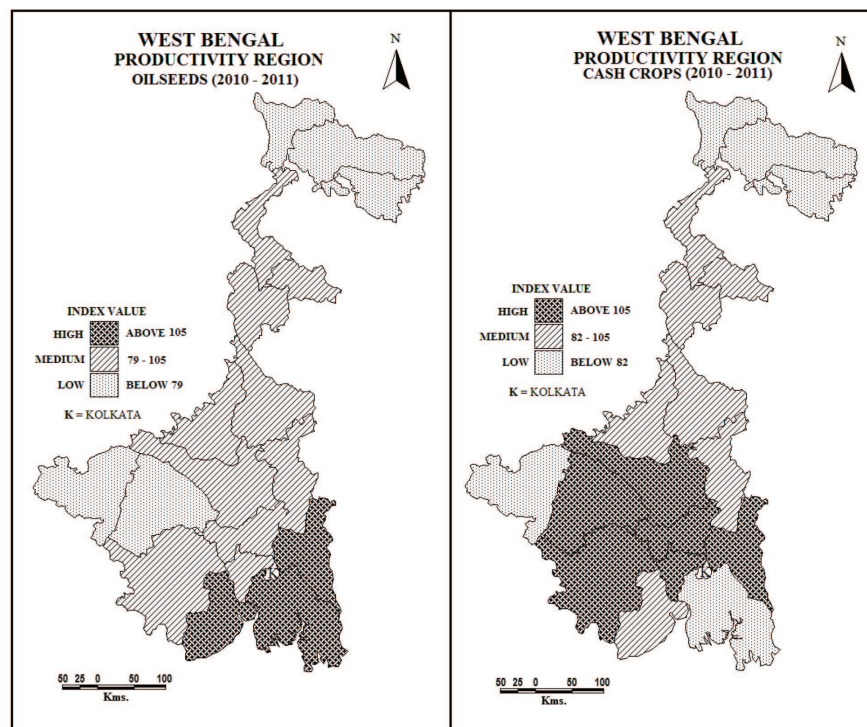
Productivity Regions under Pulses Crops in West Bengal (2010-2011)			
Category	Index Range	No. of Dist.	Name of the Districts
High	Above 99	7	Nadia, South 24 Parganas, Burdwan, Birbhum, Bankura, Purba Medinipur and Paschim Medinipur
Medium	78-99	6	Uttar Dinajpur, Malda, Murshidabad, North 24 Parganas, Howrah and Purulia
Low	Below 78	5	Darjeeling, Jalpaiguri, Cooch Behar, Dakshin Dinajpur and Hoogly
Source: Calculated by Authors			

Productivity Regions – Based on Oilseed Crops Yield Index

Oilseed crops occupy 670.7 thousand hectares (7.59 per cent) of cropped area of the study region. Productivity regions of oilseeds are shown in (Fig. 3). The high productivity area covers an area of 77.8 thousand hectares with crop indices above 105, which includes the districts of North-24 Parganas, South-24 Parganas and Purba Medinipur. There are ten districts namely, Uttar Dinajpur, Dakshin Dinajpur, Malda, Murshidabad, Nadia, Howrah, Hoogly, Burdwan, Birbhum and Paschim Medinipur covering an area of 527.9 thousand hectares with crop indices ranging between 79 to 105. The remaining five districts namely, Darjeeling, Jalpaiguri, Cooch Behar, Bankura and Purulia showing low concentration of oilseeds. Altogether they cover an area of 64.2 thousand hectares with crop indices below 79.

Table 3

Productivity Regions under Oilseed Crops in West Bengal (2010-2011)			
Category	Index Range	No. of Dist.	Name of the Districts
High	Above 105	3	North 24 Parganas, South 24 Parganas and Purba Medinipur
Medium	79-105	10	Uttar Dinajpur, Dakshin Dinajpur, Malda, Murshidabad, Nadia, Howrah, Hoogly, Burdwan, Birbhum and Paschim Medinipur
Low	Below 79	5	Darjeeling, Jalpaiguri, Cooch Behar, Bankura and Purulia
Source: Calculated by Authors			

Figure 3: Oilseed and Cash Crops Production in West Bengal**Table 4**

Productivity Regions under Cash Crops in West Bengal (2010-2011)			
Category	Index Range	No. of Dist.	Name of the Districts
High	Above 105	6	North 24 Parganas, Howrah, Hoogly, Burdwan, Bankura and Paschim Medinipur
Medium	82-105	7	Uttar Dinajpur, Dakshin Dinajpur, Malda, Murshidabad, Nadia, Birbhum and Purba Medinipur
Low	Below 82	5	Darjeeling, Jalpaiguri, Cooch Behar, South 24 Parganas and Purulia.

Source: Calculated by Authors

Productivity Regions – Based on Cash Crops Yield Index

Among cash crops, jute, sugarcane and potatoes account for an area of 1127.4 thousand hectares (12.76 per cent) of the total cropped area of the region. Productivity regions of cash crops are shown in (Fig. 3). The high productivity region of cash crops occupies an area of 366.0 thousand hectares with crop indices above 105. It includes the districts of North-24 Parganas, Howrah, Hoogly, Burdwan, Bankura and Paschim Medinipur. Medium productivity region extends over seven districts namely, Uttar Dinajpur, Dakshin Dinajpur, Malda, Murshidabad, Nadia, Birbhum and Purba Medinipur covers an area of 441.8 thousand hectares with crop indices ranging between 82 to 105. But the low productivity region covers extensive area in northern, western and southern part of the study region; it includes the districts of Darjeeling, Jalpaiguri, Cooch Behar, South 24 Parganas and Purulia covering an area of 197.6 thousand hectares. Here the crop productivity index is below 82.

Productivity Region - Based on Composite Yield Index

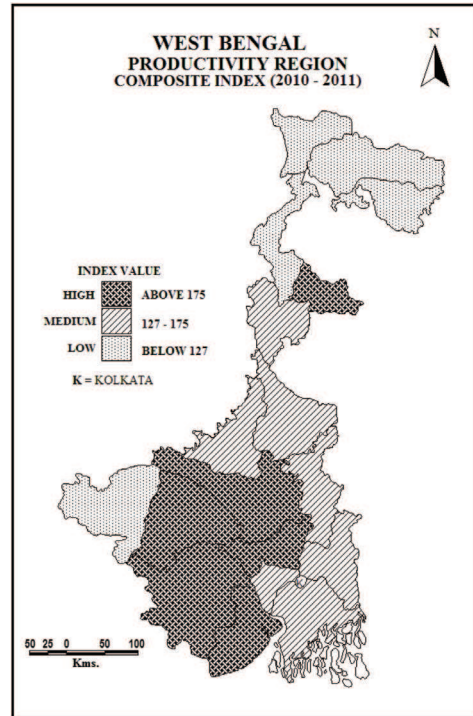
A composite index has been formulated after calculating agricultural productivity for each group of crops in West Bengal. The value of each districts are given in the Table 5 and their spatial patterns are shown in the (Fig. 4).

Table 5

Productivity Regions based on Composite Index in West Bengal (2010-2011)			
Category	Index Range	No. of Dist.	Name of the Districts
High	Above 175	6	Dakshin Dinajpur, Burdwan, Bankura, Hoogly, Paschim Medinipur and Purba Medinipur
Medium	127-175	7	Malda, Murshidabad, Birbhum, Nadia, North 24 Parganas, South 24 Parganas and Howrah
Low	Below 127	5	Darjeeling, Jalpaiguri, Uttar Dinajpur and Purulia
Source: Calculated by Authors			

It will be seen from this figure that six districts namely, Dakshin Dinajpur, Burdwan, Bankura, Hoogly, Paschim Medinipur and Purba Medinipur are of high productivity region. It lies in the south-western and southern part of the study region. The productivity indices is above 175, it covers an area of 3360.60 thousand hectares or 38.06 per cent of the total cropped area of the study region. The medium productivity region is scattered over 7 districts namely, Malda, Murshidabad, Birbhum, Nadia, North 24 Parganas, South 24 Parganas and Howrah. They spread over north-central, central and south-western part of West Bengal, with productivity indices ranging between 127 to 175. Altogether they cover an area of 5269.3 thousand hectares or 39.80 per cent of the total cropped area. The low category of agricultural productivity occupies the remaining 5 districts namely, Darjeeling, Jalpaiguri, Uttar Dinajpur and Purulia extended over northern and western part of the region. They together occupy an area of 1953.93 thousand hectares or 22.14 per cent of the total cropped area of the entire region.

Figure 4



Conclusion

On the basis of productivity indices it is seen that there is diversity in the agricultural productivity. During 2010-11, the high level of agricultural productivity lies in northern, south-western part and south-central part of the study region. The state of West Bengal reflects a wide variation in agro-climatic specifics. From hilly tracts of Darjeeling to coastal South and North 24 Parganas diversified climatic and soil quality is observed across the state. Districts such as Jalpaiguri, Cooch Behar and Uttar Dinajpur come under Terai region while Purulia, Bankura, Birbhum and parts of Paschim Medinipur signify semi arid Red and Laterite zone. On the other hand the districts situated in the gangetic plain and having benefit of alluvial soil are Malda, Murshidabad, Nadia, Burdwan, Howrah, Hoogly and parts of Purba Medinipur. Large share of net sown area, high irrigation and cropping intensity, high productivity, high consumption of fertilizers, fertile soil and better agricultural technology are factors responsible for the high levels of agricultural productivity in the high productivity districts of the state. The agrarian sector of West Bengal exhibits an overwhelming predominance of small and marginal farmers who have little to invest for improved agriculture. In view of the rising prices of chemical fertilizers and pesticides a subsidy may be addressed to this section of farmers. Proper marketing channel is a problem that bothers the farmers of all regions. Particularly for the cash crops like Jute and Potato it remains essential. Potato is a quickly perishable product without a proper storage facility. The cold storages in most of the cases in rural West Bengal have developed under the auspices of private sector and the market being controlled by the merchants. Government intervention to provide warehousing and marketing facility is call of the hour. The village Panchayats can assume an important role in this context. Moreover, farmers must be properly educated and trained through extension services that taught them how to use the modern agricultural inputs for increasing the productivity.

References

- Chatterji, A. and Maitrya, P. 1964. 'Some Aspects of regional variations in Agricultural Productivity and Development in West Bengal', *Indian Journal of Agricultural Economics*, 19 (1): 207-212
- Kendall, M. G. 1939. 'The Geographical distribution of crop productivity in England', *Journal of the Royal Statistical Society*, 52: 21-48
- Khusro, A. M. 1965. 'Measurement of productivity at Macro and Micro levels', *Journal of the Indian Society of Agricultural Statistics*, 27 (2): 278-288
- Mohammad, N. and Singh, R. 1981. 'Measurement of crop productivity', in Noor Mohammad (ed.), *Perspective in Agricultural Geography*, Concept Publishing Company, New Delhi, 4.
- Munir, A. 1992. 'Agricultural Productivity and Regional Development', in Noor Mohammad (ed.), *New dimension in Agricultural Geography*, Concept Publishing Company, New Delhi, 8: 85-102
- Stamp, L.D. 1958. 'The Measurement of land resource', *The Geographical Review*, 48 (1): 3
- Shafi, M. 1960. 'Measurement of Agricultural efficiency in U.P.', *Economic Geography*, 36(4):296- 305
- Shafi, M. 1965. 'Approaches to the Measurement of Agricultural Efficiency', *Proceedings of the Summer School in Geography (Memeo)*, Nainital.
- Shafi, M. 1967. 'Food Production Efficiency and Nutrition in India', *The Geographer*, 4: 23- 27
- Shafi, M. 1969. 'Can Indian Support Five Times her Population?', *Science Today*, 3.
- Shafi, M. 1972. 'Measurement of Agricultural productivity of Great Plains of India', *The Geographer*, 9: 4-31
- Shafi, M. 1984. 'Measurement of Agricultural productivity and Regional Imbalances', Concept Publishing Company, New Delhi:148.
- Siddiqui, S. H. 1984. 'Regional Analysis of Agricultural productivity in Bihar', *The Geographer*, 31(1):77-85.
- Siddiqui, S.H. & et.al 1999. 'Pattern of Agricultural Productivity in Bihar', *The Geographer*, 46(1):107-117.

- Siddiqui, S.H. & et.al 2003. 'Levels of Agricultural Productivity in East and West Champaran Districts of Bihar', *The Geographer*, 50(2):56-65
- Sinha, B.N. 1968. 'Agricultural Efficiency in India', *The Geographer*, Special Number, 21:101-117.
- Singh, J. 1972. 'A New Technique for Measuring Agricultural Efficiency in Haryana', *The Geographer*, 19 (1): 14-33.
- Thompson, R. J. 1926. 'The productivity of British and Danish Farming', *Journal of the Royal Statistical Society*, 89, (2):218.
- Yang, W. Y. 1965. 'Methods of Farm Management investment for Improving Farm Productivity', F.A.O., Agricultural development, Paper No. 80, Rome.
- Zobel, S. P. 1984. 'On the Measurement of Productivity of Labour', *Journal of American Statistical Society*, 45: 218.

Declining Sex Ratio in Sikkim: A Spatial Analysis

JAYASHREE DEY*

Abstract

The overall sex ratio nationwide (number of females per 1000 males) in 2011 census has improved by seven percentage points to 940 against 933 in census of 2001. This is the highest sex ratio at the national level since the census of 1971 and a shade lower than 1961. According to census 2011, the sex ratio in Sikkim is 889 females per 1000 males, which is much lower than the national average. In socio-economic front, the women in Sikkim are generally not secluded and the instances of female infanticide have not been officially reported in the state. The paper examines the causes of decline of sex ratio based on some empirical data.

Keywords: Sex ratio, National Family Health Survey (NFHS), Age- Sex structure, Infant Mortality, Maternal Mortality, Migration.

Introduction

The sex composition is considered as one of the significant demographic social indicators for measuring the status of male and female in a society. The sex composition of a population is often measured in terms of sex ratio. In India the sex ratio is calculated in terms of number of females per thousand males. It is a broad indicator which reveals the ground realities that exist in the fabric of the society. Present sex composition determines the future vital events such as marriage rate, age structure, labour force, births and deaths. In many societies the present sex ratio is skewed due to a host of factors such as early marriage, age of mother at birth, sex selective abortion, infanticide, infant mortality, maternal mortality, health hazards of women and migration. In the recent decade there has been a drastic decline in sex ratio in Sikkim which is an issue of grave concern. The social position of the women in the state seems to be better than that in the rest of the country. Women also play a major

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role which is visible in every public sphere whether in government jobs or in trading activities, which allows them to participate in decision-making far more than in most other States in India. This reflects the autonomy of women in Sikkim. Women are not secluded, while instances of infanticide or dowry-related deaths have not been reported (Sikkim Human Development Report, 2001). Hence this paper tries to reveal the reason for such a low sex ratio in the state.

Study area

The present study area is Sikkim. Sikkim a beautiful state nested in the Himalayas has a total area of 7096 sq. km. Completely landlocked and crisscrossed by green valleys, high peaks, and rippling rivers, decorated by a spectacular array of the most exotic and colorful orchids, Sikkim is referred to as nye-ma-el (heaven) by the Lepchas, which means 'new palace' in Nepali, and denzong (land of rice) by the Bhutias. It lies in the north-eastern Himalayas, between 27°04'46" to 28°07'48" North latitude and 80°00'58" to 88°55'25" East longitude. It is bound on the north by China (Tibet plateau), on the east by Chumbi Valley of Tibet and Bhutan, on the west by Nepal and on the south by Darjeeling district of West Bengal. The present population of Sikkim according to 2011 census is estimated to be 607,688.

Objective

The present paper aims to examine the causes for the declining sex ratio in Sikkim.

Methodology

The study is confined to empirical research based on secondary data such as Census of India, National Family Health Survey (NFHS-3) 2005-06 of Sikkim, Sample Registration System Bulletin, 2011, Reproductive and child health-District Level Household survey (DLHS-2), Sikkim, 2002-04, Sikkim Human Development Report, 2001. On the basis of tables diagrams have been prepared.

Trends of sex ratio in Sikkim

The demographic trend in Sikkim of 2011 census has revealed that the sex ratio in Sikkim stands at 889 females per thousand males as against 940 at national level (2011 census). As per 2011 census women constitutes 47 % of the total state population. From 1961 onwards it went on decreasing till

1981 and thereafter from 1991 it increased and reached 889 females per thousand males in 2011 which is unsatisfactory for the state.

Table: 1

Sex Ratio of Sikkim: 1961- 2011							
Sl. No.	Districts/ State	Sex Ratio (Number of females per 1000 males)					
		1961	1971	1981	1991	2001	2011
1	North district	888	853	789	828	752	769
2	West district	N.A	937	906	915	929	941
3	South district	917	909	854	892	927	914
4	East district	884	791	797	859	844	872
5	Sikkim	904	863	835	878	875	889

Source: Census of India 2011, Provisional Population Total, Paper 1 of 2011, Sikkim Series12.

The sex ratio for Sikkim district wise is available from the year 1961 (table 1). The west district has the highest sex ratio among all the districts from the year 1961-2011. In 2011 census the west district's sex ratio was 941, slightly more than the national average of 940, whereas all other districts have a low sex ratio with north district recording the lowest.

Distribution of Sex Ratio by Age Group

The issue of sex ratio has been quite intriguing in Sikkim. According to 2011 census of Sikkim, the proportion of males is greater than females in all age groups. The female population is highest in the 0-4 and 5-14 age groups (Table 2). This implies that the people in the state do not practice ill practices like female foeticide and female infanticide is also less. There is a strong respect for the girls in the state. One finds a drastic fall in the female population in the 30-34 age group and it continues till 55-59 age group. It again improves steadily for the 60-69 age group but starts drooping from 70-74 age groups (Table 2). One possible strong reason for such a behavior of sex ratio in the different age groups could be that the mortality rate among the females in the age group 30-59 is relatively much higher than the 0-29 and 60 plus age group (Sikkim Human Development Report, 2001). In fact, the mortality rate among the females becomes much sharper as they climb the age ladder between 30-59 years. The government officials of the state are of the opinion that adverse sex ratio is due to high maternal mortality. The steady

improvement in the sex ratio in the 60 plus age group points to the fact that women who survives in the 30-59 years mortality zone tend to have a similar life span as that of men, having good health and a much higher longevity (Sikkim Human Development Report, 2001).

Table: 2

Age groups	Persons	Males (%)	Females (%)
0-4	52269	51.25	48.74
5-9	64970	50.26	49.74
10-14	71668	50.95	49.05
15-19	63444	51.45	48.55
20-24	55171	53.59	46.41
25-29	47552	52.50	47.50
30-34	39153	55.30	44.70
35-39	36384	56.02	43.98
40-44	28129	57.64	42.36
45-49	22177	57.86	42.14
50-54	16919	57.75	42.25
55-59	12037	58.74	41.26
60-64	10469	55.52	44.48
65-69	7593	55.97	44.03
70-74	5523	58.54	41.46
75-79	2749	56.46	43.54
80+	2706	57.06	42.94
Age not stated	1938	53.77	46.23
All ages	540851	53.34	46.66

Source: Rural Urban Distribution of Population, Director of Census Operation, Sikkim, 2011. (Male and female % has been calculated by the author from the original data).

Cause of low sex ratio in Sikkim

The adverse sex ratio in different age groups is due to a host of factors like early marriage(Sikkim Human development Report, 2001), lack of attitude towards maternal care, health hazard, and migration.

a) Impact of Early Marriage: The persistence of early marriage reinforces women's low status and social isolation, and such marriages almost forces girls to prematurely end their education and to assume household responsibilities. At the heart of early marriage in Sikkim, is the system of

socially sanctioned elopement (bhagaune pratha) (Government of Sikkim 2001, 35). Bhagaune pratha allows a boy and a girl from different castes and social background to elope. After three days of living together, the boy's family goes to the house of the girl to inform them of the whereabouts and wellbeing of the girl and thereafter the marriage is formalized. In traditional marriage ceremonies the high levels of expenditure which have to be incurred have also helped to give a authorization or consent to bhagaune pratha. Young boys and girls who want to avoid going to school or take up any family responsibility have increasingly stated this practice of elopement for the last few decades.

Since NFHS-2 the percentage of women in Sikkim aged 20-24 married by age 18 has increased. As per NFHS-3 the women age 20-24 married by age 18 is 30 % and 24% of men age of 25-29 years got married by the legal minimum age at 21. Early marriage usually leads directly to child bearing, given pressure largely exerted by mother-in-laws through their sons, for a young bride to have a baby relatively quickly. This quite often results in maternal mortality because the young mothers are unhealthy, immature and are more likely to experience complications during pregnancy and child birth which decreases the sex ratio. The median age at first birth for women aged 25-49 years is 21.9 in Sikkim. Early motherhood is linked to poor maternal health outcomes, these increase the likelihood of poor infant and child health outcomes and also increases the maternal mortality rates. Young girls in Sikkim are more likely to have children with low birth weight, inadequate nutrition and anaemia. There is an increased likelihood of neonatal death, still birth as well as child and infant mortality.

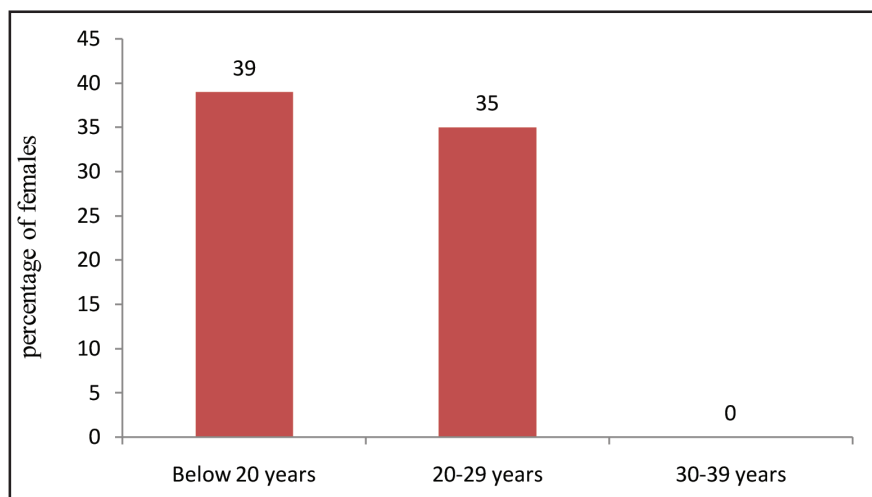
b) Short spacing of birth interval: Birth interval is the length of time between two successive live births. Researchers have shown that waiting at least three years between children reduces the risk of infant and maternal mortality. 53% of non first order births occur within three years of the previous birth, including 7% of the births that take place within eighteen months of the previous birth and 20% takes place within twenty four months (NFHS-3). This short spacing of birth interval between children in Sikkim had increased odds of neonatal, under-five mortality and maternal mortality.

c) Maternal Mortality Rate: High maternal mortality rate is an acute problem of Sikkim's women. There is very little work done on maternal mortality in the state. In Sikkim, women have a high risk of deaths during

pregnancy and childbirth. Early marriage, poor health services, high fertility rate, low spacing of births, son preference are the main causes of the high Maternal Mortality rate and the major reason for the low female life expectancy in Sikkim.

d) Infant and Child Mortality: Death rates in girl child are in no way different from the boys. In other words, there have been no sex differences in mortality among children which reflects that the state do not practice social evils like infanticide. The infant mortality rate is currently estimated at 34 deaths before the age of 1 year per 1000 live births, where the infant mortality rate for males is 35 and for females is 33 (Sample Registration System Bulletin, January 2011).

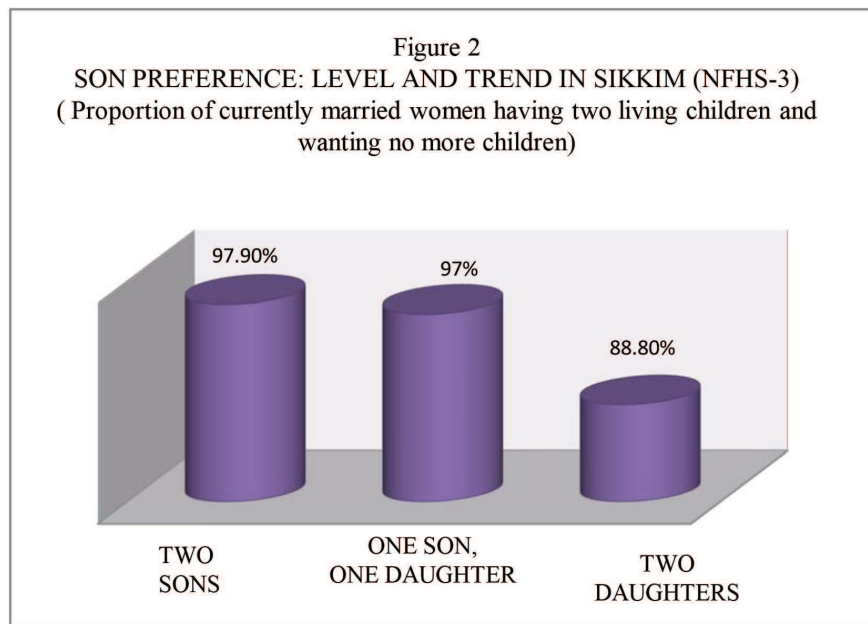
Figure 1: Infant mortality rate by mothers' age at birth 2005-06, NFHS-3



Girls in Sikkim have a lower mortality risk (19.9) than boys (25.2) during the neonatal period, but a slightly higher mortality risk (13.1) than boys (12.1) during the post neonatal period (NFHS-3) due to lack of proper neonatal care which decreases the sex ratio. The child mortality rate (at ages 1-4 years) is same for girls and boys (7.1 for boys and 7.0 for girls-NFHS-3).

Children born to teenage mothers have a slightly higher risk of dying in the first year of life (39 %) than children born to mothers in their twenties (35%) (NFHS-3).

e) Fertility Preferences: Though a women in Sikkim will have an average of only 2.02 children (NFHS-3) in her lifetime which is lower than the national average, where fertility is below replacement level, but there is some evidence of son preference in Sikkim(NFHS-3 page-7). Some families still have the traditional mindset to have a male child. 16% of women and 17% of men want more sons than daughters (NFHS-3) but only 4 to 6% of men and women want more daughters than sons. However, 72% of women and 80% of men would like to have at least one son, whereas 67% of women and 73% of men would like to have at least one daughter (NFHS-3). This preference of son over daughter reflects their choice, that there is a social demand for a son but some imperceptible changes in the people’s perception regarding daughters is also taking place.



f) Lack of Attention towards Maternal Care

Maternal health is the health of women during pregnancy, childbirth and the postpartum period. The enabling environment for safe motherhood and childbirth depends on the care and attention provided to pregnant women and newborns by communities and families, the acumen of skilled health personnel and the availability of adequate health care facilities, equipment

and medicines and emergency care when needed. The health of mothers and newborns is intricately related. These include such as antenatal care, skilled attendance at birth, adequate nutrition, post-partum care, new born care.

According to NFHS-3 a high level antenatal care is received by the women in Sikkim from a health professional (64% from a doctor and 26% from any other health professional). With the rise in the level of education and standard of living it determines the increasing proportion of antenatal checkups of women from a doctor. According to RCH DLHS-2 survey it was common to find women below 35 years of age with antenatal checkups. But a large proportion of birth (52.5%) according to NFHS-3 is taking place at home. Also RHC DLHS-2 survey found 41% of delivery is taking place at home. This increase the risk of maternal mortality in the age groups 30-39 years and hence the cause of low sex ratio. During the RHC DLHS-2 survey it was found that 45% of the women stated that it was not necessary to deliver in the health institutions. Other than these factors the reason stated for not going to health institutions were its cost (3%), lack of transportation or remoteness of health facility (7%) shortage of time to visit (15%), batter care at home(18%),no permission from family(less than 1%),3 percent of people had no knowledge regarding the delivery facility. Only 48.5% (NFHS 3) of mother received a post natal care from a doctor/ nurse/ ANM/ other health personnel within 2days of delivery for their last birth. The post natal period is a critical period to the health and survival of a mother and her newborn. 51.5% of women do not receive post natal care which increases maternal deaths due to haemorrhage, sepsis, infection, retain placenta. This decreases the sex ratio in Sikkim considerably. Also majority of the deaths new born are due to low birth weight or premature deliveries who do not receive proper post natal care and attention.

This prompts the question of why majority of women do not use post natal care despite the fact many consider it necessary. The most frequent reason for not obtaining post natal care was that women did not feel sick and therefore they did not need post natal care, followed by not having told by doctor to come back for post natal care. Fewer women were not aware of the service availability, had no one to take care of the children or stated having experience with previous deliveries and therefore not needing additional information.

g) Health Hazard

1) Anaemia: Women and children in Sikkim are prone to anaemia which is the major health problem. This is due to nutritional deficiency, where 31.4% of girls in Sikkim have mild anaemia, 27.4% have mild anaemia (NFHS-3) which has resulted in child mortality (girls), diminished physical and mental capacity, impaired cognitive performance, motor development and scholastic achievement.

Three-fifths of women in Sikkim have anaemia, including 42% with mild anaemia, 16% with moderate anaemia and 2% with severe anaemia (NFHS-3). Anaemia is particularly high among younger and pregnant women. 53% of pregnant women in the age group of 15-49 years have anaemia and 46.8% of ever married women in the age group of 15-49 years are anaemic compared to ever married men age 15-49 years where only 18.1% are anaemic. Prevalence of anaemia among pregnant women leads to maternal mortality leading to an unfavourable low sex ratio in Sikkim. Prenatal mortality, premature delivery, low birth weight of the child is more common to the women who are anaemic.

2) Tuberculosis: Tuberculosis is the most important infections causes of adult deaths after HIV/AIDS in low and middle income countries (Laxminarayan et al., 2007). Tuberculosis is the major health problem in the state of Sikkim. However in Sikkim somehow the problem seems to be increasing day by day and it has reached frightening proportions. Tuberculosis takes a disproportionately larger toll among young females, with more than 50% of cases occurring amongst females less than middle age group (Singh, 2014). Hill people do tend to be more prone to tuberculosis as compared to those in the plains (Sikkim Human Development Report, 2001, page -25). People here have a bad habit of spitting here and there. This helps the spread of bacteria especially in a cold climate. The prevalence rate of tuberculosis in Sikkim is high and women are likely to fall prey to this disease. 531 women per 100000 persons (NFHS-3) have tuberculosis in Sikkim. Women in households that use solid fuels (wood, peat, coal) for cooking (783/100000 persons) are more prone to TB than women using other fuel (389/100000 persons).

There have been an increase in the mortality rate due to a steady growth of drug resistant strains of TB. Some of the major causes behind the widespread prevalence of the disease may also be the hostile geographical location of the state, low level of awareness, poor living condition including

malnutrition, improper housing and sanitation, consumption of more liquor and less of nutritious food, eating of half cooked and uncooked meat by the hill tribes, and lack of commitment on the part of the medical practitioners. Clearly, the challenge of TB needs to be addressed on a priority basis, through both improved awareness and patient literacy as also greater resource allocation.

h) Migration: Migration is one of the most important factors which determine the sex ratio of a state. In-migration into Sikkim has become more conspicuous after Sikkim's integration with the Indian Union in 1975 and allocation of large amount of resources for developmental purposes. In Sikkim, the highest decline in the sex ratio was recorded in 1971-81 which coincides with the huge influx of male migrant workers. According to the Census data on migration, which primarily covers migration by place of birth and last residence, between 1971 and 1981 Sikkim recorded a very high level of in-migration (35 per cent). The proportion of male in-migrants has always been higher than that of women, although between 1981 and 1991 a decline was recorded (moving from 61 per cent in 1981 to 57 per cent in 1991).

Conclusion

The findings of the paper reveal that the reasons for the declining sex ratio in Sikkim are very different from what we see in the mainland India. Female foeticide, which is considered as the most important factor for unbalanced sex ratio in the rest of India, has no relevance to Sikkim, where there is no prejudice against girl child. Here work load coupled with early marriages, loss of appetite, low nutrition intake, lack of attitude towards maternal care and tendency of women to serve their husband and children and having the leftover food are adding up to their poor health status of the women, and consequently leading to increased female mortality rate. Maternal mortality is high in Sikkim given the amount of work drudgery whether as cultivators or in the tertiary sector, Women suffer from anaemia and tuberculosis, which also affect the sex ratio of the state. Immigration of male workers has also been a contributing factor for lower sex ratio.

All these issues that contribute to low health status of women needs to be seriously analyzed with a bottom-up-approach. There is an urgent need to understand the role and linkages between women, health, education and optimum development for a favourable sex ratio.

References

- Census of India.2011.Provisional Population Total, Sikkim series 12, Paper 1.
- Director of Census Operation, Rural Urban Distribution of Population, Paper 2, Volume 2, Sikkim. 2011.
- Diyali, C.'A Situation Analysis of Women and Girls in Sikkim', National Commission for Women, New Delhi: 15-18.
- Government of India.2008.National Family Health Survey-3, 2005-06, Sikkim: 6-95.
- Government of India. Reproductive and Child Health, District level Household Survey, 2002-04, Sikkim: 50, 65, 70.
- Lama, M.P.2001.Sikkim Human Development Report-2001.Government of Sikkim, Social Science Press, Delhi: 11-12, 25, 35.
- Mitra, A. and Murayama, M.2008.'Rural to Urban Migration: A District level analysis of India', IDE Discussion paper No.137, Academic Research Repository at the Institute of Development Economics.
- National Sample Survey Office.2001.Press Note on Migration in India, 2007-08. Government of India.
- Planning Commission.2001. Sikkim Development Report, 2001, Government of India, Academic Foundation, New Delhi: 89-91, 97-98.
- Ramaiah,G.J.,Chandrasekharayya,T. and Murthy,P.V.2011. 'Declining child sex ratio in India: Trends, Issues and Concerns, Asia-Pacific Journal of Social Sciences, Vol.III (1), Jan-June 2001:183-198.
- Registrar General of India.2011.SRS Bulletin, Sample Registration System, India, Vol.45 No.1:5.
- Shankar,B.2011.'Rural Urban Distribution of Population', Director of Census Operation, Sikkim Series 12,paper 2,Volume 2,Sikkim.
- Government of Sikkim. 2001. Sikkim Human Development Report. chapter-2, page 35 box 2.9.
- Subba, J.R.2011.History, Culture and Customs of Sikkim, Gyan Publishing House, New Delhi: 93.

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The Gandhian Movement and Railway Workers in Bihar: A Case Study of the Workers of Jamalpur Railway Workshop (1919-1930)

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Abstract

The present paper tries to understand the political and ideological undercurrents of the railway workers movement of Jamalpur railway workshop which gradually unfolded in the opening decades of twentieth century. It further focuses on intensity dimension entwining of Gandhian ideology and techniques with the workers movement which was evident during the Non-Cooperation and Civil Disobedience Movement in the vicinity of Jamalpur Railway Workshop.

Keywords: Jamalpur, Railway Workshop, Workers, Strike and Gandhi.

Introduction

Jamalpur Railway Workshop, India's first locomotive workshop, was set up on February 8, 1862 by East Indian Railway. Lying at a distance of 6-7 miles from the town of Monghyr (also written as Munger, generally after the Independence) in the province of Bihar, it became the principal workshop on the East Indian Railway Line (EARL). In 1926, L.S.S. O' Malley described Jamalpur as a town which is picturesquely situated at the foot of Kharagpur hills and which owes its development to its being the headquarters of the Mechanical Department of East Indian Railway.¹

In the same year, the Chairman of State Railways Workshop Committee, Vincent L. Raven, described Jamalpur Locomotive Workshops as the 'biggest in India, and so far as state railways are concerned, the most important'. The adjacent of Monghyr was known for years as 'Birmingham of the East', and it was conceived as source of supply of skilled mechanics.² Jamalpur became a focal point in attracting labour from nearby areas. The East Indian Railway Authorities provided free conveyance to and from their

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homes to the workers employed in the workshops. In 1896-97 three 'coolies trains' were started to bring in the labourers from outline areas of Jamalpur. These trains operated between Jamalpur and Kajra (19 miles), Sultanganj and Monghyr (6 miles).³

I

Shashi Bhushan Upadhyay in his essay 'Indian Labour History: A Historiographic Survey'⁴ presents an eloquent survey of the major trends in historical writings on Indian labour. He divides these writings into three overlapping phases. According to him, the first phase of labour history in India began in the late colonial period. The second phase starts with the turn of Independence and continues till the mid-1970s. During this phase, Marxist-nationalist trends became prominent. The beginning of the third phase can be traced to the late 1970s and early 1980s. During this phase, historians re-examined the basic premises of the work on labour history that preceded them and added fresh dimensions.

Upadhyay further suggests that during the colonial period various commissions of enquiry were instituted to study the conditions of workers as well as the official reports and writings of colonial officers enriched the literature on the Indian labour. This discourse which sought to espouse the cause of the colonial regime through recommendations aimed at regulating workers' movement was challenged and countered by liberal nationalist writings. But, the latter could not correct the basic premises of the colonial discourse whose major proponents include Kydd, Broughton, and Gilchrist.⁵

The Marxist writings on Indian labour movement started with the turn of Independence in the 1950s but took a more mature form in the 1970s. These works did not see the workers as different entities but saw them as constituting a particular class of international character. They proposed with teleology of progression which entailed the development of 'class consciousness' into a full-fledged class conflict with colonialism as well as capitalism. Some of these writers include R.P. Dutt whose book with a chapter on the working class in India was published in England in 1940 called *India Today* and A.R. Desai whose work *Social Background of Indian Nationalism*, Bombay 1948 traced the relationship between nationalism and the working class.

Since the late 1980s, we find writings which, according to Upadhyay, constitute 'new' labour history. These new writers not only challenged the

colonial discourse on labour history in new ways but also questioned some of the fundamental premises of Marxist labour history. The latter even questioned whether the workers in India constitute a class. Upadhyay points out that S. Bhattacharya, for example, has proposed that a closer category would be 'labouring poor'.⁶ Similar attempts to highlight socio-cultural and environmental aspects in the labour movement of India have been made in the writings of Dipesh Chakrabarty, Gyan Prakash, Rajnarayan Chandavarkar and others.⁷

As suggested earlier, this paper marks a radical departure in the historiography of labour movement in India because it links the labour movement, particularly of the railway workers in Jamalpur to the Gandhian whirlwind sweeping the country during the colonial time. Gandhi's role in the Champaran's Peasant Movement is well known and well researched. Gandhian connection with the Jamalpur Railway Workers is an unexplored area of study. It shall be in fitness to add here that labours of this Workshop responded to Gandhian call of Non-cooperation and Civil Disobedience Movement in the years 1919 and 1930 respectively. In this background of approaches to study the labour movement the paper moves to discuss the various factors of the Jamalpur strike in the subsequent sections and the Gandhian influence.

II

Being the India's first locomotive workshop the development of the Jamalpur Railway Workshop was phenomenal. The Industrial Commission of 1916-18 reported that the shops of East Indian Railway at Jamalpur were topping the list at 11,000 employees.⁸ The Commissioner also noted that the foremen and the superior establishment in the workshops were primarily European or Eurasian thus highlighting the well known racial divide present throughout much of the railway workshop.⁹ The British railways in colonial India had a twofold contradictory identity, to the British they were a symbol of the Raj but to the Indian mind they had come to signify its opposite - the colonial reality, its exploitation, humiliation and the imperial arrogance of the 'ferenghi'.¹⁰ By 1919 the native workmen had come to be alienated from their work by the tensions created due to the racial discrimination in the labour process. As the superior grades of railway workmen were whites, it was left to the 'peripheral' categories of Indian railwaymen – the drivers and guards of goods trains, unimportant station masters of the small stations, the 'native' firemen travelling a lifetime on a British train in the

shadow of a 'ferenghi' driver, the signallers and the workshop men – to assert rights through various forms of popular protests.¹¹

The First Organised Strike-1919-1920

A novel phenomenon of the post First World War railwaymen's agitation was the strike of workshop men all over India. Mahesh Kumar Mast defines this period 1919-21 as 'the period of genesis of the railway labour movement, because the period saw the birth of strong, well-built unions in the Indian railways'.¹² The Jamalpur Railway Workshop strike started on 2nd December 1919 and since then the shop had been closed. The strike originated with lower paid employees. On the 27th November 1919, a few notices written in Kaithi (a local script of Bihar) were found pasted on the walls of workshop. These notices purported to show that the men were dissatisfied with their pay condition and grievances regarding Sunday labour. On 5th December, 1919 a notice signed by works manager were found pasted on Keshopur gate of the workshop in which the strikers were urged by the Loco Superintendent to return to the work. In response of this the workers also pasted a notice on Dariapur Flagman's gumti of the workshop and repeated their demand. The works manager did not consider it.¹³

The SP Monghyr wrote to Deputy Inspector General of Police on 9th December 1919 that he received an information regarding a mass meeting of the strikers to be held on next day. Workers were planning to take the services of a Barrister or Vakil to represent their case and it was also desirable to invoke the services of Messrs. Gandhi and C.R. Das.¹⁴ Initially the workers started the strike themselves. The 10th December meeting, which was attended by at least two thousand men, brought in the first instance of outside mediation in the form of a low caste Rajput named Bhagwan Singh, who was not a Railway Workshop employee but a co-villager of many workers. According to police report, this leader was from the same socio-economic background as the striking workers: 'he was literate only in Hindi'. The demands put forward by the workers were 50% increase of pay, wages for overtime and concession of free family passes as given to clerks, removal of the power of dismissal the Sergeants and kept by the Locomotive Superintendent, ten delegates to be chosen to represent workers' claims to the Agent and the District Magistrate, to act in conformity with the advice given by the ten men selected, none to resume work until their case had been favourably decided and a Barrister/vakil to

be briefed with the sum subscribed. The last five points listed here bring out the desire of workers to organise themselves.¹⁵ The management in the meantime maintained their usual instance of maintaining their authority by insisting that 'grievances cannot be discussed till the men actually return to work'.¹⁶

On 12th December some of the leading workmen submitted a letter to the Secretary, Peoples' Association, Monghyr, putting forth all their grievances and requesting the help of association in bringing about an amicable settlement between the strikers and Railway authorities. In consideration of the interests of a large number of people of the district the secretary took immediate action on that letter and sent telegrams, to the Lieutenant Governor, President Railway board and the agent East Indian Railway reporting the main features of the strike and the demands of the workmen and requesting their intervention in the matter. The secretary also wrote letters, one to Mr. Tomes, the Loco Superintendent and another to Mr. Walker, the manager offering services of the Association for bringing about a speedy settlement with the strikers. Mr. Tomes asked the Association to advise the men to resume work and then put forward their grievances. Babu Murlidhar, B.L. Secretary of the Association wrote a letter to the District Magistrate and Collector informing him of the critical situation as also of the attitude of the local Railway authority and requesting his intervention in the matter. An interview was fixed with Mr. S.M. Zobair Bar at law, Babu Srikrishna Prasad B.A., a member of the District and Municipal Board and the Secretary Babu Murlidhar, B. L., a Municipal Commissioner with District Magistrate as representatives of the Association. After the interview it appeared that the railway authorities were not inclined to grant 50 percent increases of pay which was the main and substantial demand of the strikers, but that the Railway authorities were willing to consider the other demands which of course, appeared reasonable provided the strikers resumed work. The 17th December Report said that the men tried to contact one of the leading lawyers of Monghyr but he refused to take their case. Following this, a lawyer from Allahabad was asked to take up the matter.

III

The Gandhian Connection

It can be assumed that after success of Champaran Satyagraha in 1917 Gandhi had become a popular figure in Bihar and it was quiet natural

that any agitation against the colonial state would try to seek the support of Gandhi to their cause. Given this context, it is easy to understand the invitation given to Gandhi by Jamalpur Railway Workers to lead their agitation against the Workshop management. The District Magistrate of Monghyr also noted that 'a wire was sent to Mahatma Gandhi to come and help the men, but he regretted and said that he could not come.' In the following meeting held on 27th December, the workers reiterated their decision not to return to work. The workers again met on 1st January. The repeated calls to remain united and not to join work suggest that the feeling amongst the workers to get back to work was growing stronger.¹⁹ One Habib Mia who addressed the meeting accused the previous representatives for not 'doing anything' to achieve the demands. He exhorted the workers to form a proper association for an organised representation, of which he was selected the secretary on the spot. He again assured the workers about Gandhi's visit. He claimed to have sent no less than five telegrams to Gandhi and two to C.R. Das for their help. Habib had sent Rs. 40 to Gandhi on 6th January for his expenses and pleaded with him to come immediately to Jamalpur. The next day Gandhi had replied expressing his inability to come to Jamalpur, and asked the workers in turn to send a representative to explain the situation. On 27th December, Tajeshwar Prasad, a pleader of Monghyr wired to the private Secretary of the Lieutenant Governor to intervene in the matter as 'local authorities are still unsympathetic'. On 16th January, Habib submitted a memorial to the Lieutenant Governor of Bihar and Orissa, mostly reiterating the earlier demands. However, the workers had started returning to work before 16th January. On the 12th, over 5000 workers had resumed work and by the 16th, the whole strength of approximately 16,300 of the workers also joined the work. Thus one and a half month long strike ended in failure.²⁰

In the East Indian Railway, from 2 February 1922, following the escalation of non-cooperation agitation, all sections of Indian railwaymen struck work. In all these strikes, no previous notice was given. In fact, no demands were put forward by the striking workmen. In these strikes, railwaymen acted as citizens, as a part of the Indian people fighting for Swaraj under Gandhi's leadership.²¹ By 10 February 1922, railwaymen of Mughalsarai, Dinapur, Dhanbad, Bokaro and Sitarampur had followed the suit. Jamalpur Workshop was closed on 14th February, nearly 10,000 workshop men left work shouting 'Gandhi ki Jai'. The immediate cause of the strike at Jamalpur was the assault of the Indian workmen by a European

head mistry [mechanic]. The work-manager threatened to discharge the 1,000 striking men. The 'labour trouble' at the workshop followed the strike action of Indian loco-men on 10 February, 1922. The workshop-men only joined them. The interlocking system [track operating] was damaged and local trains stopped regular functioning.²² The strike was a popular protest against racial exploitation, because the European officers and higher ups were always discriminating the Indian labourers. Moreover, it was not incidental that this protest occurred in the course of non-cooperation movement. The Swadeshi and non cooperation agitations gave a political form to already existing racial tensions in the work place. There were instances where Indian railwaymen struck work during the Khilafat and non-cooperation movements and sought Gandhi's intervention to settle their disputes.²³

To the railwaymen, after his participation as a mediator in Ahmedabad textile labour strike, Gandhi had come to personify the idea of opposition to the colonial rule. He had also begun to be seen as a trade union leader. The colonial railwaymen confronted the railways as an employer and as a symbol of Raj and saw in Gandhi their natural leader. At this juncture, it would be apt to emphasise the fact that Gandhi was already a well known name in Bihar on account of his successful movement against Indigo planters in Champaran during 1917-18.

Jamalpur was practically a railway town on which tradesmen and others were dependent upon workshop employees for their business. During the beginning of Civil Disobedience Movement in 1930, there was intensive picketing of ganja and liquor shops in Jamalpur by Congress volunteers. As a result of vigorous prosecutions and protection offered to the vendors of liquor and ganja by the police, picketing gradually decreased and sales of liquor, ganja and toddy increased till conditions became almost normal.²⁴ Near about 7th November, 1930 there was a minor rise of the price of food stuffs in Jamalpur. A rumour was spread that the Congress volunteers²⁵ and their supporters were stopping the transit of grain and food stuffs from the villages to the town as a penal action against the people of Jamalpur as they did not stop drinking liquor and toddy. Consequently, there was a rise of the price of food stuff in Jamalpur. Inflamed by this rumour the workshop employees tried to vent their wrath on liquor and toddy vendors on which the congress men had been trying to get at.

On 7th November 1930, in the afternoon, a large number of railway workshop coolies, being affected by the price rise of the food stuff and also due to overall dissatisfaction over wage and working conditions, went to the liquor shop opposite the Jamalpur Railway Station and threatened to loot (to plunder) the shop the next morning. On the appearance of the local police, the crowd dispersed. Next day, on 8th November, anticipating trouble, the Deputy Superintendent of Police with a force of 20 constables armed with lathis (sticks) arrived at the Jahangira outpost in Jamalpur to prevent any breach of peace in the liquor shop outside the railway station. Between 11 a.m. and 12 noon, about three or four hundred coolies came to the liquor shop and threw brickbats on the tiles of this liquor shop and also inside the shop. Police arrested three persons among them. The crowd did not disperse and became boisterous and adopted a confronting attitude. Some of the members of the mob wanted to rescue the three persons arrested forcibly. The Deputy Superintendent released the three arrested persons on bail. While a part of the crowd dispersed, still many remained opposite the railway station. The Superintendent of Police, Monghyr then arrived at the spot and finally the crowd dispersed.²⁶

On 9th & 10th November, milk and vegetables brought from Monghyr to Jamalpur and Sultanganj to Jamalpur in the coolie trains were thrown out by the railway workshop coolies. On 11th November, 1930, the Divisional Inspector and the Sub-Inspector with a force of twenty constables went to the toddy shop to face any untoward incident. At 11 a.m., a crowd of railway workshop coolies passed this toddy shop shouting 'Mahatma Gandhi Ki Jay' and 'Tari Pine Wale ki Chai' (Down with toddy workers). Two Congress-men were present in the mob. A constable in plain clothes was assaulted by the workshop coolies at the instigation of the two Congress volunteers near that place.²⁷ Shambhu Saran Sinha, the Inspector of Police, Jamalpur, Sadar went to Congress Ashram and arrested thirteen Congress volunteers and two Congress volunteers mentioned above not in the lot. The next day, arrangement was made to guard the toddy and liquor shops by means of policemen.²⁸

On the 12 November, 1930, between 11 a.m. and 12 noon two amongst the five of the constables who had been deputed to guard the toddy shop near Gate No. 7 of workshop were beaten by a mob consisting of railway workshop employee and the pagri (head-gear) of one of the constable was taken away. Between 11:30 and 11:45 am, the crowds of coolies returned

shouting 'beat the lal pagariwalas' (police constables) as the police had arrested the Congress volunteers the day before. When the crowd arrived near the toddy shop, they started throwing stones at the police. The police took shelter in a tobacco shop fifteen or twenty steps away.²⁹ The crowd started throwing brick-bats at the tobacco shop also. Two constables were beaten by the workshop employees and the Pagri (head-gear) of the one of the constables was taken away. It was decided by the police authorities to arrest the persons who had assaulted the constables on the 12th November 1930. The Superintendent of Police, Monghyr accordingly ordered a force of thirty armed constables to be posted Near Gate No- 7 to stand by in case of need while arrests were being made on the identification of the injured constables.

Mr. B.N.Mullick, Assistant Superintendent of Police was ordered to be in-charge of Armed Police. The armed police halted at a short distance from the gate at about 3:50 p.m. The workshop workers started coming out from Gate No. 7 a little before the 4 p.m. buzzer went off. About twenty three persons were arrested on the identification of the injured constables. When the twenty three men were being arrested, these men protested that they were innocent and resisted the arrest. There upon, there was a kind of tug of war over the body of this person between the police and the workers.³⁰

All of a sudden, there was a great noise and the shouts of 'Gandhi Ki Jay' went up. Brickbats were thrown on the police and in one wild rush, all the arrested persons with exception of one were rescued by the workshop coolies. In spite of the warnings of the police, the stone throwing continued. The crowd shouted 'Beat the Police, Do not let them go'. The situation was very critical. During the lull, Mr. Smyth, Officer in Charge of Watch and Ward in the Workshop, went to the mob and tried to persuade the coolies to go back. Seeing that the persuasion had no effect, he called the reserve of Watch and Ward Darwans to come armed with lathis. About this time, Messr Hennis and Coad, who were European officers, arrived in the workshops. These two, along with Mr. Smyth, went to the mob and talked to them. Apparently, it had no effect as there was a heavy shower of brickbats again.³¹ The situation was very critical as the police were in danger of being surrounded from all sides.

The police thereupon opened fire which led to four deaths and serious injury to twenty workers. All together, the police fired sixty nine rounds - thirty nine rounds of buckshots and thirty one rounds of ball. The situation

became very tense and additional troops were requisitioned. It almost took three to four months for the situation to become normal in the railway workshop. The strike had been continuing about one and half month very calmly and quietly. Not a single act of violence had been reported to have taken place in this connection.

To conclude, the evocation of the name of Gandhi and use of his techniques of protest by the labourers in the forms of peaceful strikes and picketing of liquor shops etc. of the Jamalpur railway workshop opened a new vista in the strategy of workers mobilisation in Bihar. Despite their class based grievances related to wages, working conditions and racial discrimination provided the essential planks for their consolidation and reasons of protest but in fact, it was Gandhi in absentia who became a more potent cementing force for them than their own set of grievances against the management of Jamalpur railway workshop.

Notes

¹ O'Malley, 1926, p. 216.

² Raven, Vincent L. 1926. Nitin, 2012, p. 318.

³ Huddleston, G. 1906. p. 241.

⁴ Upadhyay, 2011., pp. 87-118.

⁵ Kydd, 1920.

⁶ Bhattacharya, S. 1998, pp. 374-405; Also cited in Upadhyay, 'Indian Labour History: A Historiographic Survey' in Bhattacharya, Sabyasachi (ed.). 2011, pp. 87-118.

⁷ Chakrabarty, Dipesh, 2000; Chandavarkar, 1994.

⁸ Indian Industrial Commission (IIC), 1916-18, Report, Calcutta, Government Printing Press, 1928:25. Quoted in Kerr, Ian J. 2007, p. 234.

⁹ IIC, 1916-18, Report, 26.

¹⁰ Jagga, Lajpat. 1981, p. 106.

¹¹ Ibid, p. 114.

¹² Mast, 1969, p. 24.

¹³ Letter from the Superintendent of Police, Monghyr to The Deputy Inspector-General of police, Crime and Railways, Patna, No. 135, 5th December 1919. Government of Bihar and Orissa, Political Department Special Section file no. 406 of 1919, Bihar State Archives.

- ¹⁴ Ibid, p. 9
- ¹⁵ Quoted in Sinha 2008.
- ¹⁶ Ibid.
- ¹⁷ Indian Nation, 01.01.1920
- ¹⁸ Ibid.
- ¹⁹ Quoted in Nitin Sinha 2008.
- ²⁰ Ibid.
- ²¹ Lagpat jagga, op.cit, p.144.
- ²² Ibid. p. 14 . The Leader 13 February,1922,Supplementary weekly note on the confidential diary of Superintendent of Police; also in letter no.147, of the S.P.Monghyr to the Agent EIR ,dated 11 February,1922 in Railway Establishment Progs. B, May 1922, n .215/1-91 (partA); also in Amrit Bazar Patrika: 14 February1922.
- ²³ Lajpat Jagga, op.cit. 145.
- ²⁴ Report on the death of four persons which took place as a result of firing by armed police in Jamalpur, near Gate No.7 of the Railway Workshops. On the 12th November, 1930, between 4 and 4/30 p.m.GOBO, Political Special, file no. 420 of 1930, Bihar State Archives, Patna: 24.
- ²⁵ Ibid.
- ²⁶ Ibid: 3.
- ²⁷ Statement of Shambhu Saran Sinha S.A.,dated 15 November,1930.p.33 Pol. Spl. File no. 420 of 1930. BSA. Patna .
- ²⁸ Pol. Spl.File no. 420 of 1930 BSA. Patna Report: 4. [The coolies' trains siding was next to gate no. 7 of the workshop. It was one of the principal gates through which thousands of coolies employed in the East Indian Railway workshop had passed in and out. Gate no. 7 was really an inland subway leading to the grounds of the workshops. The reason for this subway was that over it, the subway trains passed. Near gate no. 7 was the time when where the workers had to deposit metal counters when they left the workshop as a proof of their having been employed for the day in workshops. A steam buzzer went off at 11A.M. and another at 4 P.M. Most of the workers got out at 11A.M. and 4 P.M. but those amongst them who had worked at piece rate had no fixed time of departure.]
- ²⁹ Statement of Dalbhajan Singh Constable, dated 18 November 1930. Pol. Spl.File no. 420 of 1930 BSA. Patna Report : 49.

³⁰ Report on the death of four persons which took place as a result of firing by armed police in Jamalpur, near Gate No.7 of the Railway Workshops. On the 12th November, 1930, between 4 and 4/30 p.m. Political Special, file no. 420. Bihar State Archives, Patna:10.

³¹ Ibid.

References

- Bhattacharya, S. 1998. 'The Labouring Poor and their Notion of Poverty: Late 19th and Early 20th Century Bengal'. *Labour and Development*. 41 (2): 374-405
- Broughton, G. M. 1925. *Labour and Housing in Bombay*. London.
- Chakrabarty, Dipesh. 2000. *Rethinking Working Class History, Bengal 1890-1940*. Princeton University Press.
- Chandavarkar, Rajnarayan. 1994, *The Origins of Industrial Capitalism in India*. South Asian Studies, 51, Cambridge.
- Gilchrist, R.N. 1932. *Indian Labour and the Land*. Calcutta.
- Huddleston, G. 1906. *History of East Indian Railway*. Thacker, Calcutta.
- Jagga, Lajpat. 1981. 'Colonial Railwaymen and British Rule: A Probe into railway Labour Agitation in India 1919- 1922'. *Studies in History*, 3 (1&2).
- Kerr, Ian J. 2007. *New Departures in Indian Railways Studies*. Orient Longman, Hyderabad.
- Kydd, J. C. 1920. *A History of Factory Legislation in India*, Calcutta.
- Mast, Mahesh Kumar. 1969. *Trade Union Movement in Indian Railways*, Meenakshi Prakashan, Meerut.
- O'Malley, L.S.S. 1926. *District Gazetteer of Monghyr*. Patna.
- Prakash, Gyan, 2003. *Bonded Histories: Genealogies of Labour Servitude in Colonial India*. Cambridge University Press.
- Upadhyay, Shashi Bhushan. 'Indian Labour History: A Historiographic Survey' in Bhattacharya, Sabyasachi (ed.). *Approaches to History: Essays in Indian Historiography*. ICHR. New Delhi: 87-118
- Sinha, Nitin, 2012. 'Entering the Black Hole: Between 'mini England' and 'smell like rotten potato', the railway workshop town of Jamalpur, 1860s-1940s, *South Asian History and Culture*.3(3): 318.
- Upadhyay, Shashi Bhushan. 2011. 'Indian Labour History: A Historiographic Survey' in Sabyasachi Bhattacharya, (ed.), *Approaches to History: Essays in Indian Historiography*. ICHR/Primus Books, Delhi: 87-118

Experiments with Love: Janice Pariat's *Boats on Land*

HARPREET KAUR VOHRA*

Abstract

The paper attempts to review Janice Pariat's "Boats on Land" from the book of the same name and understand how a lesbian relationship between two girls in the story leaves lasting impression on the minds of individuals and could contribute to bring about drastic changes in their personalities and perhaps even alter their view of relationship. The paper will also attempt to understand lesbian relationships in the light of their general non-acceptance in society and examine how these experiences, nevertheless, become important as they lay the foundations of love and lead to acceptance of one's sexual orientation.

Keywords: Sexuality, rebellion, lesbianism, love.

The story "Boats on Land" by Janice Pariat in the book by the same name is subtly suggestive and rambling in its outline. The narrator's reluctant journey to the tea estate in Chanbari, Assam forms a part of an indelible experience of the teenager's life. Confusion in love and the demand of acceptance in love form major milestones of a teenager's experience. Initially, the reader is left in a slight doubt about the nature of the relationship that exists between the girls but as the story unfolds the nature of the relationship becomes clear. The experiment becomes a surprising opportunity for self-discovery and an intimate interaction between two very differently endowed individuals. One of the girls is a "castaway" of Loreto College, Calcutta, while the other plans to study medicine at Lady Hardinge at Delhi. There is a gulf in their interests and their geographical locations and this is coupled by an ultimate realization that the twain can never meet. This is one factor that takes them so close and yet so far from coming to terms with their relationship. The fact is that the bond that they share cannot be lasting and both have to return to their

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worlds; one sullen and the other wishful. However, the experience becomes a part of the collective consciousness of both the girls while they are on their journey of experimenting and finding love. The teenager experiments with love and also fears unrequited adoration. These experiences lay the foundations and could, in a sense determine how other relationships could work or not work for that matter. .

On the story “Boats on Land”, Janice Pariat in an interview said that it started as a story about a relationship between a boy and a girl and it felt wrong. She said that she couldn’t find the right narrative voice. Then she read “Once in a Lifetime” by Jhumpa Lahiri where the writer used the third person narration and brings in the ‘you’. That evening she sat down and rewrote the story. It became a story about two girls and it just felt right. She says, “Gender is such a construct” (Narayan 2012).

The relationship of the girls in the story is one which is based on a unique interdependence between two individuals with natures that openly appear to vary. It is also a relationship of unequal power and control. Lesbian relationships are marked, at times, by one partner taking on the role of a man and the other performing the role of a woman, an attempt, probably at the balancing of gender roles. In the relationship of the girls, the twenty-something is bold and outspoken and leads her partner to the discoveries of the body and the soul. In a study conducted by Gavin and Furman, they found that both individual characteristics and the “match of individual characteristics” were important correlates of relationship harmony (Furman and Gavin 1996). So their individual characteristics somehow seem to get fused into a oneness where they become extensions of one another. The girls go to the Brahmaputra and see the river in all its glory. The two girls are also bound together in their communion with nature; the large swathes of the river and the green expanses of Assam in its perennial fecundity. The imagery of the dragonfly and the reference to its life span is metaphoric and almost prophetic. The opening lines seem to predict the future of the relationship.

“I can measure our days together by the number of times we went to the river. Ten in fourteen days. Which by most accounts is not long, yet a dragonfly, you told me, may live only twenty-four hours, and if we were dragonflies we would have spent ten lifetimes together” (Pariat 181). “They go together in the dead of the night to an open field when the flower beds disappeared into inky darkness. They dissolve into the darkness. At night,

the field could have been a shimmering body of water... We lay in the field, undiscovered in our kingdom of weeds” (191).

Janice Pariat gently looks at nature in all its abundance and placidity. The beauty of rain soaked Shillong and the luxuriance of green Assam create a beautiful combination in Pariat’s landscape. The two become a potent combination and act as a reflection of states of mind of the two protagonists. Nature acts as active agent and adds colour to their growingly effervescent and yet doomed to be transient relationship.

Teenage years often become zones of conflicting emotions of love on the one hand and of torment on the other. The teenage years of the young girl in the story is filled with the expectations of love and excitement as it usually is. In the anglicized, Christian dominated town of Shillong, lives of urban teenagers are marked by reasonable freedom and an intermingling of the sexes. The young girl thinks of this long-haired boy called Jason while she ruminates on the exciting trips to Police Bazaar to eat momos at Peking Restaurant and ice-cream buns at Floury’s, all the while pretending not to notice the boys. “More than the culinary delights though, it was a chance to meet boys, walk past them as though we didn’t care they were watching...” (182). These are the grand plans of the summer vacations, which of course are to be thwarted by bigger policies of the family. A visit to Chandbari in Assam changes many things in the enthusiastic life of this teenager. The quest for love and the constant journey of experimentation on this path often leads many a teenager to new understanding about love, their bodies, physical relationships and acceptance of the self, which maybe a fairy tale for some and a story badly ended for others. At the end of the story while there is a sense of loss when the girls part there is also an accompanying feeling of fulfillment and a feeling of self discovery.

Both the teenagers in the story are unnamed protagonists; one riding high on the tide of teenage dreams of boys and unending ramblings; the other wounded emotionally from the recent loss of her mother to suicide. The latter is the daughter of a tea-estate Manager in Assam who has everything that she can ask for. Her friend from Shillong marvels at her house and house-help. Staying in the Assam bungalow gives her a sense of luxury. She feels that there are invisible hands that are lurking in the house and that do all the work. Beds were made and rooms were cleaned by invisible hands while they were at breakfast. The girl from Shillong as if not fascinated enough by all this meets her “new friend” who fascinates her

in the most unexpected way and lets herself be led. The latter is rebellious and does not care about the opinion of her step mother and her father, even though they are constantly vexed at her behavior.

Teenage attitudes towards sexuality are largely determined by the atmosphere of the home and they also develop largely on the information percolated by peers. Parents are the major contributors in making the atmosphere at home conducive for teenagers. Although the transition to greater independence is the hallmark of this developmental phase, parents clearly have a role and exert significant influence in the choices young people make about sex. Similarly, peers are significant knowledge disseminators in matters of sex. Teenagers are most likely to seek sexual information from their friends (61 percent). (Parents, Peers, and Pressures: Identifying the Influences on Responsible Sexual Decision-Making).

The teenagers in the story appear to share a diaphanous sexual relationship and derive a sense of deep comfort from each other. “Although youthful homoeroticism has been documented by artisans, poets, and historians for thousands of years, it was not until the early 1970s that American scientists—primarily medical researchers and mental health professionals - began systematically studying a newly recognized clinical group they classified as “gay youth.” (Meyer and Northridge 2007). These studies have subsequently brought about a wider understanding of gay youth and their worlds, which are often confined and secretive. In “Boats on Land”, the second girl, probably due to the loss of her mother some years back becomes rebellious and withdrawn. She is “always retreating into her brooding reclusive self” (83), the narrator comments upon her friend. She surprisingly changes from the morbid brooder to an excited young girl, exultant and expectant in her new found love. Their behavior changes after both of them have a bath together in the bathtub of the sprawling ancient bungalow. The narrator celebrates the newness of the relationship. “The next day, the world was washed anew” (89), she remarks. There are signs of frequent physical contact; ‘shoulder grazing arm’, ‘breath on neck’, ‘hand trailed over mine’, “Every gesture, I thought was triumphant and added something unforgettable to our lives.” Even after their first encounter when “she undid the buttons of her nightdress” (195), the next day the same brooding girl was disarmingly charming “not just to me but even to my parents whom until now you’d largely ignored”. The brief physical encounters give them a sense of revived reinvigoration.

Lesbian and gay relationships sometimes prove to be extremely difficult because of the view that society takes of such relationships. The girls in the story are afraid of their growing affection for each other. The process of declaring a homosexual identity is often referred to as “coming out”. It can start with homosexual fantasies or dreams, with the realization that one is attracted to people of the same gender, with a feeling that one is different from one’s peers or even with a sexual experience (Kaufman 2008). The confusion that a homosexual faces gets infinitely complicated due to societal stigma, lack of knowledge and few opportunities to mingle with teens of a similar orientation.

The lifestyle and environments of bungalows of tea estate managers in Assam is luxurious and grand. The old English style houses, the battery of servants and comfort in the loneliness of a secluded tea estate is unusually attractive. She is amazed at the speed and the silence at which work gets completed in the house. “beds were made and rooms were cleaned by invisible hands while we were at breakfast, towels changed twice a day, dirty laundry magically reappeared in a neatly folded, ironed pile, meals and fresh fruit juice were ordered at the touch of a bell”(186). The environment seems to be magical to the young teenager. On the other hand, the other girl lives in this very same environment but it holds out no attraction to her at all as she is lost in solitary ramblings. She is a perceptible embarrassment to her parents who constantly present the excuse of her dead mother for her wayward behavior. Her step-mother is a stylish Mishing tribal lady whose turn out makes the other girl feel embarrassed about her own mother, which is a typical teenager trait. “Your mother was a tribal Mishing lady, with chic shoulder-length hair and flawless skin. She was dressed in a floral-patterned kurti and dark green pyjamas. I wish my mother was in something more appealing than a crumpled jainsem (a traditional Khasi dress)” (184). For a teenager there is more to it than mere embarrassment. It is almost mortification and hurt for a teenager who up till now (throughout childhood) viewed her parents as people to be fervently emulated but now they end up as anachronisms, unable to keep up with fads and fashions of their children.

The milieu of Chandbari generates feelings both nostalgic and salubrious. It is in this environment that the girls get swept into a relationship of ease in which no questions are asked and no pretensions are to be masked. Both the girls in the story are unnamed protagonists. Is it their universality or their particularity for which they remain unchristened? The second girl is

rebellious even though she is past her teens. She secretly smokes cigarettes and moves around in crumpled clothes. She wore slippers, a few sizes too large. Even in the cold, she wears a T-shirt and rolls up her jeans when she goes to the river. In the words of her friends she has an “old sadness” and the old sadness has a “stench”. Her mother had committed suicide and there is no mention in the story about the reason. The girl broods incessantly and remains sullen in the company of her “new” mother and her exasperated father. She roams near the river, looks at the dragonflies and laughs at her companion’s conventional choice of profession. “Is that your greatest dream to be a nurse?” (190), She asked her friend even though we earlier have learnt that her desire is to study medicine and become a doctor.

The subject of lesbian relationships especially among teenagers is a delicate subject which requires sensitive handling. The path of sexual discovery is difficult enough and when it is straddled by lesbian tendencies, the going gets even tougher. The discovery of such feelings often gives rise to feelings of guilt for being attracted to one’s own sex. In “Boats on Land”, the two girls are drawn into a relationship which, they naturally find very difficult to come to terms with. “Regardless of whether romantic relationships do or do not displace a friendship, it seems likely that the experiences in friendships and romantic relationships may influence each other (Furman and Shaffer 2003). Furman and Shaffer go on to add that both forms of the relationships entail “intimate disclosure, support seeking and giving, and mutuality”.

The friendship that the two newly found friends develop influences them in deep ways. The moroseness faced by one and the nervousness faced by the other give way to an acceptance of themselves and of one another with all the flaws that teenagers would naturally possess. The two friends here have a profound impact on one another and they look forward to their meetings which are mostly secret conversations by the river. It is not unknown how friends during adolescence have a great impact and influence on one another - friendships influence everything from choice of clothes to choice of careers and it has an impact on other relationships too. Friends influence adolescents in many ways and even “risky or problem behaviour” forms a part of this influence (Adams and Berzonsky 2003) Interpersonal relationships among teenagers illustrates that the process of adolescent development involves “dynamic, mutually influential exchanges between the developing youth and significant others” (Lerner, Lawrence

and Steinberg 2009). The girls in question influence each other significantly and even the parents of the girls are able to see the change.

For the two girls to part after the brief but eventful holiday is immensely difficult, so much so that the host's daughter disappears the morning they left, leaving her parents to apologize, as always. And when the other girl goes back to Shillong, she is filled with loneliness and an inexplicable empty feeling. "We passed the sweeping blue waters of Barapani, shimmering coldly in the sunlight, and I felt a great sense of emptiness - as though it had been drained and all the world lay hollow like a lake" (199). Towards the end of the story she secretly declares that she thought of her, her hands, her face and "folded them up, our secret lives". The relationship that they shared is not one that can be openly discussed with friends over endless gossip. When she returns, Sarah one of her close friends updates her on all the gossip while she was away and as expected, all the gossip is about heterosexual relationships - her crush on twin boys, someone being kissed behind an umbrella and Jason, waiting for her return. Even though their story comes to an abrupt end when the journey to Shillong materializes, there is a lurking feeling that the relationship would carry its repercussions in the lives of the protagonists long after the separation took place. Experiments in love form a part of a teenager's life and if it is a same sex relationship, the experiment would have a long lasting impact on the lives of the individuals. The impact of the bond emanates from the fact that the relationship was in a sense taboo and yet it was allowed to flower. There is a lingering sense of nostalgia and loss but at the same time a sense of satisfaction too.

"There were traces of you littered all over the bungalow as though you were a visiting ghost. Occasionally, I'd catch the lingering smell of cigarette smoke even though you were nowhere around. Once, I found your slippers on the veranda, discarded under a chair" (Pariat 188)

The experiments with love in *Boats on Land* help two individuals on their journey to self discovery. Chandbari becomes a little microcosm of a world that the girls would have liked to inherit forever. The rebellious reticence of one and the coiled up coyness of the other coalesce into a new relationship that abounds in happiness and security. Even though the girls would have to go back to their former lives, the tale of love that the relationship spins leaves a taste of quiet rebellion and a "not so small" fortress taken.

References

- Furman, W. and Laura Shaffer. 2003. 'The Role of Romantic Relationships in Adolescent Development', https://www.du.edu/psychology/relationshipcentre/publications/furmanshaffer_2003.pdf, accessed on 12/08/2014
- Gavin, A. Leslie and Wyndol Furman. 1996. 'Adolescent Girls Relationship with Mother's and Best Friends', *Child Development*, 67(2): 375- 86.
- Gerald, A.R. and Berzonsky. 2003. 'Friendships, Cliques and Crowds', in *Blackwell Handbook of Adolescence*, Blackwell Publishing House, Australia.
- Kaufman, M. 2008. 'Adolescent Sexual Orientation'. *Paediatric Child Health*. 13(7): 619-623.
- Lerner, Richard M, Lawrence and Richard M Steinberg. 2009. (ed) . *Handbook of Adolescent Psychology: Individual Bases of Adolescent Development*. John Wiley, New Jersey.
- Meyer, Ilan, H. Meyer and Northridge, Mary E. (ed.) 2007. *The Health of Sexual Minorities: Public Health Perspectives on Lesbian, Gay and Bisexual and Transgender Populations*, Springer, New York.
- Narayan, Manjula. 2012. Interview with the author and Book Review of Janice Pariat's , 'Boats on Land', *Hindustan Times*, New Delhi, October 6.
- National Association of Social Workers. 2001. 'Parents, Peers, and Pressures: Identifying the Influences on Responsible Sexual Decision-Making'. 2(2) September. Available online at http://www.naswdc.org/practice/adolescent_health/ah0202.asp, accessed on 2/12/2015

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Book Reviews

Vimal Kant, Caste Consciousness & Power Politics in Bihar (1937-1967), B.R. Publishing Corporation, Delhi, 2015. Pp. 258. ISBN:9789350502402. Price: Rs. 1500.

This book authored by Vimal Kant gives insights of not only the the political history of modern Bihar and the role of caste leaders, but also explains the origin of caste consciousness amongst the Bihari masses and the quest for power among caste groups. The term 'caste' is derived from the Portuguese word *casta* which in the Indian context has been analysed from various perspectives by historians, sociologists, political scientists and others. Over the years, caste perhaps has been regarded as the most important constituent of 'Hindu' social structure in India. The caste system has been treated as an important aspect of Indian social history from ancient times till date. During colonial rule, changes in economic, political and administrative spheres have substantially influenced the Indian social make-up. This transformation affected the understanding of caste as well. As a result, traditional values and institutions were subjected to a great deal of criticism despite the fact that these were adapting themselves to the changing scenario. The colonial administration was interested in caste and religion in India partly out of curiosity to understand the social practices and institutions of a people and partly to use their knowledge for the purpose of colonial governance. They used caste and religion also to argue that India did not constitute an integrated, social, cultural, economic and political unit, and hence could not constitute a nation. Their analysis of caste and culture presented the Indian social profile as a fragmented and not as an organic whole. By exhibiting their concern for economic and social development of the lower castes, the British through legislation and administrative orders politicised caste, tribe and religious communities.

The interaction between traditional Hindu caste system and the modern institutions of British origin led to the emergence of different kinds of mass mobilisation and politics. Through the policies regarding social institutions and their administration the British rule activated the process of local and regional consciousness as never before in Indian history. This went contrary to the needs of national integration and is clearly manifested in the British

policy of divide and rule. The census enumeration on the basis of caste led to a sudden rise in caste consciousness and caste identity among people and allowed the communities to use census data as a tool for recognition of social status and access to privileges by the State. There was widespread movement among castes and sub-castes to get them enumerated and the census was seen as an opportunity to lay claim to higher caste status. It was assumed that once higher caste status was recognised through census enumeration, other social privileges would follow or could be claimed. Caste mobilization perhaps, became the most important factor in the game of power- politics in the post-Independence era.

The present study focuses on a short span of only three decades of the last century, i.e. from 1937 to 1967. The selection of the period is based on the argument that while, the year 1937 marks the beginning of the peasant participation in the electoral politics of the province of Bihar, the year 1967 comes to us as a landmark with the formation of the first non-Congress Government in the Province. It remains to be questioned whether or not the experiment of 1967 in the second largest parliamentary-seat state was the outcome of intensification of caste consciousness in the pre 1967 period. This issue has to be seen on the basis of the question whether in that period general erosion of the nationalist hegemony was there and if yes did it lead to organisation of groups on the basis of raised caste consciousness. The review of literature is quite detailed. In addition to available secondary sources, different primary sources including archival sources, private papers, contemporary news papers, Census operation reports etc., are also explored to make sense of the political history of modern Bihar from different angles.

The study is divided into seven chapters. The introduction comprises discussions on two main points - situating caste consciousness in pre 1937 Bihar, and review of literature. This chapter also includes discussions on caste structure in pre-modern Bihar, problem of peasantry and emergence of intermediary castes, Congress influence, political developments after independence, erosion of Congress and role of caste consciousness. The second chapter deals with the role of modern education in the evolution of caste consciousness from colonial times and the role of important individuals in colonial Bihar who contributed to the rise of caste consciousness. Caste and community efforts which contributed to the origin and development of caste consciousness have also been highlighted. While impact of modern

education provided ample opportunities to few sections, it also paved path for consciousness among other caste groups. The situation continued during the pre-independent and the post-independent eras of Congress ministries. The expansion of caste consciousness went along side the rise of national consciousness in the Bihari society. The third chapter deals with the formation of different caste associations. It includes discussion on formation of different caste associations in the pre and post 1937 Bihar, construction of mythologies and their claim for higher caste status, their activities and claim for power sharing and their impact on the power relations in Bihar. The fourth chapter explores the different social reform movements in Bihar and their role in the spread of a new awakening like the reformation movements of Brahmo Samaj, Arya Samaj, Theosophical Society etc. Though these were primarily the social reformation movements, the people who came in contact with these movements did not remain untouched with a broader sense of awakening. The nationalist movement and role of various castes in Bihar, creation of Bihar, caste census, the first general elections of 1937 and caste equations, Congress ministry and caste consciousness are the main themes which have been covered in this chapter. Chapter five deals with the changing facets of power relations in Bihar after independence. Changing political atmosphere and the first elections after independence in 1951, bipolar caste politics in Bihar, Zamindars and Congress, Kisan Sabha and Congress, factions in Congress, erosion of Congress support base in 1967 elections in Bihar, coalition government pattern started and other aspects have been examined in this chapter. Chapter six discusses different agrarian movements including the movements in Bihar in the post-Independence period, and the role of caste in their successes as well as failures. Besides, other issues condition of peasants in Bihar in pre-1947, zamindars and Bihar peasantry, rise of peasant consciousness due to nationalist movement, role of Kisan Sabha and Swami Sahajanand Saraswati, the abolition of zamindari, Bakasht problem, Congress and peasantry, counter attack by zamindars, etc., have been discussed. Major conclusions of the book summarized in the chapter are as follows: caste consciousness has its historical roots, British policy were responsible for caste consciousness and caste rivalries, education played a crucial role, caste is closely associated with the problem of peasantry, caste was a dominant factor in politics during the period of the study and caste politics has been largely influencing the course of Bihar politics and power equations among the castes in the post-Mandal period also.

The study is an interesting one as it presents an interesting preview of the configurations of politics in Bihar where caste continues to remain an important fulcrum for determination of political equations. In Bihar, icons turn into caste heroes: The process which has gained momentum in the wake of coming Assembly elections, has turned Emperor Ashoka into a Kushwaha king; Babu Kunwar Singh, freedom fighter of 1857, into a Thakur and famous Hindi poet Ramdhari Singh Dinkar a Bhumihar. Perhaps the most important element of the book is its engagement with rewriting history to serve modern political ends. Though this trend is not new or unique to Bihar, the book helps scholars to understand an interesting interface between politics, history and caste. Though there is no dearth of books on caste, studies on caste as a social phenomenon and as a political factor have undergone a steady transformation. In this context, though this is another book on caste consciousness, the book is worth reading to understand the articulation of caste in the social and political life of Bihar.

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Rekha Sarin and Rajan Kapoor, Chai: The Experience of Indian Tea, Niyogi Books, 2014. Pp. 288. ISBN: 9789381523919. Price: Rs. 1995

The book tells an intrinsic story of Indian tea cultivation since the nineteenth century British colonial rule. The tea gardens flourished not only in the eastern Himalayas but also other parts of the country, including the Nilgiris, Western Ghat and Kangra Valley. This book presents fascinating stories of natural grandeur of tea estates across the country in a lucid way to non-specialist readers. Of many varieties of Indian tea, Darjeeling Tea is the finest of all in terms of its superior aroma, flavor and taste. The authors describe their experience in visiting tea estates as the explorers: "Visit a tea

plantation and you are in the lap of natural beauty. Besides being refreshed by the finest teas from the gardens, enjoy the pristine environment with spectacular views, gurgling rivers, trekking trails and jungle wildlife” (p. 85). This book is systematically organized with four sections on diverse range of issues, namely, (i) Chai the Indian Way; (ii) Into the Heartlands of Tea; (iii) From the Leaf to the Sip; and (iv) Tea the Universal Brew. This book contains seventeen chapters covering history of the tea industry development in places such as Assam, Darjeeling, South India, the Himalayas, and North-East region.

In the chapter “How Tea Came to India”, Sarin and Kapoor elaborate the fascinating facts about history of Indian tea. The tea pioneers in India started the first phase of commercial cultivation of tea in Dibrugarh, the gateway of Upper Assam, during 1840s. The place was selected by the British tea planters due to its suitable climatic conditions for tea cultivation. This region became a host of the world’s first ever tea company – The Assam Company, which was established on 12th February 1939 with shareholders from both England and India. Another company, the Bengal Tea Association, was also established at the same time in Calcutta. However, the Bengal Tea Association merged with the Assam Company soon after its establishment. Since 1840s the tea companies started establishing proprietary tea gardens, each with a vast area, mainly in upper Assam surrounding Sivasagar and Dibrugarh. In Darjeeling, commercial tea cultivation started in 1850s with the establishment of several tea estates in different parts of Darjeeling district. By the end of nineteenth century, the Darjeeling Consolidated Tea Company had huge operations in the district.

In the chapter “Bounty of Assam”, the authors elaborate the fascinating facts about Assam tea. Assam is now “the single largest contiguous tea growing region in the world and credited with almost fifty-one percent of India’s output of tea” (p. 71). The Tocklai Experimental Station in Assam, established in 1911, is one of the finest tea research laboratories in the world. Tocklai is now managed by Tea Research Association (TRA) with funding from the Council of Scientific and Industrial Research (CSIR) and the Tea Board of India.

In the chapter “Divine Boon of Darjeeling”, the authors elaborate fascinating facts about Darjeeling tea. In 2004-05, Government of India

¹<http://www.deccanherald.com/content/481627/in-bihar-icons-turn-caste.html#>

granted the first ever Geographical Indication (GI) status to Darjeeling Tea. The authors describe this achievement: “the exclusivity of Darjeeling Tea has earned it the distinction of being first product in India to be accredited with a Geographical Indication (GI) status. By this no other tea may be permitted to be labeled ‘Darjeeling’”, unless produced in Darjeeling district of West Bengal (p. 85).

The authors also depict picturesque natural grandeur of floras and faunas in the tea estates. In the last chapter the authors describe fifteen recipes with tea that include delicious desserts and mock-tails. This book is produced in a photo-documentation style to grasp basic understandings on the tea estates, planters and cultivation process. However, the book lacks a chronological Table depicting the history of tea cultivation in India. The authors also touch upon aspects of tea tourism and eco-tourism that can help in economic development of lives of planters and labourers. This book is a nice read for researchers, tea-lovers, and travelers visiting picturesque tea gardens in the Himalayas, Nilgiris, Western Ghat and North East India.

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