



- The Maharsi and the Agnostic
Priti Kumar Mitra
Buddhism in Bengal in the Early Medieval Period
Shankar Goyal
The Mythic Reality in R.K. Narayan's Novel 'The Man-Eater of Malgudi'
Md. Mahmud Hasan Chowdhury
Changing Pattern of a Traditional Fishing Community in Bangladesh
Md. Anwar Hussain
Socioeconomic and Demographic Determinants of Fertility of the Chakma
S. M. Mostafa Kamal
Micro-credit and Poverty Alleviation in South Asia
Selina Ahmed
K. M. Rezaul Karim
M. A. Q. Bhuiyan
Impact of Inflation on Economic Growth in Bangladesh
Md. Tanjil Hossain
Job Market Share of the Students of the Business Studies Faculty
Farzana Quoquab Binte Habib
Human Resource Development Through Compensation of the Employees
Most. Hasna Hena
Sheikh Ashiqurrahman Prince
Asset Structure of Small Scale Industries
M. Saiful Islam
Multifunctional Land Uses and Urban Agriculture in Rajshahi City
Md. Masud Parves Rana
The Patterns of Urban Service Delivery System
Md. Mujibor Rahman
Farhana Afroj
Medical Negligence in Bangladesh
Asma Bint Shafiq
Parametric Regression Model and Covariates of Control Time of Diabetes Mellitus
Mst. Papia Sultana
M. Abul Basher Mian
Book Review
Priti Kumar Mitra



RAJSHAHI UNIVERSITY



© INSTITUTE OF BANGLADESH STUDIES

Published by

Mohammad Akhteruzzaman Chowdhury
Secretary-in-Charge, Institute of Bangladesh Studies, Rajshahi University
Rajshahi, 6205, Bangladesh.
Phone: (0721) 750753
Fax : (0721) 750064
E-mail: ibsrui@yahoo.com

Cover Design

Abu Taher Babu

Editorial Assistant

S. M. Golam Nabi
Deputy Registrar
IBS, R.U.

Printed by

M/s. Shahpir Chishti Printing Press
Kadirganj, Rajshahi.

Price:

Tk. 150.00
US \$ 10.00

ISSN 0256-503X
Vol. XXX 2007

**JOURNAL
OF
THE INSTITUTE OF BANGLADESH STUDIES**

Executive Editor

M. ABUL BASHER MIAN

Associate Editor

SWAROCHISH SARKER



**INSTITUTE OF BANGLADESH STUDIES
RAJSHAHI UNIVERSITY**

Editorial Board

Executive Editor

M. Abul Basher Mian

Professor & Director
Institute of Bangladesh Studies, RU

Associate Editor

Swarochish Sarker

Associate Professor
Institute of Bangladesh Studies, RU

Members

M. Abdul Qadir Bhuyan

Professor, Department of Sociology, RU

Priti Kumar Mitra

Professor, Institute of Bangladesh Studies, RU

M. Zainul Abedin

Professor, Institute of Bangladesh Studies, RU

Abu Daud Hasan

Professor, Department of English, RU

Sanjib Kumar Saha

Professor, Department of Marketing, RU

Anwarul Hasan Sufi

Professor, Department of Psychology, RU

M. Zaglul Haider

Professor, Department of Political Science, RU

Begum Asma Siddiqua

Professor, Department of Law & Justice, RU

M. Mostafa Kamal

Assistant Professor
Institute of Bangladesh Studies, RU

Mohammad Nazimul Haque

Assistant Professor
Institute of Bangladesh Studies, RU

The Institute of Bangladesh Studies and the Editorial Board of the JIBS
bear no responsibility for contributors' statement of facts or views.

All communications should be addressed to

The Executive Editor
Journal of the Institute of Bangladesh Studies
Institute of Bangladesh Studies
University of Rajshahi
Rajshahi 6205, Bangladesh
Telephone: 88-0721-750985
E-mail : ibsru@yahoo.com

NOTES TO CONTRIBUTORS

The Institute of Bangladesh Studies welcomes research articles on the history, geography, economics, politics, sociology, law, language, literature and culture of Bangladesh and such other subjects as are significantly related to the life and society of Bangladesh for publication in the *Journal of the Institute of Bangladesh Studies (JIBS)*. The article may be written either in English or in Bengali.

Articles are accepted with the understanding that they have not been published in full or in a summary form or accepted for publication elsewhere. The Editorial Board of the *JIBS* take cognisance with a number of but not limited to following criteria in accepting articles for publication.

The article:

- is based upon new facts and/or new ideas, and makes original contribution to knowledge;
- offers analyses which are rigorous, articulated and integrated;
- conforms to accepted research methodology;
- contains an abstract within a word limit of 100; and
- follows technical style of referencing which is methodical and conforms to accepted standard of the *JIBS*.

Two copies of computer composed manuscript (along with a soft copy) not exceeding 20,000 words, on one side of standard A4 size sheets should be submitted. Full contact address including the designation of contributor(s) must be provided.

CONTENTS

The Maharsi and the Agnostic : Intellectual Confrontation Between Debendra Nath Tagore And Akshay Kumar Datta Priti Kumar Mitra	9
Buddhism in Bengal in the Early Medieval Period Shankar Goyal	43
The Mythic Reality in R.K. Narayan's Novel 'The Man-Eater of Malgudi' Md. Mahmud Hasan Chowdhury	51
Changing Pattern of a Traditional Fishing Community in Bangladesh Md. Anwar Hussain	59
Socioeconomic and Demographic Determinants of Fertility of the Chakma Tribe in the Southern Part of Bangladesh: A Micro Level Analysis S. M. Mostafa Kamal	71
Micro-credit and Poverty Alleviation in South Asia and Its Implications to Asian Development Selina Ahmed K. M. Rezaul Karim M. A. Q. Bhuiyan	83
Impact of Inflation on Economic Growth in Bangladesh Md. Tanjil Hossain	95
Job Market Share of the Students of the Business Studies Faculty of Rajshahi University : An Empirical Study Farzana Quoquab Binte Habib	101
Human Resource Development Through Compensation of the Employees in Bangladesh: A Study on Some Private Manufacturing Industries Most. Hasna Hena Sheikh Ashiqurrahman Prince	111
Asset Structure of Small Scale Industries : A Study in Bogra and Rajshahi Districts M. Saiful Islam	125
Multifunctional Land Uses and Urban Agriculture in Rajshahi City, Bangladesh Md. Masud Parves Rana	139
The Patterns of Urban Service Delivery System and the Environmental Management in Khulna City Md. Mujibor Rahman Farhana Afroj	153
Medical Negligence in Bangladesh: A Quest for Legal Remedy Asma Bint Shafiq	169
Parametric Regression Model and Covariates of Control Time of Diabetes Mellitus Mst. Papia Sultana M. Abul Basher Mian	193
Book Review Priti Kumar Mitra	199

Obituary



Abdul Karim (1928—2007)

Dr. Abdul Karim (1928—2007), former Vice Chancellor and Professor Emeritus of Chittagong University, Senior Fellow at the Institute of Bangladesh Studies, Rajshahi University and the renowned historian of the sub-continent died on the 24th July 2007.

Dr. Karim was born on the 1st June 1928 in the village of Chapachari under Banshkhali thana in Chittagong district. The name of his father and mother were Syed Waizuddin and Syeda Rashida Khatun respectively.

Dr. Abdul Karim passed High Madrasa in 1944, Intermediate from Islamic Intermediate College, Chittagong in 1946, B.A.(Honours) in 1949 and M.A. in 1950 in History from the University of Dhaka. He obtained two Ph.D. degrees: one from the University of Dhaka in 1958 and the other from the University of London in 1963. His main theme of research was socio-political and cultural history in the medieval Bengal. His contribution in the history of Sultanate period of Bengal is internationally recognized. He wrote about fifty books both in English and Bengali. He also contributed about two hundred research articles both in English and Bengali, published in home and abroad and he compiled more than hundred of entries for the Encyclopedia of Bangladesh-'Banglapedia'. The Institute of Bangladesh Studies published his two books: (a) *History of Bengal : Mughal Period*, Vol. I (English and Bengali Version) in 1991; and (b) *History of Bengal : Mughal Period*, Vol. II (English version) in 1992. His other worthfull publications are: *Corpus of the Muslim Coins of Bengal* (1960), *Bharatiya Upamahadeshe Muslim Shasan* (1969), *Corpus of the Arabic and Parsian Inscriptions of Bengal* (1995), *Banglar Itihas : Sultani Amal* (1978), *Banglar Itihas : 1200-1857* (1999), etc.

Dr. Abdul Karim started his carrier as a Lecturer of History in the University of Dhaka in 1951. Then he joined as Reader in the Department of History in Chittagong University in 1966. He retired in 1984 as a Professor. He served as Senior Fellow (in the rank of Professor) at the Institute of Bangladesh Studies, Rajshahi University from 1989 to 1992. He also served as Supernumerary Professor in Chittagong University from 1992 to 1996.

Dr. Abdul Karim served as the Vice Chancellor, Chittagong University from 1975 to 1981. He also worked as the Director, Chittagong Baitus Sharaf Islami Research Institute from 1985 to 1989.

Dr. Karim was awarded Ekushe Padak in 1995, Dr. Enamul Huq Goldmedal in 2002, Abdul Huq Chowdhury Goldmedal in 2002, Bangladesh Asiatic Society President's Goldmedal in 2006.

The Editorial Board of the IBS journal deeply condoles his death and expresses deep sympathy to his family members.

Obituary



Priti Kumar Mitra (1942—2007)

Dr. Priti Kumar Mitra, Professor of History of the Institute of Bangladesh Studies (IBS), Rajshahi University died on 8 October, 2007 at 12-20 a.m. due to heart failure. He was around 65 years old. At the time of his death, he left his wife, one son and one daughter.

He was born on 8 November, 1942 at village Kalicharanpur under Jhenaidah district. The names of his father and mother were late Pradyot Kumar Mitra and Amiya Bala Mitra respectively.

He obtained SSC in 1960 from Jhenaidah Zila School, HSC in 1962 from Khulna B.L. College, B.A. Honours and M.A. degree in History from Rajshahi University in 1965 and 1966 respectively. In 1985 he secured PhD Degree from the University of Hawaii, USA and the title of his PhD thesis was "Dissent in Modern India (1815-1930): Concentrating on Two Rebel Poets of Bengal—Michael Madhusudan Datta and Kazi Nazrul Islam." He also conducted research work on the thoughts of Nazrul in 1991, at the University of London and during 1995-96 at the Asiatic Society of Bangladesh, Dhaka.

Dr. Mira, a renowned researcher on Nazrul, recently (2007) published a book titled *The Dissent of Nazrul Islam : Poetry and History* from the Oxford University Press, New Delhi. His another book titled *History of Freedom of Thought* is going to be published by Bangla Academy, Dhaka. He published nearly fifty research articles in different reputed journals. About a dozen of scholars did PhD Degree under his supervision.

He started his career as a lecturer of History at Chapai Nawabganj College (1967-68). Then he joined the Pakistan Central Superior Service (1968-71) as Taxation Officer. During the War of Liberation he worked as Staff Officer under the Ministry of Commerce of Exile Bangladesh Government. After independence, he again joined as Taxation Officer of Bangladesh Government (1972-74). He served as an Assistant Professor in Jahangir Nagar University during 1974-77. He joined as a Fellow (Assistant Professor) at the Institute of Bangladesh Studies in 1985, and promoted to Professor in 2000 where he has served until death. He also served as Visiting Professor at the University of Hawaii, USA in 1995. He served as Director of the Institute of Bangladesh Studies during 2000-2002. He worked as Executive Editor of the IBS journal during 2000-2002.

The Editorial Board of the IBS journal deeply condoles his untimely death and expresses deep sympathy to his family members.



Dr. P. C. Karmali MSc (1942-2002)

Dr. P. C. Karmali, Professor of History at the Institute of Bangladesh Studies (IBS), Rajshahi University, died on 8 October, 2002 at 12.10 p.m. after a long illness. He was around 62 years old at the time of his death. He left his wife and son and one daughter.

He was born on 2 November, 1942 at village Kallia and Kallia, Rajshahi district. His father and mother were Late Feroz Khan and Late Sultana Khatun respectively.

He obtained B.A. in 1960 from Rajshahi University, M.A. in 1962 from Rajshahi University, B.L. in 1964 from Rajshahi University, B.A. Honours and M.A. degree in History from Rajshahi University in 1965 and 1966 respectively. In 1967 he secured PhD degree from the University of London, U.K. and the title of his PhD thesis was 'The History of the East India Company in Bengal, 1757-1857'. He also conducted research work on the history of Bengal at the University of London and during 1969-70 at the Asian Society of London, U.K.

Dr. Karmali's research work on 'The History of Bengal, 1757-1857' was published in 1970. The book was published by the Asiatic Society of London, U.K. His other book 'The History of Bengal, 1757-1857' is also published by Asiatic Society, London. He published many other books and articles in different regional journals. About a dozen of articles in PhD Degree were published in different journals.

He started his career as a lecturer of History at Dhaka University College (1967-68). Then he joined the Pakistan Central Superior Service (1968-72) as Taxation Officer. During the War of Liberation he worked as Staff Officer under the Ministry of Commerce of East Pakistan Government. After independence, he joined as Taxation Officer of Bangladesh Government (1972-73). He served as an Assistant Professor in Jahangirnagar University during 1974-75. He joined as a Fellow (Assistant Professor) at the Institute of Bangladesh Studies in 1975 and promoted to Professor in 2000 where he has served with dignity. He also served as visiting lecturer at the University of Hawaii, U.S.A. in 1997. He served as Director of the IBS of Bangladesh Studies during 2000-2002. He worked as executive editor of the IBS Journal during 2000-2002.

The Editorial Board of the IBS Journal deeply condole the untimely death and expresses deep sympathy to his family members.

THE MAHARSI AND THE AGNOSTIC : INTELLECTUAL CONFRONTATION BETWEEN DEBENDRA NATH TAGORE AND AKSHAY KUMAR DATTA

Priti Kumar Mitra*

Abstract : Debendra Nath Tagore and Akshay Kumar Datta, two foremost nineteenth-Century Bengali intellectuals, worked, thought and wrote together while waging an ideological and epistemological war between themselves. The dialogue evolved through phases eventually unveiling Debendra Nath as a spiritual 'seer' (*maharṣi*) and Akshay Kumar as an agnostic advocate of science. Debendra Nath settled in monotheism early in life and endeavoured to establish it in theory and practice through his research work as the second founder of the Brahmo religion. For the same purpose he would avoid the contemporary spirit of social reform and emancipation of women. Akshay Kumar, on the other hand, was initiated to Western science in his teens and would pass through several phases of metaphysical convictions in search of a proper philosophy of science. On the way, he shared Brahmo monotheism with Debendra Nath for a few years then switching over to Deism around 1850. By 1855 he would arrive at agnosticism and combine science with social welfare—a position that he not only maintained throughout the rest of his life, but undertook a two decade long search in ancient Indian thought to find confirmation of his ideas as against those of Debendra Nath and other later-day Brahmos.

1. Introduction

Debendra Nath Tagore (1817-1905) and Akshay Kumar Datta (1820-86), two foremost Bengali intellectuals who flourished in mid-nineteenth century Kolkata, were contemporaries, colleagues and companions on the one hand, but represented two opposite vistas of thought and outlook on the other. They worked, thought and wrote together using the same platform and tactfully arranging their differences as complementary. Debendra Nath's spirituality and Akshay Kumar's science promoted each other's cause in a peculiar relationship on the pages of the same journal. However, the precarious cooperation could not go for long and the two fell out as intellectual rivals—Debendra Nath posing as a staunch monotheist and a spiritualist of the highest order and Akshay Kumar emerging as an agnostic preacher of science and this-worldly progress. Study of Western philosophy made Debendra Nath abandon popular Hinduism and then Ram Mohan Roy's (1774-1833) writings would settle him in monotheism. His later research in the *Vedas* and *Upaniṣads* was only to strengthen his belief in non-idolatrous monotheism. Akshay Kumar, on the other

*Dr. Priti Kumar Mitra, Professor of History, Institute of Bangladesh Studies (IBS), Rajshahi University, Bangladesh.

hand, lost faith in Hinduism due to acquaintance with European science. His subsequent studies in the sciences as well as in ancient Indian scriptures and philosophies successively guided him through theism, deism and agnosticism, slightly by-passing atheism. Following is an attempt to trace the history of the dialectic in all its stages and aspects and achieve an interpretative conclusion.

2. The Two Men

2.1 Formative Stage

The mainstay of Akshay Kumar Datta's intellectual growth was his steadfast love for and study of science. The process started early when, at age 10 (c. 1830), he came across a bilingual (Anglo-Bangla) work on geography and astronomy by John. D. Pearson (1790-1831). This book entitled *Bhūgol ebang Jyōtiṣ* [Geography and Astronomy] (1824) instantly dispelled the Hindu myths he had known about such natural phenomena as rain, lightning, tides and eclipses.¹ This discovery of science kindled in Akshay Kumar a craving for more of it and he felt the necessity of learning English, the key to the new knowledge. He mastered the language in a few years with the help of several private tutors, a missionary school, and finally a secular school called Oriental Seminary.²

Along with English, Akshay Kumar continued his study of the sciences both in and out of school. These included branches of mathematics as well as physics, astronomy, geography meteorology, physiology, phrenology, and psychology.³ The extra-academic books of science he perused included Joyce's *Scientific Dialogue* too.⁴ Akshay Kumar's view of spirituality also kept changing to the level of his acquaintance with science and scientific history. Born a regular Hindu in 1820 he lost faith in polytheism early, as he came to know the failure of Greek polytheism in face of Christian monotheism. Study of physics, geography, meteorology and other sciences likewise demolished his faith in *Purāṇic* Hinduism.⁵ At this point, when science had overcome Hinduism in his mind, the nineteen-year old youth met in 1839 a most benevolent friend, Debendra Nath Tagore, who would turn into his intellectual rival a decade later.

Intellectually, Debendra Nath represented the very antithesis of Akshay Kumar Datta. Born to rich Hindu parents in 1817 Debendra Nath attended the Hindu College, Kolkata, in early thirties. He then surveyed modern European philosophy only to grow, by 1838, totally disgusted with its preoccupation with nature and its relative

¹ Madendra Nath Ray, *Shriyukta Bābu Akṣaykumār Datter Jīban-Bṛittānta* [Biography of the Illustrious and Respectable Akshay Kumar Datta] (Kolkata: Sanskrita Yantr Pustakalaya, 1885), pp. 8-9. Nabendu Sen, *Gadyashilpi Akṣaykumār Datta o Debendranāth Thākura* [Prose Writers Akshay Kumar Datta and Debendra Nath Tagore] (Kolkata : Jijnasa, 1971), pp. 5-6.

² Ray, *Jīban-Bṛittānta*, pp. 9-19.

³ Nakur Chandra Bishwas, *Akṣay-Charit* [Life of Akshay (Kumar Datta)] (1887), as quoted in Brajendra Nath Bandyopadhyay, *Akṣaykumār Datta*, 5th ed., *Sāhitya-Sādhak-Charitmālā*-12, (Kolkata: Bangiya Sahitya Parishat, 1960), p.8 (*Sāhitya-Sādhak-Charitmālā* is hereafter cited as SSC).

⁴ Ray, *Jīban-Bṛittānta*, p.27.

⁵ Ibid., pp. 20-21.

indifference to divinity.⁶ An obstinate seeker of God, he next turned to the *Upaniṣads* as well as engaged in a mystic search for knowledge within himself.⁷ In October 1839 Debendra Nath founded the *Tattvabodhinī Sabhā* [Society for Understanding Truth] of which Akshay Kumar would become a member in December, the same year, when the two men would first meet. Debendra Nath continued his *Vedāntic* (i.e. *Upaniṣadic*) deliberations only to discover their similarities with Ram Mohan Roy's (1774-1833) ideas.⁸ Accordingly in...1842 the *Sabhā* was amalgamated with the Brahmo *Samāj* (founded by Roy back in 1828) and Debendra Nath came close to formally adopting the Brahmo religion.

2.2 Getting Along

Meanwhile Akshay Kumar Datta's involvement with Debendra Nath's constructive works kept growing. He served the *Tattvabodhinī Sabhā* as an assistant secretary for sometime.⁹ He also served the *Sabhā's* Bangla school, the *Tattvabodhinī Pāthshālā*, for nearly three years (June 1840-April 1843) as an instructor of physics and geography.¹⁰ But Akshay Kumar had more ideas and plans to work along. In June 1842 he started the monthly *Vidyādarshan* [Vision of Science] with the lofty ideal of experimenting simpler style; introducing innovations in creative writing; transmitting historical, scientific and ethical knowledge in translation; as well as fighting a rationalist crusade against evil social customs.¹¹ *Vidyādarshan* however would not survive the poverty of its ambitious founder and disappeared in six months leaving him in need of a stabler alternative and, perhaps inspiring Debendra Nath to provide his *Sabhā* with a similar organ. In a written test Debendra Nath chose Akshay Kumar

⁶ Debendra Nath reports in his autobiography :

আমি যুরোপীয় দর্শনশাস্ত্র বিস্তার পড়িয়াছিলাম। . . . ভাবিলাম, 'প্রকৃতির অধীনতাই কি মনুষ্যের সর্বস্ব? . . . ইন্দ্রিয় দ্বারা মনের মধ্যে বাহ্য বস্তুর একটা অবভাস হয়। ইহাই তো জ্ঞান।' . . . যুরোপের দর্শনশাস্ত্র আমার মনে এইরূপ আভাস আনিয়াছিল। এক জন নাস্তিকের নিকট এইটুকুই যথেষ্ট; সে প্রকৃতি ছাড়া আর কিছু চায় না। কিন্তু আমি ইহাতে কিরূপে তৃপ্ত হইব? আমার চেষ্টা ঈশ্বরকে পাইবার জন্য। Debendra Nath Tagore, *Ātmajībanī* [Autobiography] (1898), ed. by Satish Chandra Chakrabarti, 4th ed., (Kolkata: Vishvabharati Granthalay, 1962), p. 13 (hereafter referred to as *Ātmajībanī*).

⁷ Ajit Kumar Chakrabarti, *Maharṣi Debendranāth Thākura* [Debendra Nath Tagore, The Great Sage], 150th anniversary ed. (Kolkata: Jijnasa, 1971), pp. 50-52.

⁸ Ram Mohan Roy, a close friend of Debendra Nath's father, Dwaraka Nath Tagore (1794-1846), had left pluralist Hinduism to propose a monotheist, non-idolatrous worship known as Brahmo Dharma (Brahmo religion = Brahmoism) after 'Brahma' (deification of the *Vedāntic* concept of Absolute Being).

⁹ According to notices in the *Tattvabodhinī Patrikā* no.s. 43 & 44 (*Phālgun* & *Chaitra* 1768 *Shaka*/ Feb-April 1847) : 460, 484, Akshay Kumar retired from this position by April 1847.

¹⁰ Bishwas, *Akṣay-Charit* as quoted in SSC-12, pp. 14-15.

¹¹ *Vidyādarshan* specified its goal in its first issue in these words :

এতৎপক্ষে এমত সকল বিষয়ের আলোচনা হইবেক, যদ্বারা বঙ্গভাষায় লিপিবিদ্যার বর্তমান রীতি উত্তম হইয়া সহজে ভাব প্রকাশের উপায় হইতে পারে। যত্বপূর্বক নীতি ও ইতিহাস এবং বিজ্ঞান প্রভৃতি বহু বিদ্যার বৃদ্ধি নিমিত্ত নানা প্রকার গ্রন্থের অনুবাদ করা যাইবেক, এবং দেশীয় কুরীতির প্রতি বহুবিধ যুক্তি ও প্রমাণ দর্শাইয়া তাহার নিবৃত্তির চেষ্টা হইবেক। তন্নিম্ন রূপকাদি লিখনে এক ২ প্রকার নূতন নিয়ম প্রস্তত করা যাইবেক। Quoted in SSC 12, p. 18.

as editor of the proposed monthly,¹² and the *Tattvabodhinī Patrikā* began publication in August 1843.

Thus, convenience bound the two men together and they began to influence each other. Spiritualist Debendra Nath felt that European science could even help out his monotheism by providing a better understanding of the design of the universe.¹³ Akshay Kumar, on the other hand, thought that religion could be a good companion of science which needed smooth propagation in this country of spiritual obsession.¹⁴ So the two moved nicely together and, on December 21, 1843, they formally adopted the Brahmo religion with nineteen others.¹⁵ Conversion of the young and affluent Debendra Nath to Brahmoism rescued the religion of Ram Mohan Roy from extinction and he became the patron and undisputed leader of the Brahmo movement. Now, with nearly three decades of history (Ram Mohan had started publishing his *Vedāntic* works in 1815), the association of 'Raja' Ram Mohan Roy's legendary name, the ancient philosophy of *Vedānta* as an impregnable creed, a vivacious organization (the *Sabhā*), a missionary school (the *Paṭhshālā*), a powerful organ (the *Patrikā*), and zealous leadership of wealthy and essentially conservative Debendra Nath, —the Brahmo *Samāj* emerged in the mid-forties as a formidable orthodoxy ready to risk a protracted battle (1844-1846) with the aggressive Presbyterian missionary Alexander Duff (1805-78).¹⁶

Akshay Kumar's formal entry into the Brahmo fold however hardly meant any actual conversion to *Vedāntic* spiritualism. In fact, as editor of the *Tattvabodhinī Patrikā*, he took every care to consolidate his role as a seeker and propagator of scientific truth. Debendra Nath's motto in launching the journal had been clearly religious—"to propagate the *Vedas*, *Vedānta* and the worship of the Supreme *Brahma*."¹⁷ Akshay Kumar, on the other hand, intended to delve into physics,

¹² Priya Nath Shastri (ed.), *Maharṣi Debendranāth Thākurer Swarachita Jīban-Charit* [Life of Maharsi Debenra Nath Tagore as Written by Himself] (Kolkata: Priya Nath Shastri, 1898), p. 29.

¹³ The very first issue of the *Tattvabodhinī Patrikā* carries this view of Debendra Nath which he had expressed on the occasion of transfer of the *Tattvabodhinī Paṭhshālā* to its new house at *Bānshberīā* near Kolkata in May 1843. "Tattvabodhinī Paṭhshālā", *Patrikā* no. 1 (*Bhādra* 1765 *Shaka*/Aug-Sept 1843): 5-6. (From now on *Tattvabodhinī Patrikā* will be referred to as the *Patrikā*).

¹⁴ On the occasion just referred to in note 13 Akshay Kumar welcomed the spread of science and said: "বঙ্গভাষায় বিজ্ঞানশাস্ত্র এবং ধর্মশাস্ত্রের উপদেশ প্রদান করিতে তত্ত্ববোধিনী সভা অদ্য . . . এতৎ পাঠশালারূপ নবকুমার প্রসব করিলেন।" *Ibid.*, no. 2. (*Āshwin*, 1765/ *Shaka*/Sept-Oct 1843): 11-12. Later, Akshay Kumar would more eloquently advocate the need for a combination of science and religion. See. chap. 10 in his *Bāhya Bastur Sahit Mānab Prakritir Sambandha Bichār* [An Examination of the Relationship between Human Nature and the Outside World of Matter], vol. 2, 2nd impr. (Kolkata: G. P. Ray & Co., 1777 *Shaka*/1855), pp. 156-172 (hereafter referred to as *Bāhya Bastu*).

¹⁵ Priya N. Shastri, *Jīban-Charit*, p. 37.

¹⁶ For a systematic description of the Duff-Brahmo confrontation see Ajit K. Chakrabarti, *Maharṣi Debendranāth*, pp. 104-12.

¹⁷ Translated. Bangla original; "বেদ, বেদান্ত ও পরব্রহ্মের উপাসনা প্রচার করা আমার . . . মুখ্য সংকল্প ছিল . . ." Priya N. Shastri, *Jīban-Charit*, p. 30. See also the statemet of objectives on the first page of the first issue of the *Patrikā* (*Bhādra* 1765 *Shaka*/ Aug-Sept 1843).

chemistry, natural history, astronomy, anatomy, physiology as well as ethics, sociology, and the antiquities on the pages of the *Patrikā*.¹⁸ Accordingly, he joined the Kolkata Medical College as an unclassified student taking courses in botany, zoology, chemistry, physics, as well as other material and life sciences.¹⁹ As a result, soon the *Patrikā* became a vehicle of both the ideals; and this duality, working in a complementary manner, greatly enhanced the *Patrikā*'s quality. *Vedānta* and Brahmo doctrines dominated, as Debendra Nath wished, the first three issues. The fourth issue however carried Akshay Kumar's article on the mechanism of the universe — perhaps the first ever on a scientific topic written in Bangla.²⁰ Thus, Akshay Kumar introduced science in the *Patrikā* five weeks before his 'conversion' to Brahmoism and the trend would grow fast to have the journal feature a regular science section before long.

Despite their basic differences Debendra Nath and Akshay Kumar were initially getting along well in the *Sabhā* and the *Patrikā*. One reason for this adjustment was convenience—both needed each other. Akshay Kumar had the most powerful pen among the members of the *Sabhā* and it was indispensable for Debendra Nath²¹ who sought to propagate his religion through the *Patrikā*. The *Sabhā* and the *Patrikā*, safeguarded by the money and zeal of Debendra Nath, provided the best forum for Akshay Kumar, a poor man with lots of ideas.²² As for the juxtaposition of science and religion, they managed to accommodate it in their respective schemes through the convenience of the 'design argument' in favour of a monotheistic authorship of the universe. This can be illustrated by two representative statements by the two men early in the *Patrikā*. Debendra Nath seeks confirmation of his God through scientific exposure of the cosmic design :

When instructed about the extremely adroit composition of the wonderful universe and thereby enlightened, . . . they [young learners] do feel that this endless creation must have one creator and controller who is infinite, . . . as well as all wisdom.²³

¹⁸ . . . পদার্থবিদ্যা, রসায়ন, প্রাকৃতিক ইতিবৃত্ত, নানা জাতীয় পুরাবৃত্ত, ধর্মনীতি, স্বদেশীয় সামাজিক ব্যবস্থা, জ্যোতিষ, শারীর স্থান, শারীর বিধান . . . etc. *Tattvabodhini Patrikā*, no. 119 (*Āṣāḍh* 1775 Shaka/June-July 1853); quoted in Sushil Kumar De, *Bengali Literature in the Nineteenth Century*, 2nd rev. ed. (Kolkata: Firma K. L. Mukhopadhyay, 1962), p. 608.

¹⁹ Ray, *Jīban-Brittānta*, p. 76. Bishwas, *Akṣay-Charit* as quoted in SSC 12, p. 19. Sibnath Shastri, *Rāmtanu Lāhiḍī o Tatkalīn Baṅgasamāj* [Ramtanu Lahiri and the Bengali Society of His Time], 2nd ed. (1909), rep. (Kolkata: New Age Publishers, 1955), p. 206. Ajit K. Chakrabarti, *Mahārṣi Debendranāth*, p. 61.

²⁰ Ajit K. Chakrabarti, *Mahārṣi Debendranāth*, p. 61. For the article itself see *Patrikā*, no. 4 (*Agrahāyaṇ* 1765 *Shaka*/no.v-Dec 1843) : 25-27.

²¹ Priya N. Shastri, *Jīban-Charit*, pp. 29-30. Debendra Nath observers : তাঁহার [Akshay Kumar's] রচনা অতিশয় হৃদয়গ্রাহী ও মধুর । . . . অমন রচনার সৌষ্ঠব তৎকালে অল্প লোকেরই দেখিতাম ।

²² A touching account of the ideas and plans that filled Akshay Kumar's "hṛidayastha puṣpodyān" ["flower garden in the heart"] is to be found in an eloquent statement by himself in the preface of his *Bhāratbarṣiya Upāsak Sampradāy* [Indian Religious Sects], vol. 2 (Kolkata, 1883), p. 278. For Bangla excerpt see note 104.

²³ Debendra Nath's speech at *Bāñshberīā*. Translated. Bangla original :

Akshay Kumar, on the other hand, annexes belief in God to his science by means of a similar logic :

When it is known through science that this universe is unlimited and extremely flawless, then who may not develop such a belief that the Lord of the Universe is full of wisdom and is infinite in nature.²⁴

Both Debendra Nath and Akshay Kumar were sincerely concerned about language, culture and national identity of their countrymen, as well as the question of a proper religion in the age of science. Debendra Nath was convinced that only a monotheistic religion can live with science. Therefore, as soon as science explodes idolatry and polytheism, young Hindus find themselves nowhere, or they embrace Christianity. In this crisis it is his *Vedāntic* monotheism [?] that could shelter the shipwrecked Hindus and safeguard Indian culture in the age of science to come.²⁵ Likewise, Akshay Kumar also expressed concern over the threat of loss of national identity through imposition of English language and Christian religion on the people of his country under British rule.²⁶ His view on the prospect of religion in the age of science was however significantly different from that of Debendra Nath. Akshay Kumar was aware of the incompatibility of science and religion and predicted a general demise of all established religions, including Christianity, in the age of science. In that situation, he envisioned, Brahmoism would triumph on condition that it completely purifies itself in the light of science and operates from a common platform with the latter :

All the religions found in countries all over the world will suffer defeat at the hands of science and disappear one after another. Then the most purified and true religion will share a common hegemony over earth with science. . . . This Brahmoism of ours is that religion. That religion is here.²⁷

. . . অত্যন্ত নিপুণরূপে বিচিত্র সৃষ্টির রচনার বিষয়ে অনুশিষ্ট হইয়া জ্ঞানের উদ্ভেদে . . . তাহারদিগের বোধ হয় যে এই অনন্ত সৃষ্টির স্রষ্টা এবং নিয়ন্তা অবশ্য একজন আছেন যিনি অনন্তস্বরূপ, . . . এবং তিনি জ্ঞানস্বরূপ . . . । *Patrikā*, no. 1 (*Bhādra* 1765 *Shaka*/Aug-Sept 1843) : 6.

²⁴ Translated. Bangla original :

. . . যখন বিজ্ঞান দ্বারা জ্ঞাত হওয়া যায় যে এই বিশ্ব অনন্ত এবং যৎপরোনাস্তি উৎকৃষ্ট, তখন কাহার মনে এরূপ বিশ্বাস না জন্মে যে জগদীশ্বর জ্ঞানে পরিপূর্ণ এবং স্বভাবে অনন্ত । *Ibid.* no. 4 (*Agrahāyaṇ* 1765 *Shaka*/no.v-Dec 1843) : 25.

²⁵ These ideas were expressed by Debendra Nath Tagore in his *Bāṁshberīā* speech (early May 1843). *Ibid.*, no.. 1 (*Bhādra* 1765 *Shaka*/Aug-Sept 1843) : 4-6. An excerpt :

. . . ইংরাজী বিদ্যার দ্বারা চতুর্দিকে জ্ঞানের স্ফূর্তি হইতেছে, অতএব আমারদিগের চিরকালের যে বেদান্ত শাস্ত্র, . . . তাহাই এইক্ষণে প্রকাশ করা অতি আবশ্যক হইয়াছে; এই বেদান্ত শাস্ত্রের প্রচারাব্যবস্থায় স্বধর্ম থাকিয়া ঈশ্বরজ্ঞান দ্বারা চরিতার্থ না হইয়া নিরাশ্রাসে অনেকে বিজাতীয় খ্রীস্টান ধর্ম প্রভৃতি অবলম্বন করিতেছে । *Ibid.* p. 6.

²⁶ See Akshay Kumar's *Bāṁshberīā* speech, *ibid.* no.. 2 (*Āshwin* 1765 *Shaka*/ Sept-Oct 1843) : 11. A quote :

. . . আর কিয়ৎকাল গোঁগে ইংরাজদিগের সহিত আমারদিগের কোন বিষয়ে জাতীয় প্রভেদ থাকিবেক না, তাহারদিগের ভাষাই এদেশের জাতীয় ভাষা হইবেক, এবং তাহারদিগের ধর্মই এদেশের জাতীয় ধর্ম হইবেক, সুতরাং ব্যক্ত করিতে হৃদয় বিদীর্ণ হয়, যে . . . আমারদিগের পরের নামে বিখ্যাত হইবার সম্ভাবনা দেখিতেছি ।

²⁷ Akshay Kumar's speech at the Bhowanipore Brahmo *Samāj* (April 1855). Translated. Original Bangla :

Thus, Akshay Kumar appears to have been optimistic about the possibility of a scientific redefinition of Brahmoism. He must have found the simple monotheism of Ram Mohan Roy a manageable raw spirituality that could still be remodelled to fit with science. In fact, he would soon (1852) be ready with a complete thesis of an *entente cordiale* between science and religion : The world would gain the most "if science is linked to religion, i.e. if our heart is directed by religious instincts to follow the laws of nature as determined by science." . . .²⁸ Therefore,

. . . it is absolutely necessary that religious teachers learn the sciences which deal with the laws of nature and . . . instruct disciples and clients in them. If science is hooked up with religion in this manner, possibility would open for vast well-being.²⁹

3. The Great Dialectic

3.1 Conflict over Infallibility of the *Vedas*

An intellectual dialectic between Debendra Nath and Akshay Kumar took place from the very beginning. Debendra Nath was aware of his editor's independence of mind and used to delete ideas he did not like from Akshay Kumar's draft articles before publication in the *Patrikā*.³⁰ But this situation could not stay for long. Akshay Kumar had to show recalcitrance when a question too fundamental for him to swallow came along. Alexander Duff, the formidable Scottish missionary of Kolkata, had attacked Indian culture and religions in his book *India and India Missions* published in 1839. In keeping with the *Tattvabodhini Sabhā's* spirit of anti-missionary cultural nationalism referred to above, the *Patrikā* published a severe criticism of Duff's book in an English article in September 1844. It immediately ignited a Christian-Brahmo controversy over religious questions that raged for more than two years.³¹ It fatefully produced also a micro-controversy among the Brahmos themselves over the question of *Vedic* infallibility. In this important dialogue Debendra Nath and Akshay Kumar faced each

যত দেশে যত ধর্ম প্রচলিত আছে, সমুদায়ই বিদ্যা সন্নিধানে পরাভূত হইয়া কালের করাল গ্রাসে অগ্রপশ্চাৎ প্রবেশ করিবে, এবং তখন পরম পরিশুদ্ধ প্রকৃত ধর্ম বিদ্যাসহ এক সিংহাসনে অধিরূঢ় হইয়া অবনি-মণ্ডলে [sic] আধিপত্য করিত প্রবৃত্ত হইবেন। . . . আমাদিগের ব্রাহ্ম-ধর্মই এই ধর্ম। সে ধর্ম এই। Ibid. no. 141 (*Baishākh* 1777 *Shaka*/April-May 1855) : ৬, ৯.

²⁸ Translated. Original Bangla:

বিদ্যার সহিত ধর্মের যোগ থাকিলে, অর্থাৎ বিদ্যা দ্বারা যে সকল প্রাকৃতিক নিয়ম অবধারিত হয়, ধর্ম প্রবৃত্তি দ্বারা সেই সমস্ত প্রতিপালন বিষয়ে অন্তঃকরণ নিয়োজিত হইলে . . .। *Bāhya Bastu*, vol. 2, p. 158. For the whole thesis peruse chapter 10 of this work entitled "Bidyā o Dharmer Paraspar Sambandha Bichār" [An examination of the mutual relationship of science and religion], *ibid.*, pp. 156-72.

²⁹ Translated. Original Bangla :

ধর্মোপদেশকদিগের পক্ষে প্রাকৃতিক নিয়ম বিষয়ক বিদ্যাসকল শিক্ষা করা এবং তাহা শিষ্য যজমান প্রভৃতিকে উপদেশ দেওয়া সর্ব্বতোভাবে বিধেয়। এইরূপে বিদ্যার সহিত ধর্মের সংযোগ হইলে মহোপকার সম্ভাবনা। Ibid., p. 168.

³⁰ See *infra*, fn. 113.

³¹ The battle was fought principally between Duff's *Calcutta Review* and Tagore's *Tattvabodhini Patrikā*. It is reflected in its various aspects in the *Patrikā* from no. 14 (*Āshwin* 1766 *Shaka*/Sept-Oct 1844) through no. 44 (*Chaitra* 1768 *Shaka*/Mar-Apr 1847). Other journals involved in this controversy included the *Christian Herald*, *Friend of India*, *Calcutta Standard*, *Englishman* and *Jagadbandhu* [Friend of the World] (Bangla).

other as rivals. This historic confrontation was to produce significant results — Akshay Kumar would emerge as a Deist, Debendra Nath would evolve into a 'rishi' (seer of spiritual truth as well as giver of religious laws) and, in between, Brahmoism would shake off *Vedic* hegemony and develop its own dogmas to guard against Deism.

In reaction to the *Patrikā's* criticism of *India and India Missions* Duff, in *Calcutta Review*, assailed the principles of the Brahmo *Samāj* and challenged infallibility of the *Vedas* as well as validity of the philosophy of *Vedānta*. Debendra Nath decided to champion the cause of the *Vedas*. A number of articles and rejoinders appeared in different issues of the *Patrikā* in 1845. One of these asserted that "the Vaidas and Vaidas alone . . . are the sole foundation of all our belief." Although it denied eternity of the *Vedas* and took them as created, it declared them to be divine revelations.³² A year later, Debendra Nath himself would declare in a letter to the *Englishman*: "We consider the Vaidas and the Vaidas alone as the standard of our faith and principles . . ."³³ This position was however not acceptable to Akshay Kumar Datta and he began to discuss the matter privately with Debendra Nath while the *Patrikā* continued to carry the latter's views. Soon a group of *Sabhā* members, mostly Brahmos, rallied round Akshay Kumar to form an 'advanced and rationalist party' within the *Samāj*. A voice of dissent was heard, incessant debate enlivened the Kolkata circle of Brahmos, and before long it found vent in the *Patrikā* in the shape of letters to the editor and replies to them.³⁴ In several letters infallibility of the *Vedas* was directly challenged and objection was raised against the polytheistic and idolatrous content of the *Vedic* texts. In reply, the *Patrikā* repeatedly upheld the infallibility of the *Vedas* in their entirety irrespective of content.³⁵

Despite these assertions Debendra Nath and his followers had not been feeling very free with their position because of their lack of knowledge of the *Vedas*, the texts being so scarce in Bengal in those days. He therefore sent four students to Banaras to study the four *Vedas* in the original with eminent specialists. As staunch monotheists, the Debendra group were increasingly facing difficulty to defend the polytheistic content of the *Vedas* proper. So gradually and silently they were shifting

³² *Patrikā*, no.. 26 (*Āshwin* 1767 *Shaka*/Sept-Oct 1845) : 221.

³³ *Ibid.*, no.. 40 (*Agrahāyaṇ* 1768 *Shaka*/no.v-Dec 1846) : 382.

³⁴ Sibnath Shastri, *History of the Brahmo Samaj*, 2nd ed., (Kolkata: Sadharan Brahmo Samaj, 1974), pp. 64-65. It is not very clear as to who formed the "advanced and rationalist party" under Akshay Kumar's leadership. However, Brahmos and skeptics like Ananda Krishna Basu (1822-97), Ishwar Chandra Vidyasagar (1820-91), Rajendra Lal Mitra (1822-91), Prasanna Kumar Sarbadhikari (1825-86)—most of whom were Akshay Kumar's personal friends and some belonged to the editorial board of the *Patrikā*—perhaps shared his views on the question of *Vedic* infallibility (*Ibid.*, p. 65). Outside the *Samāj* and the *Patrikā* circles, Akshay Kumar had the assent of the Derozians who considered Debendra Nath's faith in the *Vedas* hypocritical. (Sibnath Shastri, *Rāmtanu Lāhiṇī*, p. 164). In early eighteen-fifties two radical Brahmos, Rakhai Das Haldar (1832-87) and Ananga Mohan Mitra, would join the Akshayan circle to fight for further change in the Brahmo *Samāj* and religion.

³⁵ For example, *Patrikā*, no. 23 (*Āsāḍh* 1767 *Shaka*/June-July 1845) : 192—"বেদবাক্য মাত্রই সত্য, তাহার কোন অংশই অসত্য হইতে পারে না।" *Ibid.*, no. 25 (*Bhādra* 1767 *Shaka*/Aug-Sept 1845) : 212—"পরম সত্য যে বেদ তাহার উপদেশানুসারে ধর্মনিষ্ঠান করাই শ্রেয়ঃ।" And so on.

their emphasis to the *Upaniṣads*, the last accrual to the *Vedic* literature, distinctly known for their monist-monotheist bias. Members of the group preferred to refer to the *Upaniṣads* as *Vedānta* [lit. Conclusion of the *Vedas*], the traditional collective name for those books, while distinguishing it from the *Vedānta Darshan* [Vedāntic philosophy] of *Vyāsa* as interpreted by *Śhaṅkara* (c. 788-820 A.D.) as a system of pure monism.³⁶ Early in 1846 the orthodox party would aptly declare in the *Patrikā*: "Vedantism is our creed and [the] Opanishud[s] our book of religion."³⁷ Technically, this position was designed to save the prestige of the *Vedas* while sheltering Brahmo monotheism in *Upaniṣadic Vedānta*.

As part of this strategy, the orthodox distinguished between the *Karmakāṇḍa* [Action Part] and *Jñānakāṇḍa* [Wisdom Part] of the *Vedas*. The former consists of the *Vedic* texts proper dealing with rituals and polytheistic worship, while the latter comprises the *Upaniṣads* that deal with the Ultimate Truth. In face of rationalist attacks, they argued that the *Karmakāṇḍa* was meant for weaker worshipers who were unable to cope with the gigantic truth of monotheism while the *Jñānakāṇḍa* suited the more intelligent believers who were ready to comprehend the truth and act accordingly. With the spread of such higher consciousness the entire *Karmakāṇḍa* could one day be rendered useless.³⁸ And it had actually become irrelevant already for the Brahmos who needed to follow the *Jñānakāṇḍa* only. Yet the *Vedas* were infallible in their entirety comprising both the *kāṇḍas*. In this delicate situation the orthodox declared the *Upaniṣads* to be the head of the *Vedas* instead of being the 'tail' [i.e. conclusion] as tradition affirms.³⁹

Even as late as March 1847 the *Patrikā* was holding on this peculiar position: "Above all, the *Vedas* alone are to be respected in their entirety. The worship of *Brahma* as professed by the *Upaniṣads* that are included in the *Vedas* has been the duty of the Brahmos."⁴⁰ Thus, without somehow loosing their infallibility the principal text of the *Vedas* lost all relevance to Brahmoism. The glaring contradiction of the position increasingly made it indefensible. At this point the desperate condition of the

³⁶ Note statements in the *Patrikā* no. 42 (*Māgh* 1768 *Shaka*/Jan-Feb 1847): 410 fn. and no.. 44 (*Chaitra* 1768 *Shaka*/Mar-Apr 1847): 474. See also Debendra Nath's own observations in *Ātmajīvanī*, pp. 26, 37-38, 165.

³⁷ Response to a challenge from the editor of *Calcutta Standard*. *Patrikā*, no.. 32 (*Chaitra* 1767 *Shaka*/Mar-Apr 1846): 276.

³⁸ Answer to a skeptic's letter to the *Patrikā*: শ্রুতি বুদ্ধিমানের জন্য যেরূপ পরব্রহ্মের উপাসনার উপদেশ দিয়াছেন, তদসমর্থ ব্যক্তিদিগের মনঃস্থিরের জন্য শাস্তকারি কর্মকাণ্ডের বিধান করিয়াছেন। ক্রমশঃ জ্ঞানের বৃদ্ধি এ প্রকার হইবারও সম্ভাবনা আছে যে তখন কর্মকে আর কেহ অবলম্বন করিবেন না, সুতরাং তখন বেদের কর্মকাণ্ডীয় ভাগ বিফল হইবার সম্ভাবনা। *Patrikā*, no. 23 (*Āsādh* 1767 *Shaka*/June-July 1845): 193

³⁹ Ibid., no.. 28 (*Agrahāyaṇ* 1767 *Shaka*/no.v-Dec 1845): 243. A quote:

বেদশাস্ত্র সর্বতঃ মান্য এবং তদন্তর্গত জ্ঞানকাণ্ড কি কর্মকাণ্ড সম্বন্ধীয় যেকোন বাক্য তাহাও সম্যক্ গ্রাহ্য। বেদের শিরোভাগ উপনিষদের প্রতিপাদ্য ব্রহ্মজ্ঞানে যাঁহারা প্রবৃত্ত হইয়াছেন, তাঁহাদেরিগের আর কর্মকাণ্ডে কোন প্রয়োজন নাই... Emphasis supplied.

⁴⁰ Translated. Original Bangla:

অথরূপে সর্বোপরি এক বেদই মান্য। সেই বেদ অন্তর্গত উপনিষৎ প্রতিপাদ্য ব্রহ্ম উপাসনা ব্রাহ্মদিগের অনুষ্ঠেয় হইয়াছে। *Patrikā*, no. 44 (*Chaitra* 1768 *Shaka*/Mar-Apr 1847): 475.

lovers of the *Vedas* is reflected in a letter to the *Patrikā's* editor which asserted that the *Vedas* were undoubtedly authored by God, and it appealed to one and all that they stop all arguments and accept the authority of the *Vedas* in faith and worship.⁴¹ These actually represented the last cry for the *Vedas*, for the very next month (*Baishākh* 1769 *Shaka*/ April-May 1847) the *Patrikā* would appear with the death sentence of the *Vedas* on its forehead.

The Akshayan dissidents who formed the majority in the *Patrikā's* 'Paper Committee'⁴² were looking for some authoritative statement to strengthen their position and overthrow the *Vedas*. Luckily for them, the *Upaniṣads* themselves came to their rescue as they discovered the following passage in the *Muṇḍaka Upaniṣad* dismissing the four *Vedas* and their six derivatives as books of inferior knowledge :

Aparā Ṛigvedo Yajurvedah Sāmavedo'tharavedah Shikṣhā Kalpo Vyākaraṇam Niruktam Chhandō Jyotiṣamiti. Atha parā yayā tadaksharamadhighamyate.—*Muṇḍaka* 1.1.5.

[The *Rik*, *Sāma*, *Yajuh* and *Atharva Vedas* as well as *Shikṣā* (science of Vedic pronunciation), *Kalpa* (manual of Vedic rituals), *Vyākaraṇa* (Vedic grammar), *Nirukta* (Vedic lexicon), *Chhandah* (Vedic prosody), and *Jyotiṣa* (Vedic astronomy) are all inferior (knowledge). And superior is the knowledge through which one can understand that Immutable Indestructible Truth.]⁴³

The very first issue of the *Patrikā* in 1769 *Shaka* (April-May 1847) carried this *Muṇḍaka* dictum on top of its first page.⁴⁴ This definitely marked defeat of the doctrine of Vedic infallibility and beginning of the ascendancy of Akshay Kumar Datta's views in the formation of Brahmo ideology. He would later discuss the background of this victory and assert that his companions decided to accept the *Muṇḍaka* passage only after rational deliberations.⁴⁵ He would again refer to it in the 'Introduction' of his *Bhāratbarṣiya Upāsak Sampradāy*, vol.1, many years later, to assail the *Vedas* once more.⁴⁶ The passage silenced Debendra Nath and his followers for the time being and they, retreating from their previous position, accepted the fallible nature of the *Vedas*.⁴⁷

⁴¹ Letter by *Kashchit Shradddhābān* [A Certain Devotee], *Ibid.*, pp. 479-80.

⁴² Editor Satish C. Chakrabarti's report in *Ātmajībanī*, p. 371.

⁴³ Translation by this investigator.

⁴⁴ *Patrikā*, no. 45 (*Baishākh* 1769 *Shaka*/Apr-May 1847). The *Patrikā* would continue to carry this *Shruti* [Vedic text], sometimes with other quotes, on its forehead till no.. 140 (*Chaitra* 1776 *Shaka*/Mar-Apr 1855).

⁴⁵ Relevant quote :

"তাহারা যুক্তিযোগে যথার্থ তত্ত্ব নিরূপণ করিয়া শাস্ত্র বিষয়ে এই পরম সত্য নিশ্চয় করিলেন যে, "অপরা ঋগ্বেদো . . ." The first speech of the 21st Annual Congress of the Brahmo Samāj. *Patrikā*, no. 91 (*Phālgun* 1772 *Shaka*/Feb-Mar 1851) : 162.

⁴⁶ *Bhāratbarṣiya Upāsak Sampradāy*, vol. 1, 'Upakramaṇikā' [Introduction], (Kolkata 1870); p. 118.

⁴⁷ Debendra Nath's own words:

আমরা উপনিষদের উপদেশে জানিলাম, 'ঋগ্বেদ, যজুর্বেদ, সামবেদ, অথর্ববেদ . . . এই সকল অশ্রেষ্ঠ বিদ্যা; আর যাহার দ্বারা পরব্রহ্মকে জানা যায়, তাহাই শ্রেষ্ঠ বিদ্যা।' এই কথা আমরা অতি শ্রদ্ধাপূর্বক গ্রহণ করিলাম। *Ātmajībanī*, p.89.

3.2 The Brahmo Bible (Debendra Nath)

At this moment of rising influence of the Akshayan party the *Tattvabodhini Sabha* dropped the name *Vedāntapratipādyā satya dharma* [true religion confirmed by the *Vedānta*] in favour of *Brāhmadharma* [The Brahmo religion] at its meeting on *Jaistha* 15, 1769 *Shaka* (towards end of May 1847). However, unlike the *Vedas* (meaning the *Karmakāṇḍa*), *Vedānta* would not fall so soon. It was a harder stuff to break since the *Upaniṣads* had been the mainstay of Ram Mohan Roy's theology. Even Akshay Kumar Datta had the highest apperception for them among all intellectual monuments of ancient India.⁴⁸ For Debendra Nath, of course, they constituted the supreme source of inspiration.⁴⁹ He was slow to accept the idea of dissociating *Vedānta* from the name of his community and religion. As late as September 1847 he wrote (or caused to be written) a "Historical Sketch of Vedantism" declaring that "The Vedantists call themselves Brahmos".⁵⁰ In fact, Debendra Nath was getting ready for a search in the *Vedas* themselves for the *Parā Vidyā* [superior knowledge] referred to in the *Muṇḍaka* passage. For this purpose he left for Banaras by the end of the month. Two seminars with *Vedic* scholars, discussions with the students he had earlier sent there, as well as further deliberations after return to Kolkata (Nov. 1847) dispelled his *Vedic* illusions and he finally discarded the *Karmakāṇḍic* texts of the *Vedas*.⁵¹ This shows that Debendra Nath had not got the *Muṇḍaka* message at first sight. The research however confirmed that his Brahma-centered monothesis was the *Parā Vidyā* he was looking for and it was also to be found in the *Upaniṣads*.⁵²

But more disillusionment was still in store for Debendra Nath as he now embarked upon an extensive investigation of the *Upaniṣads*. He would soon discover that the integrity of the *Upaniṣads* can not be relied upon as scores of spurious and sectarian texts had been later added to the list of eleven original *Upaniṣads*. One of these had even been manufactured in the sixteenth century in praise of the Islamic God, Allah!⁵³ More importantly, Debendra Nath was to realize that the *Upaniṣads* represent no uniform system of philosophy but a number of positions in metaphysics. To his

⁴⁸ Akshay Kumar's high appreciation of the *Upaniṣads* in the "Introduction" of his *Upāsak Sampradāy* may be remembered : উপনিষৎ-কর্তারা যে অতিমাত্রায় অনুধ্যানশীল ছিলেন . . . উপনিষদ্ আবৃত্তি মাত্রই ইহা সুস্পষ্ট প্রতীয়মান হইতে থাকে। তাঁহারা . . . মধ্যে মধ্যে যে সমস্ত অভিপ্রায় প্রকাশ করিয়া গিয়াছেন, তাহা পরিমার্জিত বুদ্ধি ব্যতিরেকে উদ্ভাবিত হওয়া সম্ভব নয়। . . . এক এক স্থলে এক একটি এরূপ অভিপ্রায় প্রকটিত আছে যে বোধ হয় অধুনাতন কালোত্তর বুদ্ধিমান অত্যন্ত লোক ব্যতিরেকে অন্যে তাহার প্রকৃৎরূপ তাৎপর্য-গ্রহে সমর্থ হয় না। *Upāsak Sampradāy*, vol 1, pp. 112-13.

⁴⁹ The story of Debendra Nath's first acquaintance with the *Upaniṣads* through a stray leaf of the *Īshopeniṣat* as edited by Ram Mohan Roy is well-known. For Debendra Nath's own account of the immediate inspiration as well as his avid reading of eleven *Upaniṣads* see *Ātmajībanī*, pp. 20-23.

⁵⁰ This declaration he made in a letter to the *Bengal Hurkaru* (24 Sept 1847). See editor Satish C. Chakrabarti's report in *Ibid.*, p. 378.

⁵¹ *Ātmajībanī*, pp. 89-93, 97-98. Debendra Nath's final decision : অতএব কর্মকাণ্ডের পোষক যে বেদ, তাহা দ্বারা ব্রহ্মোপসনা প্রচারের আশা একেবারে পরিত্যাগ করিতে হইল। এখন আমরা বেদ পরিত্যাগ করিয়া বেদসম্মানসী গৃহস্থ হইলাম। *Ibid.*, p. 98.

⁵² *Ibid.*, pp. 99-102.

⁵³ *Ibid.*, pp. 122-23.

much disappointment he even detected *Śhaṅkaric* monism as well as other disagreeable elements in the *Upaniṣads*.⁵⁴ The staunch monotheist was therefore debarred from making the *Upaniṣads* the foundation of his religion. The spectre of monism threatened to drive Debendra Nath away from the *Upaniṣads* as that of polytheism had earlier knocked him off the *Vedas*. He records his disappointment in the following words :

First we took to the *Vedas* but could not lay the foundation of Brahmo religion there. After that we turned to the eleven authentic *Upaniṣads*; what a bad luck! we are not being able to set the foundation there too!⁵⁵

Thus Debendra Nath, and for that matter the Brahmo religion, was finally freed from bondage of the *Vedas* and *Vedānta*. This has been described as "a great spiritual revolution" by one writer⁵⁶ and it is also generally acknowledged by distinguished Brahmos that Akshay Kumar Datta was instrumental in bringing about this liberation.⁵⁷ In 1847 Debendra Nath also believed in a progressive transmigration of soul. In the "Historical Sketch of Vedantism" (Sept 1847) referred to above he identified five fundamentals of "Vedantism" as he was still calling his religion. Akshay Kumar Datta and his followers did not share Debendra Nath's belief in transmigration.⁵⁸ A year later Debendra Nath would compose a four-*mantra* *Bija* [seed] of Brahmoism as a point of consensus of all Brahmos. The four *mantras* were largely based on the fundamentals of *Vedāntism*, but he would stop short of incorporating the idea of transmigration in the *Bija*.⁵⁹ This must be due to the influence of Akshay Kumar.

⁵⁴ Ibid., pp. 123-25. Debendra Nath was opposed to *Śhaṅkara's* monism, for he needed to worship God in a dualistic scheme of existence. For his categorical statement in his autobiography see *infra* note 87. Debendra Nath would later write a booklet titled *Ātmatattvavidyā* [Knowledge of the Truth about the Soul] to formally assail the two principal elements of *Śhaṅkara's* philosophy, viz., *advaitavāda* [non-dualism = monism] and *māyāvāda* [illusionism]. Editor Satish C. Chakravarti's report in *ibid.*, p. 395.

⁵⁵ Translated. Original Bangla :

প্রথমে বেদ ধরলাম, সেখানে ব্রাহ্মধর্মের ভিত্তি স্থাপন করিতে পারিলাম না। তাহার পরে প্রামাণ্য একাদশ উপনিষদ ধরলাম ; কি দুর্ভাগ্য, সেখানেও ভিত্তি স্থাপন করিতে পারিতেছি না! Ibid., p. 123.

⁵⁶ Kshitindra Nath Tagore in *Patrikā* (*Jaishtha* 1839 *Shaka*/May-June 1917), quoted in Tagore, *Ātmajībanī*, p. 378.

⁵⁷ For example, Sibnath Sastri writes :

তাহাকে [দেবেন্দ্রনাথ ঠাকুরকে] বেদান্তধর্ম ও বেদের অভ্রান্ততা হইতে বিচলিত করিতে অক্ষয় বাবুকে বহু প্রয়াস পাইতে হইয়াছিল। *Rāmtanu Lāhiṇī*, p. 181. Raj Narayan Basu informs: অক্ষয়বাবু যুক্তির অত্যন্ত অনুরাগী ও সংস্কারের বিষয়ে অগ্রসর। দুই জনে [দেবেন্দ্রনাথ ও অক্ষয়কুমার] তর্ক হইয়া স্থির হইল যে বেদকে আর ঈশ্বরপ্রত্যাদিষ্ট বলিয়া প্রতিপন্ন করা কর্তব্য নহে, যেহেতু উহাতে ভ্রম ও অযুক্তিযুক্ত বাক্য দৃষ্ট হইতেছে। Basu's *Ātmacharit* [Autobiography] quoted in Tagore, *Ātmajībanī*, p. 376. Finally, Kshitindra Nath Tagore : এই স্বাধীনতা-ভাগীরথী আনয়ন বিষয়ে দেবেন্দ্রনাথ . . . অক্ষয় কুমারের নিকট সাহায্য পাইয়াছিলেন . . . Quoted in *ibid.*, p. 378.

⁵⁸ Editor Satish C. Chakrabarti's report in *Ātmajībanī*, pp. 378-79.

⁵⁹ But Debendra Nath's own belief in progressive transmigration remained intact. He would even write a pamphlet—*Paralok o Mukti* [Other World and Liberation (of Soul)]—on the subject.

Uprooted forcibly from the *Vedas* and the *Upaniṣads*, Debendra Nath however would not leave the ground altogether. After the *Bija* was formed he felt the need for a *Dharmagrantha* or Book of Religion [i.e. Bible] for the Brahmos. For this purpose he turned to none other than the *Upaniṣads*. Rational considerations had overthrown his faith in the *Vedas* and *Vedānta* and rendered his religion rather rootless. This time he took care to make a new approach—that of the highly subjective *ātmapratyay* or self-conviction—to select only *Brāhmīc* expressions from the composite universe of the *Upaniṣads*.⁶⁰ And one day in 1848 Debendra Nath actually developed a book, in three hours (!), one hundred per cent out of the authentic *Upaniṣads*.⁶¹ It was in Sanskrit and the author borrowed words, phrases, lines and verses literally from the *Upaniṣads*. His role was to select and organise them into a new sectarian *Upaniṣad* called *Brāhmī Upaniṣad*,⁶² historically not too different from the *Gopāla-Tāpanī Upaniṣad* and *Allopaniṣad* he had dismissed as spurious, sectarian and late.⁶³

The *Brāhmī Upaniṣad* formed the first part of *Brāhmadharma Grantha*, the Book for the Brahmos. The second part called *Anushāsan* [Instruction] and compiled in 1849 was also derived from later sources of Hindu religion such as *Manu*, *Gītā*, *Tantra* and the Epics.⁶⁴ In the same year, the *Bija* was made final with minor changes. The complete *Brāhmadharma Grantha* was published late in 1850. Thus, the *Bija*, the *Grantha* and certain other works of reconstruction by Debendra Nath between 1847 and 1850 redefined Brahmoism as a new derivative of Hinduism. After completion of the *Brāhmī Upaniṣad* Debendra Nath declared :

No one should think that I abandoned our *Vedas* and *Upaniṣads* altogether, . . . *Upaniṣads* are the top of the *Vedas* and *Brāhmī Upaniṣad* is the crown of all *Upaniṣads*, ... and that had been set in the first part of *Brāhmadharma [Grantha]*.⁶⁵

3.3 The Universe as Bible (Akshay Kumar)

This position was not acceptable to Akshay Kumar Datta. Although it was he who, at Debendra Nath's behest, had written down the *Brāhmī Upaniṣad* as dictated by the latter,⁶⁶ but the new *Upaniṣad* failed to impress the scribe. Akshay Kumar was not satisfied with the *Brāhmadharma* book which was not likely to extricate Brahmos

He restated the theory also in his autobiography written many years later. See *Ātmajībanī*, pp. 126-28.

⁶⁰ Tagore *Ātmajībanī*, p. 124. Excerpt :

দেখিলাম যে, আত্মপ্রত্যয়-সিদ্ধ-জ্ঞানোজ্জ্বলিত বিগত হৃদয়ই তাহার [ব্রাহ্মধর্মের] পশ্চাদ্ভূমি। . . . সেই হৃদয়ের সঙ্গে যেখানে উপনিষদের মিল, উপনিষদের সেই বাক্যই আমরা গ্রহণ করিতে পারি।

⁶¹ Ibid., pp. 131-34.

⁶² Ibid., pp. 135-36.

⁶³ Ibid., pp. 122-23.

⁶⁴ Ibid., pp. 137-39.

⁶⁵ Translated. Bangla original :

ইহা কেহ মনে করিবেন না যে, আমাদের বেদ ও উপনিষদকে আমি একবারে পরিত্যাগ করিলাম, . . .। বেদের শিরোভাগ উপনিষদ, এবং উপনিষদের শিরোভাগ ব্রাহ্মী উপনিষদ, . . . তাহাই এই ব্রাহ্মধর্মের প্রথম খণ্ডে সন্নিবেশিত হইয়াছে। Ibid., p. 136.

⁶⁶ Tagore, *Ātmajībanī*, pp. 131-32.

from the spell of the *Vedas* and *Upaniṣads*.⁶⁷ A few months after *Brāhmadharma* was published Akshay Kumar had to welcome it in his speech at the 21st annual festival of Brahmos on 11 *Māgh* 1772 *Shaka* (late Jan 1851) as a great achievement. He also desired its wide circulation for promoting religions discussion among Brahmos.⁶⁸ But he took due care not to concede it the place the *Vedas* had occupied before. He reaffirmed his earlier rejection of the *Vedas* with reference to the verdict of the *Muṇḍaka Upaniṣad* and put aside *Brāhmadharma Grantha* as a *sāmpradāyik* [sectarian] book.⁶⁹ Then he took the opportunity to announce that the only book revealed by God and acceptable to the Brahmos was the physical universe itself :

The Universe as a whole is the Book which excels all other books. Through it God the merciful has revealed His own nature that otherwise defy all descriptions in words. He has also enjoined in it what we ought to do and what we ought not to. It is this book that form the sole foundation of our Brahmo religion.⁷⁰

This was however no new announcement. Akshay Kumar had first made such a statement in the *Bhūmikā* [Introduction] of his *Bāhya Bastur Sahit Mānab Prakritir Sambandha Bichār* two years earlier : "The awareness that this visible Universe is the Scripture authored by God would certainly generate love and devotion [in our hearts] to observe its principles."⁷¹ In the second volume of *Bāhya Bastu* published in 1853 Akshay Kumar would declare science to be the sole criterion of judgment of all religious systems in the same manner as Debendra Nath had once declared the *Vedas* to be the measuring rod for all other *śāstras*. "The current religions", Akshay Kumar argued,

that are not in agreement with the laws and order of the Universe need rectification. Views that go against natural laws which have been determined with certainty are never authentic. There is no doubt that the religion which is found to be at variance with ascertained laws [of nature] contains error.⁷²

⁶⁷ "অক্ষয় কুমার দত্ত 'ব্রাহ্মধর্ম' গ্রন্থের উপরেও সন্তুষ্ট ছিলেন না। কারণ ঐ গ্রন্থের প্রচারে বেদ-উপনিষদের প্রভাব ব্রাহ্মসমাজের উপর সমানই রহিয়া গেল।" Ajit K. Chakrabarti, *Maharṣi Debendranāth*, p. 194.

⁶⁸ *Patrikā*, no. 91 (*Phālgun* 1772 *Shaka*/Feb-Mar 1851) : 163. Relevant quote : . . . ব্রাহ্মেরা এ বৎসর ব্রাহ্মধর্ম গ্রন্থ প্রস্তুত করিয়া এক মহৎ কর্ম করিয়াছেন। এক্ষণে যাহাতে এই গ্রন্থ সর্বত্র ব্যাপ্ত হয়, তদ্বারা ব্রাহ্মধর্মের আলোচনা বৃদ্ধি হয় . . . তাহার ঐকান্তিক চেষ্টা করা . . . কর্তব্য।

⁶⁹ *Ibid.*, pp. 162-63.

⁷⁰ Translated. Bangla original :

পরম কারুণিক পরমেশ্বর এই যে অখিল বিশ্বরূপ সর্বোত্তম গ্রন্থদ্বারা আপনার অনির্বচনীয় স্বরূপ ও আমারদিগের কর্তব্যাকর্তব্য নিরূপণ করিয়া দিয়াছেন, তাহাই আমারদিগের ব্রাহ্মধর্মের একমাত্র মূল। *Ibid.*, p. 163.

⁷¹ Translated. Bangla original :

. . . এই পরিদৃশ্যমান বিশ্বকে পরমেশ্বর প্রণীত ধর্মশাস্ত্র স্বরূপ জানিয়া তাহার নিয়ম প্রতিপালনে অবশ্যই শ্রদ্ধা ও অনুরাগ জন্মিবে। *Ibid.*; no. 67 (*Phālgun* 1770 *Shaka*/Feb-Mar 1849) : ২০৭. [The text of the book *Bāhya Bastur Sahit* . . . was first published in the *Patrikā*.]

⁷² Translated. Bangla original :

যে সকল প্রচলিত ধর্মের সহিত জগতের নিয়ম শৃঙ্খলার ঐক্য নাই, তাহা সংশোধন করা কর্তব্য। যে সমুদায় প্রাকৃতিক নিয়ম নিঃসংশয়ে নিরূপিত হইয়াছে, তদ্বিরুদ্ধ মত কখনই যথার্থ মত নহে। নিরূপিত নিয়মের সহিত যে ধর্মের বিরোধ দেখা যায়, তাহাতে অবশ্যই ভ্রম আছে, তাহার সন্দেহ নাই। *Bāhya Bastu*, part 2, p. 164.

There was little possibility of any scripture passing this test. Akshay Kumar saw no reason for the bewildering plurality of religious texts as they actually are. Conflicts and contradictions in and among these texts led him to dismiss them all in *Bāhya Bastu*, Part I as '*kalpita*' or invented as well as highly subjective.⁷³

In this situation the only Bible the Brahmos could rely on was the Universe itself. In *Bāhya Bastu* Akshay Kumar would repeatedly refer to this infallible [*abhrānta*], irrefutable [*akhaṇḍya*], profound [*pragāḍha*] Book which was the Universe [*brahmāṇḍa*] itself and propose its study as the only means to be rationally enlightened about the nature of its Creator.⁷⁴ The declaration at the annual festival of 1772 (1851) quoted above (see fn. 70) was the culmination of this thought. In his speech on the same occasion next year Akshay Kumar gave a clearer statement of his view of the universe, as the Book :

The truly infallible scripture without an alternative is the original Book that is identical with the cosmos itself of which each immense solar system form a leaf while the Sun, the Moon, the planets and comets appear as its imperishable letters written in the most brilliant ink of light.⁷⁵

And this "only infallible scripture without an alternative" was "the only [book] to be studied" by Brahmos.⁷⁶ In his speech at the Bhowanipore Brahma *Samāj* in April 1855 Akshay Kumar declared :

The whole Universe is our scripture, pure science is our teacher. Whatever facts have been discovered by *Bhāskara* and *Āryabhaṭa* as well as by Newton and Laplace, they are also our *Shāstra*. Whatever right theories have been proclaimed by *Gautama* and *Kaṇāda*, as well as by Bacon and Comte, they are also our *Shāstra*.⁷⁷

⁷³ *Patrikā*, no. 85 (*Bhādra* 1772 *Shaka*/Aug-Sep 1850) : 76-77.

⁷⁴ *Ibid.*; pp. 78, 80. Excerpts :

এই অখিল সংসার রূপ ভ্রম-শূন্য প্রগাঢ় গ্রন্থের আলোচনাই পরমেশ্বরের স্বরূপ বিষয়ক জ্ঞানলোভের অদ্বিতীয় উপায়...। বিশেষতঃ সৃষ্টিক্রিয়ার আলোচনা করিয়া সৃষ্টিকর্তার স্বরূপ নিরূপণ করাও এই মহীয়সী বুদ্ধিবৃত্তির কার্য্য। ...নিখিল ব্রহ্মাণ্ডরূপ অখণ্ড অপ্রান্ত শাস্ত্র ... etc.

⁷⁵ Translated. Bangla original :

এক এক অসীমপ্রায় সৌর জগৎ যে বিশ্বরূপ মূল গ্রন্থের এক এক পত্র স্বরূপ, সূর্য, চন্দ্র, গ্রহ, ধূমকেতু যাহার অক্ষর স্বরূপ এবং যাহার এই সমস্ত অবিনশ্বর অক্ষর অত্যাঙ্কুল জ্যোতির্ময়ী মসীদ্বারা লিখিতবৎ প্রকাশ পাইতেছে, তাহাই যথার্থ অবিকল্প অপ্রান্ত শাস্ত্র। Quoted in Ajit K. Chakrabarti, *Maharṣi Debendranāth*, p. 144 fn.

⁷⁶ বিশ্বরূপ মূল গ্রন্থই একমাত্র অপ্রান্ত অবিকল্প শাস্ত্র এবং তাহাই আমাদের একমাত্র পঠনীয়। Quoted in Sadhana Majumdar, "Aksaykumār Datter Juktibād o Dharmabichār" [Akshay Kumar Datta's Rationalism and Judgement on Religion], *Jijñāṣā* [Query] 5, no. 1 (*Baiśākh-Āṣāḍh* 1391 BS/Apr-June 1984) : 63.

⁷⁷ Translated. Bangla original :

সমগ্র সংসারই আমাদের ধর্মশাস্ত্র, বিদ্বদ্ভাজনই আমাদের আচার্য্য। ভাস্কর ও আর্থাভট্ট এবং নিউটন ও লাপ্লাস যে কিছু যথার্থ বিষয় উদ্ভাবন করিয়াছেন, তাহাও আমাদের শাস্ত্র। পৌতম ও কণাদ এবং বেকন ও কোন্ট যে কোন প্রকৃত তত্ত্ব প্রচার করিয়াছেন, তাহাও আমাদের শাস্ত্র। Quoted in Ray, *Jīban-Brittānta*, pp. 94-95.

Bhāskara (c. AD 1114-60), ancient Indian mathematician and astronomer; *Āryabhaṭa* (c. AD 476-520), ancient Indian astronomer; (Issac) Newton (1642-1727), British Physicist; (Pierre Simon) Laplace (1749-1827), French astronomer; *Gautama* (between c. 450 BC and 100 AD), ancient Indian philosopher and founder of the *Nyāya* system of philosophy; *Kaṇāda* (between c.

Brahmavidyā or “divine science” for Akshay Kumar consisted of such disciplines as physics, chemistry, physiology, anatomy, natural history, psychology and ethics.⁷⁸ These formed the chapters of *Paramārthavidyā* or the “Science of the Highest Truth.”⁷⁹ Thus, “all these sciences [taken together] make the true scripture authored by God.”⁸⁰ “This form of *Brahmavidyā* is the right *Brahmavidyā*.”⁸¹ Unfortunately however these sciences were not available in Indian languages. “Compared to these important sciences, the disciplines studied in the [traditional Sanskrit] schools of this country [i.e. Sanskrit Literature, the Six Systems of philosophy etc.] look very insignificant.”⁸² Therefore the sciences needed to be translated from European languages and made popular in this country for the sake of its development and prosperity.⁸³

Thus, during the very period (c. 1847-1850) when Debendra Nath was engaged in producing his *Bija* and the *Brāhmadharma Grantha*, actually a pseudo-alternative of *Vedānta*, his rival Akshay Kumar was doing research to develop his own version of Brahmoism, radically different sort of a new synthesis. In this attempt he sought to dissociate Brahmoism completely from ancient scriptures and take it over for the new science. Thus, the movement for religious reform as started thirty-five years back by Ram Mohan Roy was now to transform itself into one for India’s intellectual reform. George Combe’s (1788-1858) *Constitution of Man Considered in Relation to External Objects* (1828) showed the light and the very scribe of the *Brāhmī Upaniṣad* would now reproduce Combe’s thesis in Bangla with necessary adjustments : *Bāhya Bastur Sabit Mānab Prakritir Sambandha Bichār* [An Examination of the Relationship of Human Nature to the Outside World of Matter] (vol.1, 1849; vol.2, 1853)—a manual of Deism and a Science-based code of life. God was technically saved through Deism but there was no need for prayer in order to receive His favor in a world complete with the laws of science. This was Akshay Kumar’s alternative for the *Brāhmadharma Grantha*. He straightly declared : “The Brahmos have embraced such a religion that they must study this book and discuss it again and again... This book is completely suited for religious education of Brahmos.”⁸⁴

250 BC and 100 AD), ancient Indian philosopher and founder of the *Vaisheshika* system of philosophy.

⁷⁸ Datta; *Bāhya Bastu*, pt. 2, p. 160.

⁷⁹ [উক্ত] “এক এক বিদ্যা পরমার্থবিদ্যার এক এক অধ্যায় স্বরূপ।” *Ibid.*, p. 172.

⁸⁰ Translated : Bangla original :

“এই সকল বিদ্যাই পরমেশ্বর-প্রণীত যথার্থ ধর্মশাস্ত্র।” *Ibid.*, p. 161.

⁸¹ “এই রূপ ব্রহ্মবিদ্যাই যথার্থ ব্রহ্মবিদ্যা।” *Ibid.*

⁸² Translated : Bangla original :

“এই সকল গুরুতর বিদ্যার সহিত তুলনা করিয়া দেখিলে এতদেশীয় চতুষ্পাঠীতে যে সকল শাস্ত্র অধীত হইয়া থাকে তাহা অতি সামান্য বোধ হয়।” *Ibid.*, p. 171.

⁸³ “এক্ষণে ঐ সকল বিদ্যা ইউরোপীয় ভাষা হইতে অনুবাদিত করিয়া এদেশে প্রচলিত করা আবশ্যিক; তাহা না হইলে আমাদের সম্পূর্ণ শ্রীবৃদ্ধি ও সুখোন্নতি হওয়া কোনক্রমেই সম্ভাবিত নহে।” *Ibid.*, p. 172.

⁸⁴ *Bāhya Bastu*, pt. 2, pp. vii-viii

Translated : Bangla original : ব্রাহ্মগণ যে ধর্ম অবলম্বন করিয়াছেন, তাহাতে এই পুস্তক অধ্যয়ন ও পুনঃ পুনঃ পর্যালোচনা করা তাহাদের অবশ্য কর্তব্য। এ গ্রন্থ ব্রাহ্মদিগের ধর্ম-শিক্ষার সম্পূর্ণ উপযোগী।

The first installment of *Bāhya Bastu* appeared in the *Tattvabodhinī Patrikā* in *Māgh* 1770 *Shaka* (Jan-Feb 1849). This and the next installment formed the book's *Bhūmikā* [Introduction] which outlined the Akshayan model of a Deist Brahmoism. The existence of a creator was to be rationally established through a discussion of interrelationship between living creatures and the world of matter.⁸⁵ But this was a retired God and He differed fundamentally from the Semitic Deity, the prototype of Ram Mohan's and Debendra Nath's God :

Unlike foolish Christians they [the wise men of Europe who know the truth] do not acknowledge God as the direct cause of actions in the world . . . On the contrary they believe that God had set certain definite rules and has been maintaining the Universe through them . . . He never transgresses the rules for anyone's eulogy or prayer.⁸⁶

3.4 Conflict over Deism, Efficacy of Prayer

This religion without prayer was just what Debendra Nath did not want at all. Prayer was central to his religion and it was for the sake of prayer that he had bid farewell to *Sharīkara's* philosophy of *Advaita* [non-duality] *Vedānta*:

We did not respect the *Vedāntadarshan*, since in it *Sharīkārāchārya* had made *Brahma* [The Supreme Being] and the created beings to appear as one. We want to worship God. If the worshipper and the One to be worshipped become one, then who will worship whom?⁸⁷

On the other hand, Akshay Kumar continued to repeat his position that prayer was meaningless in a world controlled by inexorable laws of nature originally set by the Creator. For example, an excerpt from *Bāhya Bastu*, Part 1:

This should be known for sure that . . . when worldly causes for an effect are not taken into consideration but something which is imaginary and which lies beyond human understanding is performed in the belief that it could stop our misery, the suffering in question does not actually come to an end. And prayers and adorations for a hundred years never make Him break rules to fulfil a devotee's improper solicitations.⁸⁸

⁸⁵ *Patrikā*, no. 66 (*Māgh* 1770 *Shaka*/Jan-Feb 1849): 183.

⁸⁶ Translated : Bangla original :

তঁাহারা ['ইউরোপের তত্ত্ববিৎ পণ্ডিতেরা'] অবিজ্ঞ খ্রীষ্টানদিগের ন্যায় পরমেশ্বরকে বিশ্ব-চেষ্টার সাক্ষাৎ কারণ বলিয়া স্বীকার করেন না, ...। প্রত্যুত তঁাহারা এ প্রকার বিশ্বাস করেন যে জগদীশ্বর নিরূপিত নিয়ম সংস্থাপন করিয়া বিশ্বপালন করিতেছেন...। তিনি কাহারও স্তুতে বা প্রার্থনাতে কদাপি নিয়মের অতিক্রম করেন না। *Patrikā*, no. 67 (*Phālgun* 1770 *Shaka*/Feb-Mar 1849) : 205.

⁸⁷ Translated : Bangla original :

বেদান্ত দর্শনকে আমরা শ্রদ্ধা করিতাম না; যে-হেতুক, তাহাতে শঙ্করাচার্য্য জীব আর ব্রহ্মকে এক করিয়া প্রতিপন্ন করিয়াছেন। আমরা চাই ঈশ্বরকে উপাসনা করিতে। যদি উপাস্য উপাসক এক হইয়া যায়, তবে কে কাহাকে উপাসনা করিবে? Tagore, *Ātmajībanī*, p. 37.

⁸⁸ Translated : Bangla original :

ইহা অবধারিত জানা উচিত, যে...লৌকিক কার্য্যকারণ বিবেচনা না করিয়া কোন বোধাতীত মনঃকল্পিত ব্যাপারকে ক্রেশ্ণ নিবারণের উপায় মনে করিয়া তাহার অনুষ্ঠান করিলেও উপস্থিত দুঃখের নিবৃত্তি হয় না, ও শত বৎসর ব্যাপিয়া তঁাহার স্তবস্তুতি করিলেও তিনি কদাপি নিয়ম ভঙ্গ করিয়া ভক্তের অনুচিত প্রার্থনা পূরণ করেন না। *Patrikā*, no. 77 (*Pauṣ* 1771 *Shaka*/Dec 1849-Jan 1850) : 142.

Therefore, Akshay Kumar opposed the idea of holding a prayer for British victory in the fight over Sevastopol (1854-55) during the Crimean War (1854-56). Such prayers were being said in British churches and orders came to do the same in the churches of India too. At a session of the Bhawanipur Brahmo Samaj proposal for such a prayer came from Harish Chandra Mukherji (1824-61), but could not be carried through due to Akshay Kumar's opposition.⁸⁹

In the concluding chapter of *Bāhya Bastu*, Part 2 (1853), Akshay Kumar would declare once more:

In order to produce grains for food one has to carefully find out the qualities He has imparted in land and in the seeds, the relationship He has set between the two, as well as the relevance of the seasons He has determined in this regard, and then do the farming.⁹⁰

No supernatural factor is taken into consideration in this prescription. Years later, Akshay Kumar would present this theme in a more graphic manner when a group of Kolkata students (who must have had read *Bāhya Bastu*) enquired about his opinions on utility of prayer. Replying that there was absolutely no such utility, Akshay Kumar illustrated his opinion with the famous equation:

Hard work = crop

Prayer + hard work = crop

∴ Prayer = 0

This created considerable repercussions in Kolkata's student circles and debates raged for sometime.⁹¹

The fourth and last *mantra* of Debendra Nath's "Seed" of Brahmoism read: *Tasmīn prīṭīṣṭasya priyakāryasādhanaṁcha tadupāsānameva* [Verily His worship means to love Him and to do the work He loves]. Akshay Kumar seized upon this expression to promote his motto of no formal prayer. He made it appear on the head of the *Tattvabodhinī Patrikā* along with the *Muṇḍaka* passage from *Agrahāyaṇ* 1773 *Shaka*/Nov-Dec 1851. He would later give his own interpretation of the *mantra*:

To love God and to do the work he loves is the religion of the Brahmos.⁹²

The Brahmos have no other religion but to worship him with the flower of love, the holiest of all flowers. They have no other work but to do the work He loves.⁹³

⁸⁹ Ray, *Jīban-brittānta*, pp. 91-92.

⁹⁰ Translated : Bangla original :

আহারার্থে শস্যোৎপাদন করিতে হইলে, তিনি ভূমিতে ও শস্যের বীজে যে সকল গুণ প্রদান করিয়াছেন, উভয়ের পরস্পর যেরূপ সম্বন্ধ বন্ধন করিয়া দিয়াছেন, এবং ভবিষ্যে যে ঋতুর যে প্রকার সাপেক্ষতা রাখিয়াছেন, তাহা সবিশেষ অনুসন্ধান করিয়া কৃষিকার্য সম্পাদন করিতে হইবে। Datta, *Bāhya Bastu*, Pt. 2, p. 170.

⁹¹ Ray, *Jīban-brittānta*, pp. 92-94.

⁹² Translated : Bangla original : পরমেশ্বরকে প্রীতি করা ও তাঁহার প্রিয় কার্য সাধন করাই ব্রাহ্ম ধর্ম। Datta, *Bāhya Bastu*, Pt. 2, 'Introduction', p. vii.

⁹³ Translated : Bangla original : পরম পবিত্র প্রীতি-পুষ্প দ্বারা তাঁহার অর্চনা করা ব্যতিরেকে ব্রাহ্মদিগের আর অন্য ধর্ম নাই। তাঁহার প্রিয় কার্য সাধন ব্যতিরেকেও তাঁহাদের আর অন্য কার্য নাই। *Patrikā*, no. 141 (*Baishākh* 1777 *Shaka*/Apr-May 1855) : 9-10.

And what was the work he loved? "To act according to the beneficial laws the Lord of the Universe has set up to preserve the Universe is the work he loves."⁹⁴ Akshay Kumar, therefore, offered *Bāhya Bastu* as a 'religious' primer for Brahmos which would teach them how to regulate social behaviour and economic efforts "in accordance with natural laws and nothing else" and thus to blend economic activities, search for knowledge, and religious practices into a single process.⁹⁵ Thus *Bāhya Bastu*, a derivative of Combe's *Constitution of Man* was put forward as an alternative of the *Vedānta*-derived *Brāhmadharma Grantha*.

4. The Final Battle

4.1 Ram Mohan Roy Reinterpreted

Now the rivals, with their respective bibles, *Brāhmadharma Grantha* and *Bāhya Bastu* were heading towards a pitched battle. In this crisis Akshay Kumar would invoke the name of Ram Mohan Roy to strengthen his position. In a classic style of sectarian polemics he attempted to establish that the great founder of the Brahmo religion had preached nothing but a deist-scientist theology and epistemology. In his speech at the 21st annual congregation of Brahmos on *Māgh* 11, 1772 *Shaka* (late January 1851), Akshay Kumar asserted that Ram Mohan had acknowledged the physical universe as the only authentic scripture of divine origin and had dedicated his life to popularize this crucial concept.⁹⁶ But it is well-known that Ram Mohan was a great commentator on *Vedānta* (who had inspired Debendra Nath) and a staunch monotheist who loved prayer and had upheld the cause of Hindu theism against Christian attacks. Years later, Akshay Kumar would again claim that Ram Mohan was a lone crusader for science in India.⁹⁷

In his politics, Akshay Kumar also attempted to undermine Debendra Nath's leadership by putting forward Ram Mohan as the sole leader of the Brahmos for all time:

It seems, even today he [Ram Mohan] is fulfilling his good intentions by being our guide and a living ideal... Every moment and in our every work we do feel that we are only his followers... If he were not born in India where would have been the Brahmo *Samāj*, the *Tattvabodhini* [*Sabhā* and

⁹⁴ Translated : Bangla original : বিশ্বপতি যে সকল শুভকর নিয়ম সংস্থাপন করিয়া বিশ্বরাজ্য পালন করিতেছেন, তদনুযায়ী কার্যই তাঁহার প্রিয় কার্য। Datta, *Bāhya Bastu*, Pt. 2, 'Introduction', pp. vii-viii.

⁹⁵ *Ibid.*, p. viii. Relevant Bangla excerpt : ... সাংসারিক ব্যবহার ও বিষয়-চেষ্টা নিরবচ্ছিন্ন নৈসর্গিক নিয়মানুসারে সম্পন্ন হইয়া বিষয়কার্য এবং জ্ঞান ও ধর্মানুষ্ঠান একীভূত হইয়া যাইবে, ...।

⁹⁶ *Patrikā*, no. 91 (*Phālgun* 1772 *Shaka*/Feb-Mar 1851) : 160. Bangla excerpt :

এই বিশ্বরূপ অভ্রান্ত গ্রন্থই যে ধর্মের সাক্ষী, সূত্রাং যাহার প্রামাণ্য বিষয়ে লেশমাাত্রও সংশয় নাই, তাই প্রচার করণার্থে তিনি [রামমোহন রায়] প্রাণ পর্যন্ত পণ করিয়াছিলেন। তিনি কেবল এই প্রত্যক্ষ পরিদৃশ্যমান নিখিল ব্রহ্মাণ্ডরূপ সর্বোৎকৃষ্ট গ্রন্থমাত্রকে পরমেশ্বর-প্রণীত শাস্ত্রস্বরূপ বিবেচনা করিতেন, এবং তদীয় আলোচনা এবং তনুলক গ্রন্থানুশীলন দ্বারা স্বয়ং চরিতার্থ হইয়াছিলেন।

⁹⁷ *Bharātbarāsiya Upāsak Sampradāy*, vol. 2., 'Introduction' (1883), p. 33. Bangla excerpts:

তুমি [রামমোহন রায়] বিজ্ঞানের অনুকূল পক্ষে যে সুগভীর রণবাদ্য করিয়া গিয়াছ ... সেই অত্যাশ্চর্য গভীর তুরী-ধ্বনি অদ্যাপি বার বার প্রতিধ্বনিত হইয়া এই অযোগ্য দেশেও জয় সাধন করিয়া আসিতেছে। ... এই দেশে সেই অন্ধকারময় সময়ে বিজ্ঞান বিষয়ে এরূপ অনুরাগ ও উৎসাহ প্রকাশ আশ্চর্যের বিষয়।

Patrikā], discussion of *Brahmavidyā*, the Brahmos, and the Brahmo religion?⁹⁸

Is it not almost clear here that Akshay Kumar was trying to downplay Debendra Nath's great contributions as the savior of the Brahmo *Samāj*? And for this he was highlighting the greatness of Ram Mohan Roy in order to dwarf Debendra Nath.

4. 2. New Dimensions: *Ātmīya Sabhā* and thereafter

4.2.1 Humanistic Bias

To emulate Ram Mohan Roy and, as if, to reassert the great man's presence in contemporary Brahmo *Samāj*, Akshay Kumar, in collaboration with two young colleagues, Rakhai Das Haldar (1832-1887) and Ananga Mohan Mitra, founded the *Ātmīya Sabhā* [Friends' Association] in October 1852 at Debendra Nath's own house. It was named after Ram Mohan's famous association set up in 1815 which had however disappeared shortly thereafter. Debendra Nath was made the new *Sabhā's* titular president and Akshay Kumar himself became its secretary.⁹⁹ Foundation of this association is a landmark in the history of the Akshayan dissent. After fixing his intellectual position against Debendra Nath's *Brāhmadharma Grantha*, Akshay Kumar now proceeded to do something for the society at large—some sort of humanist bias was going to supplement his scientism and deism. In January 1853 he would write: "A study of the nature and workings of our mental faculties makes it amply clear that we have been created to work for the improvement of the people's society. To abandon that responsibility is in no way the right thing to do."¹⁰⁰

With this background and in a rising mood of social reform Akshay Kumar joined (December 1854) the *Samājonnatibidhāyini Suhṛit Samiti* [Friends' Association for Promoting Social Upliftment] as its joint-secretary. Led by the progressivist Derozian writer Kishori Chand Mitra (1822-73) the *Samiti* set up such goals as female education, remarriage of Hindu widows, and prevention of child marriage and polygamy¹⁰¹—the very causes for which Ishwar Chandra Vidyasagar was about to launch his famous movement. In fact, within two months Akshay Kumar would emerge as the chief collaborator of Vidyasagar's widow remarriage movement making the *Tattvobodhinī Patrikā* its most important vehicle. Thus, Vidyasagar's proximity seems to have made Akshay Kumar shift his interest in developing a scientific religion to social reform and human development through secular efforts.

Akshay Kumar would reiterate this position thirty years later in the 'Introduction' of his *Bhāratbarṣiya Upāsak Sampradāy* vol. 2, where he urged that the only

⁹⁸ Translated : Bangla original :

বোধ হইতেছে, যেন অদ্যাপি তিনি [রাম মোহন রায়] আমারদের পথ-প্রদর্শক ও জীবিতবান আদর্শ স্বরূপ হইয়া আপনাদের শুভ সঙ্কল্প সম্পন্ন করিতেছেন। . . . আমরা যে তাঁহারই অনুগামি [sic] তাহা প্রতিক্ষণ প্রতি কার্যে হৃদয়ঙ্গম করিতেছি। . . . তিনি এই ভারতভূমিতে জন্ম গ্রহণ না করিলে কোথায় বা ব্রাহ্মসমাজ, কোথায় বা তত্ত্ববোধিনী, কোথায় বা ব্রহ্মবিদ্যার আলোচনা, কোথায় বা ব্রাহ্ম, কোথায় বা ব্রাহ্মধর্ম থাকিত? *Patrikā*, no. 91 (*Phālgun* 1772 *Shaka*/Feb-Mar 1851) : 162.

⁹⁹ Tagore, *Ātmajībanī*, p. 413.

¹⁰⁰ Datta, *Bāhya Bastu*, pt. 2, p. 163. Translated : Bangla original: আমাদের মনোবৃত্তি সমুদায়ের স্বরূপ ও কার্যাকার্য পর্যালোচনা করিয়া দেখিলে স্পষ্ট প্রতীতি হয়, আমরা জনসমাজের উন্নতি সাধন করিবার নিমিত্তেই সৃষ্ট হইয়াছি, তাহা পরিত্যাগ করা কোন ক্রমেই কর্তব্য নহে।

¹⁰¹ Tagore, *Ātmajībanī*, p. 481. Editor Satish Chakrabarti's note.

knowledge to be acquired was that which refines the learner's understanding, removes his errors and prejudices, and makes him comprehend the right laws of the Universe thereby enabling him to "achieve his own total prosperity as well as that of the people at large."¹⁰² Later, in the same book, Akshay Kumar laments that his countrymen never got interested in serious matters that had to do with human development and well-being of the earth.¹⁰³ Therefore he wanted to set up a community dedicated to simultaneous physical and mental upliftment of its members. He also planned to undertake, in addition to his extensive intellectual projects, action programmes intended for the country's benefit.¹⁰⁴ Significantly, this comprehensive scheme covered physical, mental, intellectual, and social progress, but is silent about spiritual advancement.

4.2.2 Towards Atheism

The foundation of the *Ātmīya Sabhā* must be viewed in the light of these intentions and preferences of Akshay Kumar. He interpreted Ram Mohan Roy as an assailant who fought a crusade in his own country as well as in a foreign land to uproot all errors and superstitions.¹⁰⁵ With a similar end in mind, we may legitimately guess, Akshay Kumar set out with the *Ātmīya Sabhā* in October 1852. Every Wednesday evening members met to discuss social issues, and the discussion was marked by an overflow of rationalism that sometimes led to futile debates and ridiculous situations. Gradually, the fundamentals of Brahmoism also came under purview of the *Sabhā's* rationalistic deliberations to extreme disappointment of Debendra Nath. In his autobiography Debendra Nath complains that even the nature of God was being determined at the *Ātmīya Sabhā* through vote by a show of hands!¹⁰⁶ This allegation of Debendra Nath is however not beyond doubt. Kanai Lal Pine, a leading member of the dissenting faction, later reported that there was never a dispute over the nature of God, but some arguments as to the use of certain terms to describe divine attributes.¹⁰⁷ Whatever be the case, the fact remains that *Ātmīya Sabhā* was a forum of rationalist debate and deliberations.

¹⁰² *UPāsak Sampradāy*, vol. 2., "Introduction" (1883), p. 32. Bangla excerpts :

যে রূপ জ্ঞান উপার্জন করিলে বুদ্ধি মার্জিত হয়, ভ্রম ও কুসংস্কার দূরীকৃত হয়, এবং জগতের প্রকৃত নিয়ম-প্রণালী অবগত হইয়া . . . নিজের ও জন-সমাজের সর্ববিধ শ্রীবুদ্ধি-সাধন করিতে সমর্থ হওয়া যায়, সেইরূপ জ্ঞান শিক্ষা করাই কর্তব্য।

¹⁰³ Bangla excerpts : ...ভুলোকের কল্যাণকর ও নরকুলের উন্নতিসাধক গুরুতর বিষয়ে আমাদের আর মতিগতি হইল না। Ibid., "Tippani", p. 327.

¹⁰⁴ Ibid., "Introduction" (1883), p. 278. Bangla excerpts :

...আপনাদের শারীরিক ও মানসিক উভয় প্রকৃতির যুগপৎ সমোন্নতি-সাধন-ব্রতে ব্রতী স্বদেশীয় সম্প্রদায়-বিশেষ-প্রবর্তনের অভিলাষ এবং ... বিজ্ঞান, দর্শন ও ভারতবর্ষীয় পুরাতত্ত্ব বিষয়ক বিবিধ প্রহ্ন প্রণয়ন ও স্বদেশ সম্বন্ধীয় নানা প্রকার হিতানুষ্ঠান-কামনা...

¹⁰⁵ Ibid., p. 33. Bangla excerpts :

তুমি [রামমোহন রায়] স্বদেশ ও বিদেশ-ব্যাপী ভ্রম ও কুসংস্কার সংহার উদ্দেশে আততায়ী-স্বরূপে রণ-দুর্মদ বীর পুরুষের পরাক্রম প্রকাশ করিয়াছ।

¹⁰⁶ *Ātmajībanī*, pp. 170-71. See also editor's note in *ibid.*, pp. 413-14.

¹⁰⁷ Editor's note in *ibid.*, p. 414.

4.2.3 Anti-Sanskritism

Kanai Lal Pine also says that protests were uttered in the *Ātmīya Sabhā* against prayers in Sanskrit. A great promoter of the Bangla language as he was, Akshay Kumar Datta was also a determined detractor of Sanskrit. His indignance of the classical language of India and the knowledge available in it would be emphatically expressed later in the "Introduction" of *Bhāratbarṣiya Upāsak Sampradāy*, vol.2, where he wrote in 1883:

Error, fantasy and superstitions are intrinsically spread all over the Sanskrit body of knowledge. Those who are well-trained in either English or French or German would find very little in Sanskrit to be perused for true knowledge. Training in any one of those three European languages makes easily available in one place hundred thousand times of whatever little is found in Sanskrit worthy of being properly called knowledge.¹⁰⁸

Therefore Akshay Kumar set out to enrich Bangla language through transfer of the new knowledge from European languages to Bangla. Borrowing material from English he wrote *BāhyaBastu* in Bangla as against Debendra Nath's *Brāhmadharma Grantha* in Sanskrit. *Bāhya Bastu*'s first volume came out in 1851 and the impact probably led to the preparation in 1852 of a Bangla 'Tātparya' [commentary] of *Brāhmadharma* with Akshay Kumar himself participating in the task.¹⁰⁹ A Bangla translation of *Brāhmadharma* was also being serialized in *Tattvabodhinī Patrikā* in 1854.

The *Ātmīya Sabhā* easily turned into a forum for Akshay Kumar's crusade against Sanskrit and campaign for Bangla. With his blessings Rakhal Das Halder and Ananga Mohan Mitra raised the demand for prayers in Bangla. In February 1853 they founded a new Brahmo *Samāj* at Kidderpore (Khidirpur), Kolkata, where prayers were said in Bangla. Akshay Kumar paid frequent visits to this non-conforming *Samāj*. In August 1854 Rakhal Das complained in a letter to a friend that *Brāhmadharma* was an incomplete as well as a highly abstruse work which needed to be replaced by a book that would be easily understood by the people. He also proposed in the letter that prayers should best be said in Bangla since most worshippers did not know Sanskrit.¹¹⁰

Following December, Rakhal Das sent to Debendra Nath himself a representation entitled "Brāhmadiger bartamān āntarik abasthā biṣayak paryālochanā" [Review of the present state of the minds of Brahmos]. In it he charged *Brāhmadharma Grantha* as containing unpleasant language, outdated expressions, as well as contradictory ideas. He also complained that the use of Sanskrit in prayers was silly, and proposed that instead of reading *Vedic* text and *Brāhmadharma Grantha* in Sanskrit, Brahmos say short prayers in Bangla followed by longer talks among themselves about divinity as well as about what to do and what not to do. The participants would also, Rakhal

¹⁰⁸ Translated. Bangla original :

ভ্রম, কল্পনা ও কুসংস্কার সংস্কৃত শাস্ত্রের সর্ব স্থানে ওতপ্রোতভাবে ব্যাপ্ত রহিয়াছে। যাঁহারা ইংরেজী, ফরাসী অথবা জার্মেন ভাষায় সুশিক্ষিত হন, প্রকৃত জ্ঞান-লাভ উদ্দেশে সংস্কৃত ভাষায় তাঁহাদের শিক্ষণীয় অল্পই বিষয় আছে। সংস্কৃত শাস্ত্রের মধ্যে প্রকৃত জ্ঞান-সংজ্ঞার উপযুক্ত যথাক্রমে যাহা বিদ্যমান আছে, উল্লিখিত তিনটি ইউরোপীয় ভাষার একটিতে অধিকার থাকিলে তাহার শত সহস্র গুণ অক্রেপে একত্র প্রাপ্ত হওয়া যায়। *Bāhya Bastu*, pt. 2., "Introduction", p. xxxii.

¹⁰⁹ *Ātmajībani*, pp. 391, 397.

¹¹⁰ Ajit K. Chakrabarti, *Maharṣi Debendranāth*, pp. 194-95.

Das envisaged, be able to rectify one another's errors through open discussion.¹¹¹ This clearly meant that Brahmos would be guided by no other authority than human reason open to criticism. Such innovations would also transform the Brahmo *Samāj* into a debating seminary.

4.2.4 Spectre of Atheism

These developments chagrined Debendra Nath to the extreme. He writes in indignance : "I no longer find and religiosity, and devoutness in many of those who surround me ... here. Nothing but competition of everyone's own intelligence and abilities My displeasure and apathy grew excessively."¹¹² Obviously the confrontation between the Brahmo orthodoxy and the Akshayan dissent was now heading towards a climax. For many years the Paper Committee that used to select articles for publication in *Tāitvabodhinī Patrikā* had been dominated by the Akshayan clan. Debendra Nath badly needed the service of Akshay Kumar's powerful pen to run the *Patrikā*, but did not like the latter's ideas which were more naturalistic than spiritual. He therefore used to heavily edit Akshay Kumar's articles before publication in order to eliminate views against his liking.¹¹³ It seems that he did this act of interference rather overriding the Paper Committee. Debendra Nath also tried hard, but in vain, to convert Akshay Kumar to his own views.¹¹⁴

With the emergence of Akshay Kumar and Ishwar Chandra Vidyasagar in early 1850's as the most powerful writers in Bangla, the Paper Committee controlled by them became too powerful for Debendra Nath to override. On one occasion they failed to select for publication a written speech by Raj Narayan Basu (1826-99) which he had delivered at the Midnapore Brahmo *Samāj*. Raj Narayan who worked as a secondary school teacher at Midnapore, West Bengal, was a committed spiritualist and a strong pillar of the Debendrite orthodoxy. Naturally Debendra Nath and his friends very much appreciated Raj Narayan's speech. So, when Debendra Nath heard that the Paper Committee had rejected the piece, he lost temper and vowed to oust the 'atheists' from the Committee : "A number of atheists [nāstik] have become members of the Paper Committee; unless these are ousted from their positions,

¹¹¹ Ibid., p. 195, and *Ātmajībanī*, pp. 412-13.

¹¹² Translated : Bangla original :

এখানে . . . যাঁহারা আমাকে বেটন করিয়া রহিয়াছেন, তাঁহাদের অনেকের মধ্যে আর কোন ধর্মভাব ও নিষ্ঠাভাব দেখিতে পাই না। কেবলি নিজের নিজের বুদ্ধি ও ক্ষমতার লড়াই। . . . আমার বিরক্তি ও উদাস্য অতিশয় বৃদ্ধি হইল। *Ātmajībanī*, p. 171.

¹¹³ Akshay Kumar's Bhowanipore speech as published in *Patrikā* (no. 141, *Baishākh* 1777 *Shaka*/Apr-May 1855, p.10) contained the names of Herschel (1738-1822) and Gaul (?) in place of [Pierre Simon] Laplace (1749-1827) and [August] Comte (1798-1857). Ray in *Jīban-brittānta* (p. 95) says that the difference was due to mutilation of Akshay Kumar's draft speech by a certain 'pradhān karmādhyaśha' [high official] of the Brahmo *Samāj* who quietly removed the names of Laplace and Comte as those of atheists and inserted two other names instead before the draft went to press for printing.

¹¹⁴ *Ātmajībanī*, pp. 36-37.

propagation of Brahmo religion is not going to be smooth."¹¹⁵ Thus, the Brahmo orthodoxy brought against the dissidents the grand charge of atheism which has been so common a development in the history of dissent. After this, they proceeded for harsher measures. A letter of Akshay Kumar to Raj Narayan Basu written many years later reveal that Debendra Nath's displeasure over the rejection of Basu's paper eventually led to the abolition of the Paper Committee altogether.¹¹⁶

In fact, a veritable phobia of atheism seems to have seized the Brahmo orthodoxy since early fifties and this became a chief factor in their reaction to Akshay Kumar's dissent during those years. In a much later statement Dwijendra Nath Tagore (1840-1926), eldest son of Debendra Nath, mentioned Akshay Kumar as an atheist and noted that the latter was closely associated with Ishwar Chandra Vidyasagar and was writing such books as *Chārupāth* [Pleasant Reading] under Vidyasagar's influence. As a result, Dwijendra Nath reveals, the doors of the Tagores' house were almost closed to Akshay Kumar Datta.¹¹⁷

4.2.5 Fight in the *Patrikā*: Akshay Kumar's Ouster

The three volumes of *Chārupāth* came out respectively in 1853, 1854 and 1859. Indeed, the fifties were the period of close association between Akshay Kumar and Vidyasagar--the scientist and the humanist. An influence of Vidyasagar is discernible on Akshay Kumar's thought and activities during this period. It is here that one must look for the source of a humanist bias in Akshay Kumar's activities since the establishment of *Ātmīya Sabhā* (October 1852) as a forum for discussion of social questions. As we have seen earlier, Akshay Kumar joined the *Samājonnatibidhāyini Suhrit Samiti* (December 1854) which had a broad programme of social and educational development similar to that followed by Vidyasagar. Soon Akshay Kumar made the *Tattvabodhinī Patrikā* the chief organ of Vidyasagar's widow remarriage movement. In February 1855 the *Patrikā* carried the first tract written by Vidyasagar on the subject.¹¹⁸ The following month Akshay Kumar would endorse Vidyasagar's views in a splendid editorial.¹¹⁹ Next month the *Patrikā* carried a recent (early April 1855) speech by Akshay Kumar at the Bhawanipore Brahmo *Samāj* in which he reiterated the superiority of science over religion, predicted defeat and death of all

¹¹⁵ Translated : Bangla original : কতকগুলান নাস্তিক গ্রন্থাদ্বারা হইয়াছে, ইহারদিগকে এ পদ হইতে বহিস্কৃত না করিয়া দিলে আর ব্রাহ্মধর্ম প্রচারের সুবিধা নাই। Debendra Nath's letter dated 26 *Phālgun* 1775 *Shaka*/8 March 1854. as quoted in Aji K. Chakrabarti, *Maharshi Debendranāth*, pp. 193-94.

¹¹⁶ Akshay Kumar's letter to Raj Narayan Basu reproduced in Jogindra Nath Basu, "Akshaykumār Datta", *Prabāsi*, Vol. 4, no. 11 (*Phālgun*, 1311 BS/Feb-Mar 1905), p. 579. Excerpt : ... আপনার একটি বক্তৃতা সংক্রান্ত মোকদ্দমাই উহা [তত্ত্ববোধিনী সভার গ্রন্থাদ্বারা সভা] উঠিয়া যাইবার কারণ।

¹¹⁷ Statement of Dwijendra Nath Tagore as recorded in Bipin Bihari Gupta, *Purātan Prasāngā*[Old Topics], 2nd series (Kolkata : Oriental Press, 1923), p. 198. Excerpt :

ক্রমে তিনি [অক্ষয় কুমার দত্ত] নাস্তিক হইয়া বিদ্যাসাগরের দলে মিশিলেন। বিদ্যাসাগরের কথায় তিনি চারুপাঠ প্রভৃতি বই লিখিতে আরম্ভ করিলেন। আমাদের বাড়িতে তাঁর যাতায়াত প্রায় বন্ধ হইল।

¹¹⁸ Sri Ishwar Chandra Sharma, "Bidhabā Bibāha Prachalita Haoā Uchit Ki Nā", [Whether or not Marriage of (Hindu) Widows Should Be Introduced], *Patrikā* no. 139. (*Phālgun* 1776 *Shaka*/Feb-Mar 1855),

¹¹⁹ "Bidhabā Bibāha" [Marriage of (Hindu) Widows], *Ibid.*, no. 140 (*Chaitra* 1776 *Shaka*/Mar-Apr 1855).

religions at the hands of science, and declared, once again, science to be the only tutor and scripture for Brahmos.¹²⁰

Thus, the *Tattvabodhinī Patrikā* which had been founded for propagation of the Brahmo religion turned into a vehicle of science and secular social reform movement in the first half of 1855. This development must have deeply perturbed Debendra Nath who had recently lost a brother and, moreover, was having problems with his private business and had even been taken into police custody for business debts.¹²¹ In the Bhawanipore [August] speech Akshay Kumar had named Laplace and Comte with others as exponents of true knowledge. But before the piece went to the printer 'a chief official of the Brahmo Samāj' secretly deleted the two names as those of atheists and inserted two other names instead.¹²² This was a cause of great displeasure for Akshay Kumar.¹²³ We do not know the identity of this 'chief official' of the Brahmo Samāj. But Debendra Nath states in his autobiography that in the early months of 1855 he used to inspect the work of the *Tattvabodhinī Sabhā* every day afternoon at the *Sabhā's* office.¹²⁴ We must also remember that Debendra Nath had been in the habit of crossing out statements against his liking from Akshay Kumar's draft articles since the very inception of the *Patrikā* in 1843.¹²⁵ Above all, as we have seen, Debendra Nath hated atheism before anything else.

In about two months after the "chief official's" clandestine operation we find Akshay Kumar retired from the *Patrikā*. The retirement was abrupt and the circumstances are not clear at all. The exact date is also not known. Conventionally, Akshay Kumar's illness is held to be the reason of his retirement. He had been indeed a sickly person for many years suffering from piles and stomach problems and had had fits of unconsciousness several times. Biographer Mahendra Nath Ray wrote (1885) shortly before Akshay Kumar's death that one evening in *Āṣāḍh* [1777 *Shaka*] (June-July 1855) Akshay Kumar had one of those fits, and two days later while working in the *Patrikā's* office, he felt terrible pain in the brain. At this, he left the pen for ever.¹²⁶

But the other biographer, Nakur Chandra Bishwas, wrote in 1887 that Akshay Kumar wanted to leave both the *Patrikā* as well as the Brahmo Samāj for ill-health and "some other reason". At this point Vidyasagar proposed to him the position of Head Master of the Normal School (a teachers' training centre about to be opened)

¹²⁰ *Patrikā*, no. 141 (*Baishākh* 1777 *Shaka*/Apr-May. 1855) : 1-10. For quote see *supra*, note 27.

¹²¹ *Ātmajībanī*, pp.161-62.

¹²² Ray, *Jīban-brittānta*, pp. 94-95 fn.

It is interesting to note that the names of *Gautama* and *Kaṇāda*, two distinguished atheist philosophers of ancient India, in the same speech of Akshay Kumar did not perturb the Brahmo orthodoxy. The explanation may be found in Akshay Kumar's own observation that both philosophers strangely remained loyal to the *Vedas* in spite of their atheism, a trick that saved them from rejection by orthodox Hindus. *Upāsak Sampradāy*, vol. 2, 'Introduction'.

¹²³ Ajit K. Chakrabarti, *Maharṣi Debendranāth*, p. 194.

¹²⁴ *Ātmajībanī*, p.161.

¹²⁵ *Ibid.*, pp. 36-37.

¹²⁶ Ray, *Jīban-brittānta*.

and Akshay Kumar expressed relief saying, "then I shall survive."¹²⁷ It is then clear that at the time of Vidyasagar's offer of the Normal School position Akshay Kumar was still working with the *Patrikā* but was willing to leave for more reasons than only ill-health. In his letter dated July 2, 1855, to the DPI [Director of Public Instruction] recommending Akshay Kumar's appointment as the Head Master of the Normal School, Vidyasagar introduced him as "the well-known editor of the *Tattvabodhinī Patrikā*." Akshay Kumar got the appointment and the Normal School opened in Kolkata on 17 July 1855.¹²⁸ It seems, therefore, Akshay Kumar was still the editor of *Patrikā* in July 1855 when he was named Head Master of the Normal School.

Akshay Kumar served the new-born Normal School with efficiency for more than a year before going on a long leave in August 1856 on account of ill health. Then it is possible that he did not leave the *Patrikā*'s editorship, his only means of livelihood, so willingly at age 35 just for bad health. The most reasonable conclusion seems to be that Akshay Kumar left the *Patrikā* under pressure from the Brahmo orthodoxy when friend Vidyasagar came to his rescue with the Normal School position and he readily seized upon it with gratitude. Subal Chandra Mitra (1872-1913) an early biographer of Vidyasagar, wrote in 1902 that Akshay Kumar was afflicted with acute brain ailment only after joining the Normal School.¹²⁹ It is indeed possible that his untimely ouster from the position of his liking in the *Patrikā* was a factor in developing a brain problem. In this context it must be borne in mind that a few years earlier he had turned down Vidyasagar's first offer of a lucrative position in the government's education department and preferred to stick to the *Patrikā* for the intellectual advantages the editorship carried with it.¹³⁰

4.2.6 The Agnostic Emerges

By the time he was thrown out from *Tattvabodhinī Patrikā* Akshay Kumar had settled in agnosticism. This was his final position in metaphysics. As we have seen, Debendra Nath and Dwijendra Nath found an atheist in him in mid-1850's. But there is hardly any evidence that Akshay Kumar had ever subscribed to outright atheism in his intellectual career. Foundation of the *Ātmīya Sabhā* (October 1852) and his withdrawal from the *Patrikā* (July 1855) marked the period of Akshay Kumar's transition from Deism to agnosticism. Agnosticism was also the position of Ishwar Chandra Vidyasagar. Dwijendra Nath Tagore told writer Bipin Bihari Gupta (1875-1936) that Vidyasagar was "one kind of atheist that is called agnostic."¹³¹ It seems

¹²⁷ Bishwas, *Akṣay-Charit* as quoted in SSC-12, p. 25. Excerpt :
পীড়া ও অন্য কোন কারণবশতঃ অক্ষয়বাবু তখন তত্ত্ববোধিনী পত্রিকা ও ব্রাহ্মসমাজের নিকট হইতে বিদায় গ্রহণেচ্ছ হন। এ অবস্থায় যখন বিদ্যাসাগর মহাশয় তাহাকে প্রধান শিক্ষকের পদ গ্রহণের কথা বলিলেন, তখন তিনি অত্যন্ত আলোদের সহিত বলিলেন, 'তা হলে বাঁচি।

¹²⁸ SSC-12, 25-26.

¹²⁹ Subal Chandra Mitra, *Ishwar Chandra Vidyasagar : A Story of His Life and Work* (1902), rep., (New Delhi : Ashish Publishing House, 1975), p. 242.

¹³⁰ Satyendra Nath Datta in *Samājchitra*, (Papyrus ed. 1981) 5:264.

Mahendra Nath Ray says that Vidyasagar had proposed for Akshay Kumar the position of Deputy Inspector of Education, a newly created position with Rs. 150 per month, while Akshay Kumar was getting only Rs. 60. per month from the *Patrikā* at the time. Ray, *Jīban-brīttānta*, p. 51.

¹³¹ Gupta, *Purātan Prasanga*, p. 199.

both Debendra Nath and Dwijendra Nath perceived agnosticism as a form of atheism. Satyendra Nath Datta (1882-1922), a grandson of Akshay Kumar, observes that as a result of his study of Western sciences and psychology his grandfather turned "somewhat agnostic".¹³² With this was added the influence of Vidyasagar at whose inspiration, as we have known above, Akshay Kumar would write the excellent *Chārupāth*. (3 vols. 1853, 1854, 1859). It may not be merely incidental that 1853 saw the publication of both the 2nd (last) volume of the Deist-scientific treatise *Bāhya Bastu* and the first volume of *Chārupāth* (branded as an atheist-agnostic tract by Dwijendra Nath).

1853 may therefore be identified as the specific point in time that marks the exit of Deism from and advent of agnosticism in Akshay Kumar's conscience. The idea further developed through the two later volumes of *Chārupāth* and closer association with Vidyasagar since Akshay Kumar's departure from the *Patrikā*. Then during full retirement Akshay Kumar conducted more extensive research in the *Upaniṣads* looking for agnostic elements, unlike Debendra Nath who had searched the same texts for support of his monotheism. The result of this research he recorded in the enormous introductions of his two volumes (1870 and 1883) of *Bhārat Barsīya Upāsak Sampradāy* [Indian Religious sects]. Raj Narayan Basu later testified that Akshay Kumar had "long ago abjured his belief in Brahmosim and turned an agnostic. This . . . can be proved from passages in his works on Hindu sects" [i.e. *Upāsak Sampradāy*].¹³³ Akshay Kumar repeatedly rejects the idea of a personal creator through his own interpretation of the Six Philosophies, particularly *Sāmkhya*, *Nyāya* and *Vaiśeṣika* along with his appreciation of the Buddha's Godlessness and *Chārvāk's* atheism as well as other minor deviations in ancient Indian thought.¹³⁴ Then he concentrates on agnostic statements in the *Upaniṣads*. The *Upaniṣads*, in his assessment, appear to be the best product of the ancient Indian intellect¹³⁵ and he identifies the agnostic statements in them as the most valuable part of the classical wisdom of India. He quotes extensively from *Talavakāropaniṣad*. One example :

Yasyāmatam tasya matam, matam yasya na veda saḥ|

Avijñātam Vijñātām, Vijñātamavijñātām|| - Talavakāropaniṣad, 1.11.

[(Ultimate truth is) Known to him who does not know, and unknown to him who claims to have known. Knowers do not know, while non-knowers actually know.]¹³⁶

From this and many other similar expressions in various *Upaniṣads* Akshay Kumar concludes that the cause of the universe is unknown and unknowable and determines that this idea is undoubted and irrefutable.¹³⁷

In the introduction of *Upāsak Sampradāy*, Part 2 (1883) Akshay Kumar returns to the same point and reiterates his agnostic position in stronger terms corroborated with more *Upaniṣadic* quotes such as-

Yato vācho nivartante aprāpya manasā saha.

- Talavakāropaniṣad, Brahnavalli, 9 shruti.

¹³² *Samājchitra*, (Papyrus, ed., 1981), 5:267

¹³³ Quoted in SSC 12, p. 32.

¹³⁴ "Introduction" to *Upāsak Sampradāy*, pt 2, pp. 3, 17-21, 23-27, 41, 53-55, 237-38, 257.

¹³⁵ *Ibid.*, Pt-1, pp. 109, 111-12.

¹³⁶ Quoted in *ibid.*, pt.1, p. 113. Translation, by present investigator.

¹³⁷ *Upāsak Sampradāy*, pt. I (Introduction), pp. 113-14.

[Unable to reach (the Ultimate Truth) both speech and mind give up.]¹³⁸

From this position he formulates his epistemology which enjoins that man's right and ability to know is definitely limited. Man should never attempt to know the First Cause of the Universe which is not amenable to human understanding. Same is true about the ideas of the other world, the soul and salvation. Addressing questions concerning these topics is not only a folly but it leads to extreme confusion and error.¹³⁹ He however determines that "although there is no doubt that the [ultimate] cause of the Universe is unknowable, it is not proper to stop thinking altogether about that subject. It is necessary to try to know as far as possible in order to be confirmed about the conclusion", and stop only then when everything is dark in the front.¹⁴⁰

But then man must work his best to know the existing world and its rules without any prejudice and with the determination that we will go wherever pure reason and scientific inquiry lead us.¹⁴¹ Such sound knowledge refines our understanding, removes errors and superstition, and reveals to us the true principles that control the world. This enlightenment is necessary to formulate our duties in order to promote our own and the people's prosperity. Only such factual, practical and utilitarian knowledge is worthy of acquiring.¹⁴²

In this subsection we notice that while Debendra Nath searched the *Upaniṣads* to support his monotheism, Akshay Kumar perused the same sources as well as other systems of ancient Indian philosophies first to annul the idea of a monotheistic God and then to find confirmation of his agnosticism. Debendra Nath, as a spiritualist, disliked reason, debate and social reform, while Akshay Kumar argued for scientific and useful knowledge that can ensure man's social, moral, and material progress. In fact, Akshay Kumar cherished a dream of founding a society dedicated to physical and intellectual development; of writing more books on science, philosophy and Indian history; and pursuing various patriotic programmes. He has lamented his inability to fulfil these dear wishes.¹⁴³ Towards the end of his life, Akshay Kumar in keeping with his opinion mentioned above (fn. 140) gave a sort of new look to his agnosticism. He invented the term *Vishwaviṇi* [seed of the Universe] which he substituted for God's name on top of his will.¹⁴⁴ This shows that he still remained steadfast in his agnosticism but was looking for a more concrete form of it. Is that a remnant of his transitory love with Deism in the early fifties?

¹³⁸ Ibid., pt. 2 (Introduction); p. 49. Translation this investigator's

¹³⁹ Ibid., pp. 48-49.

¹⁴⁰ Ibid. p. 50. Translated. Bangla original : . . . যদিও বিশ্বকারণ অজ্ঞেয়-স্বরূপ তাহার সন্দেহ নাই, তথাচ সে বিষয়ে চিন্তা না করিয়া একেবারে নিরন্তর থাকা উচিত নয়। তাহাতে স্থির-নিশ্চয় হইবার উদ্দেশে যত দূর সাধ্য জানিবার চেষ্টা করা আবশ্যিক।

¹⁴¹ *Upāsak Sampradāy*, pt. I, p. 116.

¹⁴² Ibid., pt. 2, p. 32.

¹⁴³ *Upāsak Sampradāy*, pt. 2 (Introduction), p. 274.

¹⁴⁴ Justice Sarada Charan Mitra's (1848-1917) report in *Samājchitra* 2: 662.

5. The Aftermath

5.1 Vidyasagar Dominating the *Sabhā* and the *Patrikā*:

At the time of Akshay Kumar's retirement the *Tattvabodhinī Patrikā* was at the height of its growth and popularity. Rev. J. Long (1814-87) writes of the *Patrikā* in 1855: "It contains... a series of articles on natural history, philosophy, biography..., 700 copies are monthly circulated. It ... holds a high place for the abilities of its articles."¹⁴⁵ Naturally, as biographer Mahendra Nath Ray informs, Akshay Kumar was ambivalent to the end about leaving the *Patrikā* because of his concern for the magazine's future.¹⁴⁶ But he had to leave and the *Patrikā* passed into the hands of Nabin Chandra Bandyopadhyay who has been described as "the clown of the Debendra court" by Satyendra Nath Tagore (1842-1923), Debendra Nath's second son.¹⁴⁷ Despite the mediocrity of the new editor the *Patrikā* did not immediately decline because of the presence of the Paper Committee dominated by Vidyasagar. In fact, the removal of Akshay Kumar Datta did not mean an instant victory of the Brahmo orthodoxy. Sibnath Shastri (1847-1919) observes in his *History of the Brahmo Samāj*: "The retirement of Akshay Kumar Datta, however, did not altogether allay the rationalistic agitation. Many of the younger members of the friends' society [*Ātmīya Sabhā*] remained in the field and went on ventilating questions of reform . . ."¹⁴⁸ The "gusty debates of the *Ātmīya Sabhā*" as well as the usual complications of a wealthy joint family soon drove Debendra Nath away from the scene at least for two years.¹⁴⁹ He set on a lengthy tour of North India and the Himalayas in October 1856 leaving the ground open to Vidyasagar. Consolidating his position further in the *Tattvabodhinī Sabhā* and the Paper Committee, Vidyasagar persuaded the *Sabhā* to sanction a small monthly allowance to ailing and jobless Akshay Kumar, utilized the *Patrikā* fully in favour of his social reform programme, and finally became General Secretary of the *Sabhā* in April 1858.

5.2 Debendra Nath Kills the *Sabhā*

The situation however took an opposite turn after Debendra Nath returned home in November 1858. One of the reasons of his retreat had been, according to Sibnath Shastri, to be able to engage in a "close examination of the new bearings that had . . . arisen around the faith of the Brahmo *Samāj* in consequence of the surrender of the doctrine of spiritual infallibility."¹⁵⁰ And he actually returned from Simla a healthier, happier, fully satisfied, more powerful and more determined man, and resumed the work of Brahmo *Samāj* with renewed zeal and jealousy.¹⁵¹ But he found the sectarian

¹⁴⁵ Rev. J. Long, *Descriptive Catalogue of Bengali Books* as quoted in Ray, *Jīban-brittānta*, p. 56.

¹⁴⁶ Ray, *Jīban-brittānta*, p. 52-53.

¹⁴⁷ "নবীনবাবু ছিলেন দেবেন্দ্র সভার বিদূষক"। Satyendra Nath Tagore quoted in *Samājchitra*, vol. 5, p. 288.

¹⁴⁸ Sibnath Shastri, *History of the Brahmo Samaj*, p. 71.

¹⁴⁹ Raj Narayan Basu, "Brahma Vidyālay, Debendranāth o Keshabchandra" [Debendra Nath and Keshab Chandra in *Brahma-Vidyālaya*], *Prabāsī*, vol. 27, pt. 2, no. 3 (*Paus* 1334/Dec 1927-Jan 1928) : 307. The background of his disgust and departure has been outlined by Debendra Nath himself in *Ātmajībani*, pp. 169-74.

¹⁵⁰ Sibnath Shastri, *History of The Brahmo Samaj*, p. 71.

¹⁵¹ See Raj Narayan Basu "Debendranāth o Keshabchandra", p. 304.

Samāj already overshadowed by the secular and vibrant *Tattvabodhini Sabhā* under the leadership of Secretary Vidyasagar. "The affairs of the *Samāj*", writes Sibnath Shastri, "were still managed by the old *Tattvabodhini Sabha* of which the majority of the managing council consisted of the older members, among whom were some prominent disciples of Akshay Kumar Datta . . ."¹⁵² For most people the *Sabhā* was far more important than the *Samāj* which was looked down upon as an obscure associate of the *Sabhā*. Debendra Nath, on the other hand, refused to acknowledge the predominance as well as the secular and cosmopolitan character of the *Sabhā* and wanted to see it nothing more than a mere instrument of the *Samāj's* sectarian program.¹⁵³ Totally disappointed with the *Sabhā's* performance under humanist Vidyasagar, a known enemy of *Vedānta* spirituality,¹⁵⁴ the Himalaya-returned 'Maharṣi' ['Great Sage': which would be the regular title of Debendra Nath from 1867 onwards.¹⁵⁵] readily adopted a high-handed policy to exterminate all secular influences in the *Sabhā* and the *Patrikā*. He decided to abolish the two-decade old *Sabhā* abruptly in the middle of its distinguished career. Debendra Nath's close associate Raj Narayan Basu writes on this point :

Debendrabābu decided that . . . there is no need for maintaining the *Tattvabodhini Sabhā* as a place for arguments over people's opinions. He would be able to get all work of the Brahmo *Samāj* done by the efficient and advanced Brahmos who are now available. Then the Brahmos would get rid of the worry of conflict of views. For, the founder of the Brahmo *Samāj* had not left any room for dispute over opinions in the *Samāj*.¹⁵⁶

¹⁵² Sibnath Shastri, *History of the Brahmo Samaj*, pp. 78-79.

¹⁵³ Editor Satish C. Chakrabarti's note in *Ātmajībanī*, pp. 307-8. Excerpt :

দেশের লোক ব্রাহ্ম সমাজের নাম পর্যন্ত ভুলিয়া গিয়াছিল, এবং তত্ত্ববোধিনী সভার খ্যাতি প্রতিষ্ঠিত হইলে লোকে তাহাকে ঐ সভার দল বলিয়া চিনিতে লাগিল . . . । কিন্তু এইরূপ খ্যাতি ও প্রতিপত্তি হওয়া সত্ত্বেও, দেবেন্দ্রনাথের দৃষ্টিতে এই সভা ব্রাহ্ম সমাজের কার্যের একটি যন্ত্রমাত্র ছিল। অপর দিকে অনেক সভা এই সভার নামেই আপনাদিগকে গৌরবান্বিত বলিয়া অনুভব করিতেন; তাঁহাদের চক্ষে ব্রাহ্মসমাজ অপেক্ষা এই সভার মূল্যই অধিক ছিল।

¹⁵⁴ As early as 1853 Vidyasagar had declared *Vedānta* and *Sāṃkhya* as false systems of philosophy and had desired to counter their influence with sounder systems from Europe:

That the Vedanta and Sankhya are false systems of philosophy is no more a matter of dispute . . . whilst teaching these in the Sanscrit Course, we should oppose them by sound philosophy in the English course to counteract their influence.

Vidyasagar's letter dated 7 September 1853 to the Council of Education, as reproduced in Arabinda Guha (Indramitra), *Karuṇāsāgar Vidyāsāgar* [Vidyasagar, the Ocean of Compassion], 2nd rep., (Kolkata : Ananda Publishers, 1971), p. 730.

¹⁵⁵ Ajit K. Chakrabarti, *Maharṣi Debendranāth*, p. 373.

¹⁵⁶ Raj Narayan Basu, "Debendranāth o Keshabchandra", p. 308. Translated. Bangla original :

দেবেন্দ্রবাবু স্থির করিলেন যে ... আর তত্ত্ববোধিনী সভা রাখিয়া লোকদিগের মতামত লইয়া বিবাদ করিবার প্রয়োজন নাই। এখন যে কার্য্যতৎপর উন্নত ব্রাহ্মগণকে পাওয়া যাইতেছে ইহাদিগকে লইয়া ব্রাহ্ম সমাজের সকল কার্য্য নির্বাহ করিতে পারিবেন। তাহা হইলে ব্রাহ্মদিগের মতামতের জন্য বিবাদের চিন্তা হইতে নিশ্চুতি লাভ হয়, কারণ ব্রাহ্মসমাজের সংস্থাপক ব্রাহ্ম সমাজে মতামতের জন্য বিরোধ হইবার পথ রাখিয়া যান নাই।

Accordingly, Debendra Nath asked Secretary Vidyasagar to dissolve the *Tattvabodhinī Sabhā* in May 1859 and acquired the *Sabhā's* asset for the Brahmo *Samāj*.¹⁵⁷ Vidyasagar naturally did not like these changes. His secretaryship went with the ill-fated *Sabhā* and he completely dissociated himself from the sectarian *Samāj*.¹⁵⁸ It is significant to note that Debendra Nath killed the splendid *Sabhā* not for corruption or inefficiency, but to do away with debates, controversies, and intellectual pluralities it fostered during its predominantly secular career.

The last part of Basu's statement quoted above makes it clear that the orthodox viewed the Brahmo *Samāj* built as a monolith by Ram Mohan Roy providing no scope for difference of opinion or for rational exchanges over such differences. The statement also implies that the presence and predominance of non-Brahmos like Vidyasagar and pseudo-Brahmos like Akshay Kumar Datta was the cause of dissent and lack of religiosity in the *Sabhā*. The Brahmos had so long been utilizing the services of intelligent non-Brahmos to their own advantage because the Brahmo community initially lacked able writers, thinkers and hard workers.¹⁵⁹ Now, at the lapse of some fifteen years the Brahmo community had grown through, they had a well-built organization as well as a journal of high intellectual standard and enviable popularity. So the overconfident Brahmo orthodoxy found it convenient to discard the non-Brahmo elements altogether in order to make their organization and journal purely communal properties.

5. 3 The *Patrikā* Smitten, Deteriorates

With the *Tattvabodhinī Sabhā* Debendranath also abolished the Paper Committee and proceeded to bring the *Patrikā* under his own control. During Debendra Nath's absence Vidyasagar had been utilizing the journal in favour of his social reform programme. Thus, even after Akshay Kumar Datta's departure the *Patrikā* continued to carry articles on widow remarriage and evils of polygamy. This annoyed the Brahmo orthodoxy including Debendra Nath himself who desired the *Patrikā* to be an organ exclusively of religious propaganda.¹⁶⁰ So many scientific articles occupying the pages of the *Patrikā* particularly during Akshay Kumar's editorship had also irritated Debendra Nath Tagore. Therefore early in 1859 he stipulated that—

Lots have been written about God's craft in previous issues of the *Patrikā* and still some must be written about that subject. But the particular aim of the fifth *Kalpa* [four-yearly installment, the fifth to begin from April 1859] of *Tattvabodhinī Patrikā* would be to propagate the fact of the Soul's proximity to God, to inspire the Soul's eagerness for divine experience.¹⁶¹

¹⁵⁷ Ibid.

¹⁵⁸ Shibnath Shastri, *History of the Brahmo Samaj*, p. 79.

¹⁵⁹ See Rakhal Das Halder's observation on Brahmo life as nothing more than thoughtless luxury. Ajit K. Chakrabarti, *Maharshi Debendranāth*, p. 196.

¹⁶⁰ Editor Satish C. Chakrabarti's note in *Ātmajīvanī*, p. 308. Excerpt :

ঈশ্বরচন্দ্র বিদ্যাসাগর মহাশয়ের সহিতও দেবেন্দ্রনাথের সংঘর্ষ উপস্থিত হইয়াছিল। বিদ্যাসাগর মহাশয় একবার তত্ত্ববোধিনী পত্রিকায় ধর্মতত্ত্ব অপেক্ষা বিবধা বিবাহ প্রচারেই অধিক উৎসাহ প্রকাশ করিয়া ব্রাহ্ম সমাজভুক্ত . . . রক্ষণশীল লোকদিগকে বিরক্ত করিয়া তোলেন।

¹⁶¹ Debendra Nath Tagore's letter quoted in Raj Narayan Basu, "Debendra Babur Upadesh, Upāsana o Dikshā-paddhati" [Debendra Babu's advice, prayers and method of initiation],

It is to be noted that Debendra Nath was going to allow some scientific writings also in the *Patrikā* because they would be likely to reveal "Ishwarer kaushal" or the Creator's craft.

In December 1859 Debendra Nath placed the *Tattvabodhinī Patrikā* in the hands of his seventeen-year-old son Satyendra Nath Tagore. Since then the *Patrikā* remained almost a family organ of the Tagores edited either by Debendra Nath's own sons or family associates.¹⁶² Thus by the end of 1859 the sectarianization programme of Tagore under family control was complete. It is probably at this point that the disciples of Akshay Kumar Datta "finally withdrew themselves from the Samāj . . . to form a separate Samāj of their own" as Shibnath Shastri puts it.¹⁶³ But this does not seem to have led to a regular schism. However, an inevitable result of Debendra Nath's action was sharp decline of the *Patrikā*. Number of patrons fell from 700 to 200 in a few years.¹⁶⁴ In 1864 Debendra Nath himself lamented this deterioration of the journal following Akshay Kumar's departure and desired revival and a new life for the *Patrikā*.¹⁶⁵ His wish was however not to be fulfilled, and the *Patrikā* soon grew to be the vehicle of backward and reactionary ideas—just the opposite of what it was under Akshay Kumar and Vidyasagar.

One unmistakable indicator of such retrogression is the increasingly conservative, even reactionary, attitude of the *Patrikā* towards education and emancipation of women—the very keynote of all reform movements in the nineteenth century, the most precious concern of so many great minds between Ram Mohan Roy and poet Madhusudan Datta (1824-73). In *Bahya Bastu* Akshay Kumar had eloquently argued in 1850 for women's education along with the spread of education of men in order to ensure conjugal harmony between educated consorts.¹⁶⁶ In the June 1853 issue of the *Patrikā* he again proclaimed in irrefutable terms the need to educate women in such sophisticated disciplines as physics, chemistry, natural history, ancient history, Indian sociology, religious studies, astronomy, anatomy, and physiology.¹⁶⁷ In the wake of so-called Hindu revivalism from 1870s onwards, the same *Patrikā* under orthodox Brahmo editorship most shamelessly advocated ignorance and captivity for Indian women. Numerous quotes may be arrayed to support this statement. Limitation of space however prevents us to do so but refer only to some instances.

Prabāṣī, vol. 27, pt.2, no. 4 (*Māglā* 1334BS/Jan.-Feb. 1928), pp. 463-64. Translated. Bangla original :

পূর্ব পূর্ব পত্রিকাতে ঈশ্বরের কৌশল বিষয়ে অনেক লেখা হইয়াছে এবং এখনও সে বিষয়ে অবশ্যই লিখিত হইবে। কিন্তু আত্মাকে ঈশ্বরের প্রতি উলুখ করিবার, ঈশ্বরের সহিত আত্মার যে নৈকট্য তাহা প্রচারের প্রতি তত্ত্ববোধিনী পত্রিকার পঞ্চম কল্পের বিশেষ লক্ষ্য থাকিবে।

¹⁶² This is clear from the list of the *Patrikā*'s editors from 1843 to 1932 found in *Samājchitra*, 5. (Papyrus rep. 1981): 226. The Tagores alone edited it for 50 years out of 73 between 1859-1932.

¹⁶³ Shibmath Shastri, *History of the Brahmo Samaj*, p. 71.

¹⁶⁴ Ray, *Jīban-brittānta*, p. 236.

¹⁶⁵ Debendra Nath Tagore, *Brāhma-Samājer Pañchbimshati Batsarer Parikṣita Brittānta* [An examined report of twenty-five years of the Brahmo Samāj] (1864), as quoted in *ibid.*, p. 239.

¹⁶⁶ *Patrikā*, no. 79 (*Phālḡun* 1771 *Shaka*/Feb-March 1850) : 177.

¹⁶⁷ *Patrikā*, no. 119 (*Āṣāḍh* 1775 *Shaka*/June-July 1853), quoted and discussed in Ray, *Jīban-brittānta*, pp. 236-237.

In July 1872 issue of the *Patrikā* Ishan Chandra Basu (1843-1912) opposed equal rights of women with men and supported status quo with slight changes in the shape of broadening of men's heart in favour of women.¹⁶⁸ Four years later, the *Patrikā* would plainly disapprove girls' education in schools and, instead, advocate a home education system conducted by aged female tutors with such curricula as the Indian Epics, sewing, cooking and home therapy.¹⁶⁹ In another article in the February 1881 issue the *Patrikā* categorically assigned a lower position for women than for men in society.¹⁷⁰ In the next issue, university education was denigrated as damaging even for men, and therefore was not at all to be imparted to women who were to learn only religion, cooking, sewing etc.¹⁷¹ Under Dwijendra Nath Tagore's editorship the *Patrikā* turned even more reactionary and openly supported Manu's notorious dictum that women never deserve freedom.¹⁷² Such was the downfall of the Brahmo movement itself after Debendra Nath dissociated it from the scientist-humanist efforts of Akshay Kumar and Vidyasagar.

6. Conclusion

From the foregoing account we can discern at least four stages in the long-drawn conflict between Akshay Kumar Datta and Debendra Nath Tagore, or rather between the ideas they represented. First, the conflict (1844-47) over the idea of divinity and infallibility of the *Vedas* which ended up in the discovery (in 1847) of an *Upāṇiṣadic* passage that categorically declares the *Vedas* as embodying inferior knowledge. Then Debendra Nath had to give up his dogmatic belief in the *Vedas* in face of Akshay Kumar's scientific-rationalist arguments. In the second phase (1848-53) the two would systematize their ideas and develop two conflicting bibles. Debendra Nath came up with *Brāhmadharma Grantha* (1848-50), a monotheistic derivative of the *Upāṇiṣads* and other Hindu texts. Then Akshay Kumar would, as if in response, present a Deist-scientific thesis in his *Bāhya Bastu* (2 vols. 1849-53) which he fashioned after George Combe's *Constitution of Man* (1828).

A heightened rationalism cultivated in the *Ātmiya Sabhā* and a humanist-philanthropist inspiration from Ishwar Chandra Vidyasagar introduced a fundamental change in Akshay Kumar's interest and efforts in the third phase (1853-59). His scientism was supplemented by a humanist enthusiasm for social reform and social

¹⁶⁸ *Patrikā*, no. 347 (*Shrāvan* 1794 *Shaka*/July-Aug1872) : 73. An excerpt :

...পুরুষের অবস্থা ক্রমে সহজ ও তাহার প্রকৃতি সদত হইয়া আসুক এবং তাহারা ... দাক্ষিণ্য সহকারে স্ত্রীদিগের সুখদুঃখে সমুচিত সহানুভূতি করুক, তাহা হইলে ... স্ত্রীগণ এক্ষণে যে ভাবে যে প্রণালীতে ও যে অবস্থায় সংসারে অবস্থান করিতেছেন ইহার বিরুদ্ধাচরণ করিবার অল্প কারণই বিদ্যমান থাকিবে।

¹⁶⁹ *Ibid.*, no. 394 (*Jaiṣṭha* 1798 *Shaka*/May-June1876) : 38.

¹⁷⁰ *Ibid.*, no. 451 (*Phālgun* 1802 *Shaka*/Feb-March1881) : 216-219. An excerpt :

স্ত্রীলোক চিরকাল পুরুষের নিম্নপদবীতে থাকিবে? আমরা বলি স্ত্রী লোকদিগের তাহা থাকাই উচিত। . . . জন সমাজে স্ত্রীজাতির যদি পুরুষ অপেক্ষা উচ্চ পদবী থাকে তাহা হইলে নানা প্রকার কার্যাবিশৃঙ্খলা ঘটিতে পারে। . . . সুতরাং স্ত্রীজাতির পুরুষ অপেক্ষা নিম্নপদবী থাকাই সর্বতোভাবে শ্রেয়। p. 217.

¹⁷¹ *Ibid.*, no. 452 (*Chaitra* 1802 *Shaka*/March-April1881) : 227-230. A relevant quote :

আমাদিগের সম্পূর্ণ আশঙ্কা ... বঙ্গীয় স্ত্রীলোকেরা বিশ্ববিদ্যালয়ের শিক্ষাপ্রণালী অনুসারে শিক্ষিত হইলে বঙ্গীয় শিক্ষিত পুরুষদিগের ন্যায় তাহারা ধর্ম বিশ্বাসশূন্য ও সুনীতি-বিচ্যুত হইবেন। p. 228.

¹⁷² See article "Striswādhinātā o Manu" [Manu and Freedom of Women] in *ibid.* no. 576 (*Shrāvan* 1813 *Shaka*/July-Aug. 1891) : 72-78.

progress and his Deism was silently replaced by agnosticism, if not outright atheism. Association with the *Samājonnatibdhāyini Suhṛit-Samiti* and writing of the three-volume *Chārupāṭh* (1853-59) are expressions of the great transformation. This position was altogether incompatible with Brahmoism, and Akshay Kumar had simply to leave the *Patrikā*, the *Sabhā* and the *Samāj* by the middle of 1855. In the last phase (1859-83) we find Akshay Kumar working on a combination of agnosticism, scientism and humanism in the light of a comparative study of Indian and European intellectual history. Ill-health prevented him from undertaking any humanitarian and social work programme in the practical world, but his untiring support was always there for such progressive efforts as education and emancipation of women. And he would repeatedly deplore the reactionary role of the degenerated *Tattvabodhini Patrikā* and the Debendra-led Brahmo *Samāj* in respect of such issues as women's education and pursuit of science *vis-à-vis* that of religion and spirituality. Akshay Kumar's ideas in this phase are preserved in the two enormous volumes of *Bhāratbarṣiṃ Upāsak Sampradāy* (1870-83).

One interesting point to note is the place of Ishwar Chandra Vidyasagar in the history of Akshay-Debendra ideological conflict. The dialogue started in the mid-forties between the two giants, but acquired a third dimension when Vidyasagar joined it early in the fifties. His influence divested Akshay Kumar's scientism of the garb of deism, gave his rationalism a purer and more humanitarian composition, and pulled him more towards social responsibility and agnostic materialism. And it was these developments that finally destroyed the uneasy partnership of Debendra Nath and Akshay Kumar. Thus, the decade-old Akshay-Debendra dialectic took the shape of tripartite exchanges and Vidyasagar served as the third arm of a triangle that enclosed the premise of advanced thinking in Bengal in the 1850's.

Akshay Kumar's experience showed that religion and science are intellectually incompatible. He had conflict not only with Hinduism and Brahmoism but also with Semitic monotheisms. He then tried to take shelter in Deism, the historic device of French Philosophers in the eighteenth century. But eventually he realized that the most comfortable metaphysics for a scientist was either agnosticism or outright atheism, rather than even deism. Socially, however, after being ousted from the Brahmo *Samāj*, Akshay Kumar felt comfortable in the Hindu society, rather ironically, although he never shed his deep dislike of Hinduism, nor was he ever tired of uttering the harshest denuncements of the Indian mainstream. This fact shows that the plural nature of Hinduism makes it far easier for a dissident to survive and flourish than in a dogmatic society like the one of the Brahmos who would not tolerate the freedom of thought and speech as cultivated in the *Ātmīya Sabhā* or that of judgment as exercised by the members of the Paper Committee. In this regard it is to be remembered that Akshay Kumar himself was bewildered at the scene of worship at *Garīgāsāgar* (confluence of the Ganges with the Ocean) by devout Hindus of the ancient sage *Kapila* the atheist author of the *Sāṅkhya* system of philosophy: "It is not a small joke that despite being a renowned atheist, *Kapil* has ever remained an object of worship by religious Hindus."¹⁷³ Thus, Akshay Kumar seems not to have understood the dynamics of Hindu pluralism, although he enjoyed its benefits fully.

¹⁷³ Translated. Bangla original :

কপিল সুপ্রসিদ্ধ নাস্তিকতাবাদী হইলেও স্বধর্মপক্ষপাতী হিন্দু জাতির পূজা হইয়া রহিয়াছেন ইহা সামান্য কৌতুকের বিষয় নয়।

Bāhya Bastu, pt. II, "Introduction", p. 10.

BUDDHISM IN BENGAL IN THE EARLY MEDIEVAL PERIOD

Shankar Goyal*

Abstract : In the early medieval period of Indian History Buddhism found a safe refuge in Bihar and Bengal under the patronage of the Pāla kings after it had ceased to have any hold in the rest of India with the exception of the Himālayan regions. The Pāla rulers were all Buddhists, and during their long rule of over four centuries we find their numerous inscriptions which begin with an invocation to the Buddha which sum up the ideology of the Buddha and Bodhisattvas in the most developed Mahāyāna form. The author of the present article has delineated the flowering condition of Buddhism from the period of Gopāla, the founder of the Pāla dynasty, to the reign of Rāmapāla. According to the author, it was mainly from the Pāla Empire that Buddhism was introduced into Tibet where, combined with many native beliefs, it survives to the present day.

1. Introduction

The patronage of the Pāla kings forms one of the most important factors in the history of Mahāyāna and Tāntrika Buddhism. The Pāla rulers were all Buddhists, and during their long rule of over four centuries Buddhism found a safe refuge in Bihar and Bengal after it had ceased to have any hold in the rest of India with the exception of the Himālayan regions. It was mainly from the Pāla Empire that Buddhism was introduced into Tibet where, combined with many native beliefs, it survives to the present day.¹ The numerous inscriptions of the Pālas begin with an invocation to the Buddha which sum up the new ideology of the Buddha and Bodhisattvas in the most developed Mahāyāna form.

2. Buddhism under Gopāla

Gopāla, the founder of the Pāla dynasty, was a benefactor of Buddhism. Whether he himself adopted Buddhism or he was born in a Buddhist family, is not definitely known. In the inscriptions of Nārāyaṇapāla he is compared to the Buddha. He revived the Nālandā monastery, erected several new monasteries in his dominion, and offered lavish gifts to the Buddhist clergy. During his reign an *upāsaka* built the

* Dr. Shankar Goyal, Assistant Professor of History, Jai Narain Vyas University, Jodhpur, India.

¹ A. L. Basham, *The Wonder that was India*, London, 1954, pp. 71-73.

towering Odantapurī monastery, spending immense gold which he obtained, it is said, miraculously. This structure served as a model for the first monastery built in Tibet. Gopāla himself built the Nālandā temple near Odantapurī. The *Ārya Mañjuśrī Mūla Kalpa* informs us that Gopāla built "vihāras, chaityas, gardens, reservoirs, beautiful rent-free hospices, bridges, deva temples and caves."² This shows that though a Buddhist, he was a benevolent ruler and was interested in the welfare of the people in general though belonging to other creeds and faiths.

The great philosopher and dialectician Śāntarakṣita lived and worked during the reign of Gopāla and died during the reign of Dharmapāla.³ He belonged to a royal family of Bengal and became a distinguished *Āchārya* of Nālandā. At the invitation of the Tibetan king *Khri-sron-ide-tsan*, he went to Tibet and stayed there up to 762 A.D. In Tibet he was called *Paṇḍita Bodhisattva* or Dharmasāntighosha. Śāntarakṣita also spent six years in Nepal where he worked for the propagation of the religion of the Buddha. He was credited with having laid the foundation of the historic Svayambhū Chaitya. Śāntarakṣita wrote a commentary on Dharmakīrti's *Vādayāya* but his masterpiece was the voluminous work *Tattvasamgraha* in which he refuted the views of other Buddhist and non-Buddhist schools and is seen supporting the Yogāchāra views.⁴

3. Dharmapāla's Patronage of Buddhism

The next Pāla king Dharmapāla is described as *Paramasaugata* in his own inscriptions as well as in those of his successors. He is credited with the foundation of the Vikramaśīlā or Vikramaśīla monastery, one of the most important Buddhist seats of learning in India from the 9th to the 12th centuries A.D.⁵ It was so-called because Dharmapāla had a second name or epithet *Vikramaśīla*.⁶ He was a great admirer of the teachings of the *Prajñāpāramitā-sūtra*. He made Haribhadra, the great commentator of the exponent of the *Prajñāpāramitā-sūtra* and Yogāchāra philosophy, his spiritual preceptor. Haribhadra had come of a royal family and had studied the Mādhyamika texts with Śāntarakṣita, and the Yogāchāra texts with

² K. P. Jayaswal, *An Imperial History of India*, Lahore, 1934. pp. 683-90.

³ For the detailed life-history of Śāntarakṣita, vide S.D.P. Singh, 'Nālandā Paṇḍita Śāntarakṣita: His writings and Endeavour to Propagate Buddhism in Tibet and Nepal', in *Proceedings of the Indian History Congress*, 42nd Session, 1981, pp. 110-114.

⁴ N. Dutt, in *The Age of Imperial Kanauj*, Bombay, 1955, p. 270 (hereafter cited as *AIK*).

⁵ For a detailed study of the Vikramaśīlā University, vide A. S. Altekar, *Education in Ancient India*, Varanasi, 1957, pp. 127-31; R. K. Mookerji, *Ancient Indian Education*, Delhi, Reprint, 1974, pp. 587-95; S.C. Saran, 'Vikramaśīlā University—A Centre of Tāntricism', in *K.P. Jayaswal Commemoration Volume*, Patna, 1981, pp. 117-12.

⁶ R. C. Majumdar, *A Comprehensive History of India*, Vol. III, pt. i. New Delhi, 1981, p. 660 (hereafter cited as *CHI*).

Vairochanabhadra. He wrote commentaries on the *Ashtasāhasrikā-Prajñāpāramitā* and other texts. His commentary (*Āloka*) on the *Abhisamayālaṅkāra*, a treatise interpreting the *Prajñāpāramitā-sūtra* from the Yogāchāra standpoint, is a testimony of his vast and deep knowledge of the Buddhist doctrines.⁷ He resided in the Traikūṭaka-vihāra and died about two decades after Dharmapāla's accession to the throne. After the death of Haribhadra, Buddhajñāna-pāda, one of the best disciples of Haribhadra, became the spiritual preceptor of Dharmapāla. He propagated the rituals and teachings of the *Kriyā* and *yogatantras*, particularly of the *Guhyasamāja*, *Māyājāla*, *Chandraguhyatilaka* and *Mañjuśrīkrodha*. He performed the consecration ceremony of the Vikramaśilā monastery and became its first spiritual head, the *Vajrāchārya*.

Besides these two teachers, there were a number of distinguished monks, specialising in certain branches of studies. They include the Tāntrika Āchāryas Praśāntamitra, Buddhaguhya and Buddhaśānti, disciples of Buddhajñāna-pāda, Rāhulabhadra and Āchārya Padmākaraghosha of Kashmir, the commentator Kamalaśīla, and the dialecticians Kalayāṇa-rakshita, Sobhavyūha, Sagaramegha, Prabhākara, and Pūrṇanavardhana and Dharmākaradatta to Kashmir. Praśāntamitra, the disciple of Jñānapāda, studied the *Prajñāpāramitā*s and some sections of the *Kriyā* and *Yoga tantras* and attained *Yamāntaka-siddhi*. He built a monastery called Amṛtakarā to the south of Nālandā.⁸

3.1 Vikramaśilā

In the Vikramaśilā monastery, founded by Dharmapāla, in the north on top of a mountain near the Gaṅgā in Magadha, there were fifty-three cells suitable for Tāntrika esoteric practices and fifty-four rooms for general use of monks; in all there were 108 cells including the central chamber. These were surrounded by a wall having six gates.⁹ One hundred and eight *bhikshus* (*paṇḍitas*) were in charge of the vihāra. Each of them had a certain specified duty, viz. making offerings to deities, performing *homa*, giving initiation, looking after pigeons, temple-attendants, and so forth. Some of these *bhikshus* were entrusted also with the task of teaching different

⁷ *AIK*, p. 270.

⁸ *Ibid.*, p. 271.

⁹ Vikramaśilā (present-day Antichak in District Bhagalpur, Bihar) excavations have brought to light a massive stūpa with two terraces belonging to the Pāla period. The excavation of 1971-82 exposed the northern, western, and portions of the southern and eastern wings of a 330-metre square monastery. "From the plan so far reconstructed, it may be seen that the monastery had altogether 208 (*sic*) cells. The gateway complex is located in the centre of the north wing. The passage through the gateway is paved with bricks on edge. The outer wall of the monastery is marked by rectangular and circular bastion-like projections" (B.K. Thapar, *Recent Archaeological Discoveries in India*, Paris, 1985, p. 135).

subjects, e.g. Grammar, Metaphysics, Logic, Ritualistic practices, etc. The students or attendants to the discourses were given food and money by the state. The income of the establishment was shared equally by the 108 *paṇḍitas*.¹⁰ Diplomas were awarded to the monk-students who showed proficiency. To this monastery flocked students not only from all corners of India but also from Tibet and other foreign countries. Here many Sanskrit texts were translated into Tibetan. Jinārakṣita, the commentator of Sarvajñamitra's *Sragdharāstotra*, lived in this monastery and so also did Dharmāśrīmitra, mentioned in the *Bṛhat-svayambhū-purāṇa*.¹¹ Tārānātha gives an account of the succession of the Vajrācāryas of the vikramaśīlā monastery. According to him, there were five generations of Vajrācāryas, but actually there are twelve names, preceding the six *dvāra-Paṇḍitas* viz. Buddhajñānapāda, Dīpaṅkarabhadra, Jayabhadra, Śrīdhara, Bhavabhadra, Bhavyakīrti, Līlāvajra, Durjanachandra, Kṛṣṇasamayavajra, Tathāgatarakṣita, Bodhibhadra, Kamalarakṣita; then the six *dvāra-paṇḍitas*, Dīpaṅkaraśrījñāna and others and then Abhayākaragupta, Śubhākaragupta and others.¹²

During the regime of Dharmapāla, the *Saindhavaśrāvakas* created some trouble at Vikramaśīlā. They destroyed the metal image of Heruka, burnt the Mantra treatises, preached that Mahāyānism (i.e. Tāntrikism) did not represent Buddha's true teachings and converted many pilgrims from Bengal to their faith. These *Śrāvakas* were mostly *bhikṣus* of Simhala. Dharmapāla was enraged at this attempt of the *Śrāvakas* and was going to punish them, but he desisted from doing so at the advice of Buddhajñānapāda.

3.2 Other Monasteries

Dharmapāla is said to have established fifty monasteries. He was the founder of the Sompura Vihāra in Vārendri. According to some accounts he also built a magnificent monastery at Odantapurī, though the credit for this is given by some to either his father or his son.¹³ Archaeological excavations have proved that Paharpur in Naogaon district of Bangladesh was the ancient site of the Sompura monastery, for some of the seals discovered here bear the inscription meaning that 'Sompura Vihāra was of (that is, was founded by) Dharmapāla'.¹⁴ He also patronised Nālandā Vihāra. A copper plate grant of 'Paramēśvara Paramabhaddraka Mahārājādhirāja Dharmapāla'

¹⁰ N. Dutt, *op.cit.*, p. 271.

¹¹ Ibid.

¹² Ibid., p. 272.

¹³ R. C. Majumdar, *CHI*, III, i, p. 660.

¹⁴ For an account of these excavations cf. *Memoirs of the Archaeological Survey of India* No. 55 (Paharpur—K.N. Dikshit).

has been found at Nālandā.¹⁵ An inscription incised on the rim of a sculptured stūpa bearing a number of seated Buddha figures carved on it has been found at Nālandā. It refers to the time when "the illustrious Dharmapāla of wide fame was the king."¹⁶

3.3 Patronage of Other Religions

Though Dharmapāla was a Buddhist, he was tolerant to other religions. His Khalimpur inscription speaks of him as honouring all the sects, especially the Brāhmaṇas. He granted four villages to a Brāhmaṇical temple and appointed Brāhmaṇa Garga as his minister. According to H.P. Sastri, Dharmapāla's liberal attitude towards Brāhmaṇism was due to the influence of his Hindu wife Raṇṇādevī, who was a daughter of Parabala, a Rāshṭrakūṭa chief.¹⁷

4. Devapāla and Buddhism

Devapāla, son and successor of Dharmapāla, also followed the religious policy of his father. He was a patron of Buddhism, and is described as *Paramasaugata* in his inscriptions. A votive inscription on a metal image dated in the 3rd year of his reign has been found at Nālandā. Tāranātha credits him with the re-establishment of the Buddhist religion. An undated Buddhist inscription from Ghosrawan informs us that a Brāhmaṇa of Nagarahāra was appointed by Devapāla the Chief-Abbot of Nālandā. Another copper-plate inscription with the seal of Devapāla found at Nālandā states that Bālaputradeva, king of Suvarṇadvīpa, requested for permission (of Devapāla) to grant four villages for the maintenance of the Vihāra at Nālandā built by Bālaputradeva himself. Devapāla granted the request.¹⁸ Another inscription on a statue of the Buddhist Goddess Tārā found at Hilsa (24 km from Nālandā), mentions Devapāla and Mañjuśrīdeva of Nālandā Mahāvihāra and registers a gift by Gaṅgādhara, a lay-devotee of Buddha. It is dated in the 35th year of Devapāla's reign.¹⁹ Several other Buddhist inscriptions of the reign of Devapāla have been found at Nālandā and other sites.

One of the most remarkable achievements of Devapāla was the restoration of the sand-buried temple, *Śrī Traikūṭaka*, and its enlargement. This temple in course of time came to be known as the new Somapurī-vihāra the ruins of which have been discovered at Paharpur. Haribhadra states in the colophon of his work,

¹⁵ Cf. B.P. Sinha, *Dynastic History of Magadha*, New Delhi, 1977, p. 183.

¹⁶ B. P. Sinha, *The Decline of the Kingdom of Magadha*, Patna, 1954, p. 365.

¹⁷ H.P. Sastri, in *Memoirs of the Royal Asiatic Society of Bengal*, III, p. 6; also cf. H.C. Ray, *The Dynastic History of Northern India*, vol. 2, Calcutta, 1936, p. 56.

¹⁸ Sinha, *op. cit.*, p. 376; R.C. Majumdar, in *The History of Bengal*, (Vol.1 : Hindu Period), Dacca, 1943, pp. 121-122 (hereafter cited as HB).

¹⁹ Sinha, *op.cit.*

*Abhisamayālaṅkāra*loka, that he resided in the Traikūṭaka-vihāra which was adorned with learned men.²⁰

5. Later Pālas

After Devapāla, the most energetic ruler of the Pāla dynasty was Mahīpāla I. He and his son Nayapāla tried, not without success, to maintain the progress of Buddhism. It suffered decline during the political troubles that followed, but in the reign of Rāmapāla (c. 1077-1120 A.D.) the religion became active again. But this was the last flickering of the lamp. From now onward Buddhism continued to decline till it was finally ousted from the land of its birth by the Turkish invaders towards the close of the twelfth century A.D.²¹

6. Other Dynasties of the Time

Some minor royal dynasties, ruling in Bengal during the Pāla period, were followers of Buddhism. The Tibetan sources inform us that *Tāntrika* Buddhism flourished in Vaṅgāla under the Chandras, and that king Gopīchandra of legendary fame belonged to this dynasty.²² The famous Buddhist scholar of Vikramapura, Atīśa Dīpaṅkara, is said to have been born in the royal house of that place. He was probably related to the Chandras.²³ The Sena kings, however, do not seem to have had any special liking for Buddhism, and Buddhism did not receive much patronage from them. Consequently Buddhist institutions soon disappeared and those which lingered on did not appear to have long survived the invasion of the Turks.

7. Buddhism Transformed

Buddhism under the Pālas appears to have been completely different from the Buddhism which Yuan Chwang describes in the middle of the 7th century A.D. The ancient schools, like *Sāmmatiya* etc., are no longer spoken of in Eastern India. The Mahāyāna had developed forms of mysticism which are known as *Vajrayāna* and *Tantrayāna*. The leaders of this new movement are all celebrated in Buddhist tradition as Siddhas, and their number is traditionally reckoned as eighty-four.²⁴

8. The Mahāvihāra

The possession of Magadha gave the Pāla Buddhist rulers the mastery over some of the greatest vihāras of India, viz. Nālandā, Odantapurī and Vikramaśilā. The last two

²⁰ R. C. Majumdar, *AIK*, p. 273.

²¹ S.R. Goyal, *A History of Indian Buddhism*, Meerut, 1987, Ch. 20.

²² P.C. Bagchi, in *HB*, I, p. 418.

²³ Ibid.

²⁴ S. R. Goyal, *op.cit.*, Ch. 13.

were founded by the Pālas themselves. The Nālandā *Mahāvihāra* was damaged by fire sometime before the eleventh regnal year of Mahīpāla I, but was repaired in that year. Far more damaging to it was, however, the rise of Vikramaśīlā which, about this time, surpassed Nālandā in fame and renown. Tāranātha even hints that the professorial board of Vikramaśīlā kept watch over the affairs of Nālandā, which amounts to a sort of control by the former over the latter.²⁵

The University of Somapurī, the site of which is represented by Paharpur in North Bengal, was in flourishing condition till the eleventh century. Atīśa Dīpaṅkara lived here when he translated into Tibetan in collaboration with some others, the *Madhyamakaratna-pradīpa* of Bhāvaviveka. About the middle of the eleventh century it was burnt down by the armies of Vaṅgāla (South-East Bengal). Sometimes later a monk named Vipulaśrīmitra undertook the renovation of the monastery, but it could not be restored to its former greatness.

Rāmapāla founded a new Mahā-vihāra called Jagaddala, which also came to occupy an important position in Bengal. Besides Vibhūti-chandra and Dānaśīla, the names of some other scholars, e.g. Mokṣākaragupta, the logician, Śubhākaragupta, Dharmākara, etc. are intimately associated with Jagaddala. The great Śākyaśrībhadra is also said to have resided here for some time.

9. Other Vihāras

Amongst other famous *vihāras* of the Pāla period may be mentioned the Traikūṭaka, Devikoṭa, Paṇḍita, Sannagara, Phullahari, Paṭṭikeraka, and Vikramapurī. The Traikūṭaka-vihāra was the place where Haribhadra composed his famous commentary on the *Abhisamayālaṅkāra* under the patronage of Dharmapāla. It was situated probably somewhere in West Bengal as there is mention of a Traikūṭaka Devālaya being unearthed in the Rāḍhā country. Devikoṭa was in North Bengal and the Paṇḍita-vihāra in Chittagong. Phullahari and its hermitage are frequently referred to as a place where several Buddhist Āchāryas lived and Sanskrit texts were translated into Tibetan in collaboration with Tibetan scholars. It was situated in Western Magaha probably somewhere near Monghyr. Sannagara in Eastern India is mentioned as an important seat of Buddhist learning and a Buddhist scholar named Vanaratna, who was responsible for a large number of Tibetan translations, hailed from that place. Vikramapurī was in Vikramapura in Dhaka and flourished mostly under the patronage of the Chandras and Senas.²⁶

²⁵ P. N. Bose, *Indian Teachers in Buddhist Universities*, Madras, 1923, p. 36; also see, N. N. Das Gupta, in *The Struggle for Empire*, eds. R.C. Majumdar and A. D. Pusalker, Bombay, 1957, p. 415.

²⁶ Bagchi, *op.cit.*, pp.417-18.

10. Indo-Tibetan Dialectics

One of the greatest phenomena of Pāla history is inter-exchange between India and Tibet (via Nepal) in terms of Buddhist studies and the development of a new variety of Buddhism. This fact has been assessed by a modern scholar in the following statement:

To all these mahā-vihāras or universities, richly endowed with royal grants, flocked learners from all quarters of India to receive instructions at the feet of the most profound savants of the day. Another feature that marked them, and which is historically very important, is that they were largely frequented by monks from Tibet, specially from the time of Mahīpāla I. This resulted in bringing Tibet closer to India than ever. While, usually on invitation from the Tibetan kings, the vihāras used to send forth from time to time pre-eminent scholars to the land of Snow with the mission of preaching the gospel of the Buddha or reforming the religion there, they also frequently supplied competent monks to that country for translating Buddhist works from Sanskrit into Tibetan. Thus, the nucleus of a Tibetan Buddhist literature began to take shape in Tibet. Gradually, the Tibetans, too, began to study Sanskrit under Indian monks both in Tibet and in India and took up the task which had hitherto been done by the Indian monks only. The influx of the Tibetan monks began to swell more and more as time went on, and the universities had, as a matter of course, to make commodious provisions for them to learn Sanskrit. The Buddhist *Paṇḍitas* of India, in their turn, found it alluring to master Tibetan, in order to permeate Tibet all the more with the doctrines of Buddhism by means of Tibetan translations of Sanskrit books, and the Indian universities, particularly those of Eastern India and Kashmir, became genial centres of the cultivation of Tibetan. The growth of the vast Tibetan Buddhist literature was thus due as much to the contributions of Indian scholars, as to those of the Tibetans themselves.²⁷

That literature forms now, for the most part, the only extant source of our information regarding the Indian Buddhist scholars and their works during the Pāla period.

11. Conclusion

This short discussion pinpoints the following facts: (1) The pāla kingdom of Bengal and Bihar remained a safe refuge of Buddhism at a time of its eclipse in other parts of India. (2) But Mahāyāna Buddhism underwent great transformation in Bengal during this period. (3) Buddhism spread to Nepal and Tibet in a changing form under Pāla patronage. (4) Buddhist study centre in Pāla territories played a historic role in these inter-cultural exchanges. And (5) Pāla Buddhism was a mild ideology and fostered religious toleration and cultural harmony.

²⁷ N.N. Das Gupta, op.cit., pp. 416-17.

THE MYTHIC REALITY IN R. K. NARAYAN'S NOVEL 'THE MAN-EATER OF MALGUDI'

Md. Mahmud Hasan Chowdhury*

Abstract: *The Man-Eater of Malgudi* by R. K. Narayan is one of the most appealing masterpieces of the postcolonial literature. Narayan being a South Indian, well versed in Indian myths fuses myths with natural events quite skilfully in *The Man-Eater of Malgudi*. His handling of myths adds a new dimension and gravity to the sub-continental narrative technique. Natural events and fictional elements are fused together to produce a greater harmony and higher reality which creeps into the realm of super consciousness. Reality itself is highly relative as different people view it in different ways. He views reality from mythical perspective suiting the culture of the Indian Sub-continent in the novel which sharply opposes what is known as proven reality or scientific approach to reality.

Introduction

Mythic-reality is a term which is composed of two different words "myth" and "reality". Myths generally mean some fictitious stories from ancient times which have been handed down to the people of a society through generations in the form of religious stories, folklores, traditions etc. In other words, it is the summation of wisdom of people gained from past events and rituals, given permanent form by the imagination of poets who could thus transmit themes and beliefs already in existence to posterity. Many myths or quasi-myths are primitive explanations of the natural order and cosmic forces. Through myths one comes to know the story of different supernatural beings and famous characters in literature which have become legendary by virtue of their extraordinary qualities in some respects. From his day to day association with these myths (for example, Greek myths, Indian myths etc.) through reading and audio-visual means, man seems to grow a shadowy affinity with them. They virtually become an inextricable part of his real life existence. The powerful and irremovable impact produced in organic sensibility appears as a greater truth in terms of time and space in his psychic being. As a matter of fact, mythic reality pertains to a kind of belief originating from myths that superimposes itself on the physical reality

* Senior Lecturer, Department of English, Asian University of Bangladesh, Dhaka.

and gradually grows from strength to strength in the innermost recesses of human heart. In reference to this concept, however, it is well to bear in mind Lord Raglan's definition of the use of the imagination, "The exercise of the imagination consists not in creating something out of nothing, but in the transmutation of matter already present in the mind."¹ Writers such as Shakespeare, Rabindranath Tagore, and S.T. Coleridge have deliberately created an illusion of reality in their own way in different literary works to uphold the illusive nature of art. R.K. Narayan too masterfully manipulates myths impressive to the Indian psyche to produce an artistic illusion in the minds of the readers that ultimately forms the basis of mythic reality in *The Man-Eater of Malgudi*. Bhasmasura in Narayan's masterpiece haunts the readers as a visible spirit in the form of H.Vasu and serves Narayan's purpose for the creation of mythic reality in it. Eventually mythic reality in the novel superimposes itself on the physical reality and strikes as a greater truth in the psychic being of the readers. While going through this novel the readers get profound insight into human nature and feel irresistibly attracted by the lure of the mythic reality as embodied in it.

The Purpose of this article is to evaluate mythic reality manifested in the novel. The subject matter of this article which addresses post-colonial writing is directly relevant to Bangladeshi culture and way of thinking in the sense that over a long period of time the imaginative Bangladeshi people enjoy reading, listening and believing religious myths. The people of Bangladesh are deeply superstitious by nature and hence they are used to nurturing mythical beliefs in the heart of their hearts. The Indo-Anglican novelist R. K. Narayan produces a great artistic effect on the readers through mythical presentation of human life from the Indian perspective. Mythic reality is not easily conceivable when it comes to normal way of thinking. It is rather deeply seated in the innermost recesses of the hearts of mankind in general and the people of Indian subcontinent in particular. It can be assumed that reality exists as long as human mind can imagine something. The elastic nature of man puts him in an endless state of perplexity to believe or disbelieve something. As a consequence man's spirit suffers from perpetual restlessness. He goes through an intricate maze to cement or establish a particular faith in his psyche. Besides, the prehistoric fear that engulfs his mind since the time immemorial not only creates an infinite and insurmountable puzzle in the tracks of his consciousness but also offers him a delicate artistic pleasure. The tendency to make queries which is basic to human nature distinguishes him from all other creatures. Man wants to be spiritually free from all that hangs heavily on him in this mysterious, alien universe. From here a finite being develops an intense desire to merge in the infinite. Amlan Dutt a

¹ Julia Wolfe Loomis, *Mythology* (New York: Morarch Press, 1965), p.147.

philosopher, an economist and an esteemed social scientist of India refers to this perennial human crisis in his words 'a tormented soul in quest of freedom'.²

Mythic Reality in the Novel

In proceeding to know about mythic reality one should be aware of the fact that the subject is an extremely controversial, complex one, highly charged with personal feeling, since it does indeed border on the realm of sociology and anthropology, sciences that deal more with preferential statistics than proven fact. The author has skilfully depicted a mythical Rakshasa, a superhuman and diabolic creature of infinite yogic, psychic and physical power in the person of H.Vasu, the protagonist, a malignant villain and an evil incarnate in the novel.

The novelist creates an illusion of reality by making use of Bhasmasura myth in *The Man-Eater of Malgudi* where H.Vasu embodies Bhasmasura, a mythical 'Puranic' Rakshasa, in human manifestation. The Rakshasa, Bhasmasura, was awarded a boon by Lord Siva. The boon bestowed upon the Asura the power of turning people to ashes with no more than a mere touch of his palm. He was called Ash-demon or Bhasmasura because of his terrific scorching power which was concentrated in his palm. The Rakshasa Bhasmasura became excessively swollen with ego and committed all sorts of evil, thinking himself indestructible. But while a rakshasa is conscious of his superhuman strength, he is ignorant about the fact that he carries within himself the seeds of self-destruction. According to Hinduism, the idea is—Evil vanquishes itself and paves the way for good things to survive in this universe following the cosmic law of nature engineered by the supreme power or the absolute Good. The intractable and skeptical Bhasmasura was so much audacious and reckless that he decided to test the validity of the boon on lord Siva himself. The lord fled with fear and approached lord Vishnu, the protector god and requested him to rescue him from destruction. Vishnu, the preserver of the world, was horrified to see the amount of atrocity and viciousness in Bhasmasura. He devised a plan to destroy the Rakshasa to put an end to his reign of terror. Accordingly, the god incarnated himself as a dancer of great beauty named Mohini and appeared before Bhasmasura to excite his passion.³ The Asura was instantly enchanted by the charm of Mohini and wanted to possess her. Mohini promised to yield to him only if he imitated all the gestures and movements of her own dancing. The demon completely forgot that he had conserved all power in his palm and imitated Mohini when she placed her palms on her head at one point in the dance. He perished in the process and was reduced to ashes by the scorching touch of his palm.

² Amlan Dutt, *সাম্যাবাদের সংকট ও অন্যান্য রচনা [samyabader songkot O anyanya rochona]* (Kolkata: 1990, p. 143.

³ For details please see, *Indian GodsAnd Goddesses* at:
<http://www.indiayogi.com/content/indgods/mohini.asp>

The embodiment of Bhasmasura by H.Vasu is a unique feature of *The Man-Eater of Malgudi*. The analogy lays the foundation of mythic atmosphere and adds a new dimension to the conventional narrative technique followed by the writers of the subcontinent. Narayan has deliberately used the tales from Puranas in many of his novels as K.R. Srinivasa Iyengar observes, "they have been the ground plank of Indian culture". Throughout the masterpiece there is a catalogue of Rakshasas such as Rabana, Mahisa and Daska. The reference to Radha and Krishna also figures prominently in the novel. Besides, there is an allusion to a sacred mythical elephant called Gajendra which was saved by god Vishnu from the clutches of a horrific crocodile. When Gajendra, the mythical elephant was in trouble, it looked heavenward seeking mercy from God. Vishnu, the protector god responded to the piteous gesture of the elephant mercifully and rescued it from being destroyed by the crocodile. Nataraj, the hero of the novel, too is heavily influenced by religious myths. When he is apprehensive that Vasu might shoot Kumar, the innocent temple elephant, he is reassured by the belief that god Krishna was really an incarnation of Vishnu and envisions his coming again to the rescue of Kumar as he had saved Gajendra, the mythical elephant from an inevitable destruction. When a religious procession is passing by the fountain and Kumar is within the shooting range of Vasu, Nataraj appeals to god Vishnu, the saviour, in his words, 'Oh, Vishnu! Save our elephant and save all the innocent men and women who are going to pull the chariot, you must come to our rescue now'.⁴

All these mythical allusions and references not only testify to the artistic brilliance of R. K. Narayan but also shape up a sensibility of mythic reality in the psychic being of the readers. They also lend credibility, plausibility and an indelible charm to the narrative by creating a sense of oneness or unity in diversity through the sheer narrative craft of R.K. Narayan who has deliberately used the Bhasmasura myth to establish a link between the present and the past. Things happened in the past, things are happening at present and things will happen in future. There seems to be a chain that binds the past, the present and the future in the same knot dictated by inevitable destiny. The Bhasmasura was a blood thirsty demon who had endless energy for destruction, so is H.Vasu (human Rakshasa) who has an extra ordinary capacity for evil in *The Man-Eater of Malgudi*.

The people of the Indian sub-continent are used to listening to many fictitious stories dealing with fairies, Rakshasas, ghosts, demons, monsters etc. one such story called Nil Kumar and Dhud Kumar (a popular story of *Thakur Mar Jhulee* by Sree Dakshina Ranjon Mitra Majumdar) has long been greatly appealing to them by virtue of its illusive power. Nil Kumar in the story is half human and half Rakshasa as he is born out of the union of a human king and a wandering Rakshasa who transforms

⁴ R.K. Narayan, *The Man-Eater of Malgudi* (Mysore: Indian Thought Publications, 2000), p. 139.

himself into an exquisitely good looking woman and stays as a queen with the king to cause massive destruction to the kingdom. These stories dealing with supernatural beings appeal to human heart with greater credibility with their spell of mythic illusion. Over a long period the people have a dim recollection of those stories which leave a sensational and grotesque effect on their subconscious mind.

In the epic *The Faerie Queene* Edmund Spenser, a famous English poet of 17th century manages to produce a sense of mythic reality through a terrific encounter between the legendary Red Cross Knight and monster Error, a mythical creature. In this apparently uneven encounter the knight comes out victorious much to the surprise of the readers. Though the monster is infinitely superior to the knight in respect of physical strength and mental energy, it ultimately gets defeated by the power of holiness. The readers get an extraordinary sense of relief when the Monster is killed by the knight in the uneven contest as if it were a flesh and blood fight taking place before their eyes in this material world. Edmund Spenser, masterfully creates an illusion of reality in the episode involving the legendary knight and the mythical monster Error in *The Faerie Queene*.⁵

S.T. Coleridge in his *Biographia Literaria* uses a phrase, 'willing suspension of disbelief'.⁶ Human nature itself is inexplicably mysterious. Human beings tend to plunge into an ocean of mythic reality with an inner urge for willing suspension of disbelief. More often they love to be carried away by fancy and imagination to such a degree that fiction sounds more powerful and credible than fact to them.

Shakespeare, the greatest playwright of English literature, also creates an illusion of reality in his tragic play *Macbeth* when Macbeth meets three witches on an open heath on his way back home from the battle field as a victor. The witches (evil force) produce a deliberate ambiguity in Macbeth through the speech 'Fair is foul, and foul is fair'.⁷ The dormant ambition and potential evil in Macbeth take a destructive turn. The devil in him designs a tissue of self-delusion for his final catastrophe and ultimate demise.

Likewise, Narayan depicts a mythic atmosphere in *The Man-Eater of Malgudi* where there is a continuous interplay of mythic illusion and physical reality. The mystic force of mythic reality immediately conjures up the spirits of the readers and gradually transport them to a world of unfathomable mystery. The witches in Shakespeare and Asuras in Narayan represent mythic reality from different perspectives which superimposes itself on the physical reality.

⁵ Edmund Spenser, Canto I, *The Faerie Queene*, The Norton Anthology of English Literature, Vol. I (New York: w.w. Norton and Company Inc, 1968), pp. 511-14.

⁶ S.T. Coleridge, Chapter XIV, *Biographia Literaria*, The Norton Anthology of English Literature, Vol. 2 (New York: w.w. Norton and Company Inc, 1968), p. 274.

⁷ William Shakespeare, Act One, Scene One, *Macbeth*, *Complete works of Shakespeare*, (New Delhi: Oxford and IBH Publishing Co.Pvt. Ltd., 1980).

'The Man-Eater' or the blood sucker of the title of the novel, an extremely vicious character H.Vasu perfectly embodies the Puranic Rakshasa, Bhasmasura in the course of the novel. He has all the attributes of Bhasmasura in human form. The action of the novel is set in a south Indian imaginary town of Malgudi. The bohemian, H. Vasu appears as a human Rakshasa to propagate the force of evil in an otherwise peaceful town of Malgudi.

The hero of the novel, Nataraj is intimidated overwhelmingly by the terrific appearance of H.Vasu who is six feet tall and broad shouldered. He intrudes into the Malgudian society all on a sudden and right from the very beginning he asserts his personality by behaving in an unusually authoritative manner with Nataraj, a simple, humble peace-loving man and owner of a busy running press in Malgudi. H.Vasu, a taxidermist by profession, illegally occupies the attic of Nataraj's pressroom. Then onwards he continues to exercise a horrible influence on Nataraj tirelessly till his death towards the end of the novel. All walls of resistance of Nataraj break down gradually as the novel progresses and he becomes as timid as lamb before H.Vasu.

Sastri, an orthodox – minded semi Sanskrit scholar and a helping hand to Nataraj in his press business in *The Man-Eater of Malgudi* points out striking resemblance between H.Vasu and Bhasmasura. While talking to Nataraj, Sastri says, "to deal with a rakshasa one must possess the marksmanship of a hunter, the wit of a pundit, and the guile of a harlot."⁸ Sastri provides a number of examples to support his observation. He quotes from the puranas such as the Ramayana in which the ten-headed demon king Ravana, with unusual yogic powers and boon for never ending life, nevertheless met with an end at the hands of Rama. Sastri then refers to Mahisa—an Asura with a boon of immortality and invincibility and an ability to create a demon in his own image with every drop of blood he shed—was at last annihilated by the goddess Durga who sucked the blood from his body. And finally he recounts the fable of Bhasmasura to identify H.Vasu with Rakshasa and makes the speech "Every Rakshasa gets swollen with his ego. He thinks he is invincible, beyond every law. But sooner or later something or other will destroy him."⁹ In *The Man-Eater of Malgudi* human Rakshasa H.Vasu thinks he is invincible, beyond every law in the similar way of a Rakshasa. He oversteps himself and finally perishes in the process.

Like Bhasmasura H.Vasu is thoroughly unscrupulous and swollen with ego. Unlike human beings he entirely lacks the virtue of temperance. He does all sorts of misdeeds relentlessly in the course of the novel. He ruthlessly hunts animals in the Mempi forest, teases and taunts gentlemen whomsoever he comes across, quarrels with Sen, the journalist without any reason, mocks the poet who is an extremely humble fellow, harasses Nataraj more often than not, plans to kill the sacred temple elephant Kumar in a fit of wanton impulsiveness. His capacity for evil knows no bounds. Like Bhasmasura he is also addicted to women to an extreme degree. As

⁸ R.K. Narayan, *The Man-Eater of Malgudi* (Mysore: Indian Thought Publications, 2000), p. 75.

⁹ Ibid.

Bhasmasura was enchanted by the beauty of the dancer Mohini, H.Vasu too is infatuated by Rongi, the prostitute and temple dancer in *The Man-Eater of Malgudi*. He is an anarchist who defies social norms and conventions with inexhaustible vigour and energy. He advocates the supremacy of free sex over marriage. Marriage to him is an impediment to man's free thinking and freedom of movement. He vehemently opposes marriage in his speech. "Only fools marry, and they deserve all the trouble they get. I really do not know why people marry at all. If you like a woman, have her by all means. You don't have to own a coffee estate because you like to have a cup of coffee now and then".¹⁰ Being a believer of indiscriminate and diverse sexuality he keeps company with various prostitutes frequently in the course of the novel in complete disregard for social etiquette. He considers himself far too superior in all respects in comparison to the people of Malgudi irrespective of their status and position in the society. Without any provocation, the arrogant and desperate Vasu threatens to cause havoc in the lives of the people of Malgudi.

In spite of his matchless power H.Vasu like the mythical Bhasmasura dies an unexpected and ordinary death towards the end of the novel. Sastri, the Sanskrit pundit in the novel stresses the parallel between H.Vasu and Bhasmasura hinting at the manner of Vasu's sudden and mystifying death. He dies in the way of Bhasmasura with a blow of his fist on his own head, and the novel concludes with the following words of Sastri, "Every demon appears in the world with a special boon of indestructibility. Yet the universe has survived all the rakshasas that were ever born. Every demon carries within him, unknown to himself, a tiny seed of self-destruction and goes up in thin air at the most unexpected moment. Otherwise what is to happen to humanity?"¹¹ Rongi, the temple dancer and prostitute happens to be alongside Bhasu on the eve of his death. She keeps fanning him with a hand fan until she gets tired and falls asleep. When the fanning ceases some mosquitoes immediately come and settle on Vasu's head. Being disturbed in sleep he gives them a terrific blow with his powerful fist in an effort to drive them away from his head and in the process he strikes himself dead. Vasu's death remains a mystery for quite sometime. Murder is suspected. Investigation goes on. Suspicion falls on the innocent Nataraj also. The whole atmosphere in the novel is mystified by Vasu's unusual death. The mystery is ultimately resolved by Sastri who has a comprehensive knowledge of the Puranic Rakshasas. Sastri associates H.Vasu (human Rakshasa) in *The Man-Eater of Malgudi* with the mythical Bhasmasura, the Puranic Rakshasa. Bhasmasura killed himself while imitating a particular gesture of Mohini (the mythical dancer) in dancing with her not knowing that the scorching touch of his palm would bring about his own destruction. Similarly, H.Vasu in *The Man-Eater of Malgudi* kills himself not knowing that the blow will cause his own death instead of killing the mosquitoes.

The novel is pervaded by the mythical beams which form the mythic structure of the novel and gradually prepare the readers to perceive a greater reality in terms of vastness and diversity. It is observed that there is an interplay of mythic illusion and

¹⁰ Ibid. p. 33.

¹¹ Ibid. p. 183.

physical reality all throughout the novel. While going through it the readers are enchanted by the mythic illusion so much that they can hardly distinguish between fact and fiction. Both fact and fiction seem to be the cemented components of a greater truth in Narayan's masterpiece *The Man-Eater of Malgudi*.

Conclusion

Rabindranath Tagore in his poem 'Simar majhe, asim, tumi' (from *Gitanjali*) speaks about a mystic bond between the cosmic beings and the divinity in his words, "Simar majhe, asim, tumi,/Bajao apan sur"¹² (the infinite God expresses in the finite intoxicated by the wayward symphony emanating from the ecstasy of creation). The force of the infinite creates curiosity in human mind about the vistas of by-gone times. In childhood when one reads the fictitious stories of the demons, giants, dragons, fairies, he tends to believe them. A kind of illusive pleasure runs through his mind and gradually begins to get settled in his thought process. Mythic reality draws a big note of interrogation in human psyche. Being motivated by a sense of mystery and curiosity, man tends to go beyond time and space. It is an endless process of acquiring the knowledge of the unknown and the unseen. Once the wheel of curiosity starts turning, it keeps on turning and turning endlessly. Man has an inexplicable and irresistible attraction for antiquity. A kind of inner force induces him to respond to the lure of the past. Herein lies the life-blood of mythic reality. While proceeding through the novel the mythical Bhaskarasura becomes a reality to the readers in the character of H. Vasu and this reality imperceptibly impinges upon their super consciousness.

¹² Rabindranath Tagore, গীতাঞ্জলি, রবীন্দ্র রচনাবলী, ২য় খণ্ড, [*Gitanjali, Rabindra Rachonaboli*, Vol. 2 (Dhaka: Jhinuk Pustika, 1973), p.914.

CHANGING PATTERN OF A TRADITIONAL FISHING COMMUNITY IN BANGLADESH

Md. Anwar Hussain*

Abstract: Fishing is one of the oldest of occupations in Bangladesh. Usually, the low-caste Hindus were the traditional fishermen and fishing is their *jati-pesha* (a hereditary occupation). Compared to other special communities, fishermen in rural Bangladesh bear the richest tradition of the community life. The uncertain and seasonality affected production process of fishing gives rise to a distinctive way of life among the fishermen. The traditional fishermen are supposed to be timid and subdued by nature, and are reluctant to change their age old cultural traditions. However, although slow and gradual, a process of change has been going on among these caste communities. The impact of economic, social and technological changes in the world has been tending to throw out of balance the traditional subsistence economy of the community and to impair its social and cultural integrity. The major concern of this paper is to identify changes in different spheres of a traditional Hindu fishing community in Bangladesh.

Introduction

The concept of a static and isolated community is considered to be a myth in the contemporary sociological and anthropological literature. The social system, however simple, is always in the process of change (Firth 1964, 81-82). When the primitive people adopt the modern means of livelihood and use modern inputs to produce for the market, they must think and act very differently from before. Community as a social system is constantly experiencing changes both in its formal and informal structure (Warren 1963: 143). The survival and stability of a traditional community depends primarily on its ability to adapt to changing ecological, social, economic and political circumstances. The changes take place through diffusion and by an increasing orientation of the traditional community towards the extra-community system. A community has to absorb changes and adapt its units in order to restore equilibrium. The present paper is based on empirical data¹ to identify the pattern of changes in different spheres of a traditional Hindu fishing community in Bangladesh.

* Dr. Md. Anwar Hussain, Associate Professor, Department of Sociology, National University, Gazipur.

¹ This paper is prepared on the basis of the data collected for author's Ph.D. dissertation entitled "The Fishermen of Bangladesh: A Case Study of a Fishing Community in the Padma-Meghna Basin. The fieldwork for the study was conducted in *Kaibartadham* (pseudonym) a fishing village in the alluvial plains of the river Meghna and was completed over a period of twelve months (May 1996 to April 1997 including a follow up visit in 1998), covering all the seasons. The data for the study were obtained through participant-observation that was supplemented by structured questionnaire (Hussain, 2002).

Ecology of the Community

The present study was limited to a fishermen community comprising of a cluster of traditional Hindu fisher households². The community had 209 households distributed among four different neighbourhoods or *paras*. We named it as *Kaibarttadham* (a pseudonym), primarily because the *kaibarttas*³ comprised about 82 percent of the households and about 83 percent of the population in the settlement. The inhabitants of the community had been pursuing their hereditary occupation and shared similar tradition, norms and values.

The study village *Kaibarttadham* is situated in Charmeasha *mouza*⁴, the alluvial plains of the eastern part of *sadar thana* of Chandpur district. The *thana* headquarter in Chandpur town is about three miles away from the village. The village as well as the *mouza* Charmeasha is an island like *char*-land around which Dakatia river, an offshoot of the Meghna, flows round the seasons. The houses of the village were built on raised land and were surrounded by low-lying cultivable fields that remained waterlogged for most part of the year. This gave the village a distinct physical entity. The total population of the village at the time of the study was 1067 persons of whom 574 (53.8 per cent) were male and 493 (46.2) female. The inhabitants of the village belong to three different Hindu sub-castes—the *Kaibarttas* (83%), the *Jhalos* (8%) and the *Namasudras* (9%). Each sub-caste had its own *jati-pesha*. *Kaibarttas* and *Jhalos* constituted about 91 percent of the total households—fishing as their *jati-pesha*.

The fishing community of *Kaibarttadham* had developed over a long period of time. It has a unique history of common cultural tradition, a sense of identity which separates the community from others in the larger society. Its inhabitants had a special way of life not only due to the particular ecological location but also similar caste-hierarchy, socio-cultural and occupational background. All three sub-castes in *Kaibarttadham* were closer to one another by customs and traditions. Besides, they shared the same *para* where they often played a complementary role to achieve each other's life goals. In the process of living together in an isolated geographical area, they had developed a common way of life, distinct from others.

All the people of the fishing village were low caste Hindus and were treated in low esteem not only by the higher caste Hindus but also by the Muslims. Because of their low status in the caste hierarchy, they had learnt to maintain a low profile and thus remained cut off from the larger society. There was no public institution other than a primary school in the village. The inhabitants had to come across the river to visit Union Council office or District town for getting services from the public institutions. But they did so in rare occasions.

² Household is the basic social unit which shares a common budget, and the members cook and eat together. Married sons who live in a separate dwelling, but share a common budget with their parents, and eat with them, are spoken as member of the same household (Potter and Potter, 1997).

³ The *Kaibarttas* were the earliest inhabitants of the village. The word *kaibartta* was derived from the Sanskrit words *ka* (water) and *vrit* (to engage), and therefore refer to occupations in or on water. The members of this sub-caste were known as *Das* in *Kaibarttadham*.

⁴ A *mouza* is a revenue village and/or the lowest revenue collection unit.

Since the Muslims dominated the larger society these low caste Hindu fishers suffered from an inferiority complex of powerlessness and felt that they had little scope to come out of their traditional way of life and compete in equal terms with the Muslim majority. "For ethnic minorities, however, boundaries are drawn from within the group itself and are consequently maintained from within" (Hutnik, 1991:23).

Changing Pattern of Community Life

Despite rapid changes in the larger society, the fishing community of *Kaibarttadham* had been struggling to maintain their own cultural heritage. Traditional habits and inertia, and the lack of institutional intervention of the larger society to initiate new opportunities for better living deterred the fishers to adopt new, more efficient behaviours. For that reason, there was no significant change occurred in the community life of the fishers of *Kaibarttadham*. However, some adjustments were made to material change within the community system. Whatever changes had occurred was slow and gradual, and was confined to the less crucial features of the community. The following discussion examines the changing pattern of the structural and functional components of the fisher's community of *Kaibarttadham*.

Geographical and ecological features of Kaibarttadham

Community is locality based human settlement. Its geographical and ecological conditions affect and control behavioural pattern, livelihood and standards of living of its inhabitants. The fishermen community, *Kaibarttadham*, was located in *Charmesha mouza*. The entire *mouza* had been a low-lying flood plain, encircled by the river *Dakatia*. There had been minor changes in its physical features and settlement pattern over the years. The low-lying area (*beel*) had been gradually shrinking due to silt-deposit. This had increased its cultivable area and had attracted attention of the landowners from the other side of the river.

In 1996, there were 14 Muslim households in *Charmesha mouza*. They were land-owning farmers. The low-lying *beel* and fields separated this new settlement from *Kaibarttadham*. The new settlers had close socio-cultural links with Muslims on the other side of the river. *Kaibarttadham* had remained a self-segregated settlement of the fishers over the last 125 years.

Communication network

Communication is an important factor that facilitates interaction. There had been no significant change in the settlement pattern of *Kaibarttadham*. It was divided into four *paras*. As the population increased, these *paras* expanded by building new homesteads and houses. Each *para* had remained a separate entity mainly due to the lack of internal road-links. An important change had occurred in its physical feature after the construction of a flood protection embankment in 1974. The embankment had remained incomplete and without repair but it had linked the *Purbapara* with the *Maidhyapara* of the village. The people of other two *paras* had to depend on boat to move within and outside communities.

Since 1990, *engine boats* had been ferrying passengers to and from *Kaibarttadham* to the district town. The introduction of engine boat had eased the

movement of the villagers and had improved transport of fishes and other products to the town. The fishermen, however, had their own boats. So, only a few were using the engine boats, especially on important occasions when they had to go to the district town. The relationship with the extra community system, thus, was very much purposive and could hardly affect the integration of the community.

Changes in population

Since there was no significant migration, the population of *Kaibarttadham* had increased through natural process. The total population of *Kaibarttadham* in 1996 had almost doubled since 1951. Similarly, the number of households had increased from 110 in 1951 to 209 in 1996. One of the village elders, Mr. Suresh (82), examined the problem in terms of the quantity of rice required to feed the population of the village during the annual *Mahotshab* (great festival). He said that in 1947, it took about four *maunds* of rice to feed the entire population of the village during the festival. But in 1996, the requirement of rice was to about nine *maunds*. The rate of population increase, however, seemed to be less than the national average (*Table-1.1*).

Table-1.1: Population Changes in Kaibarttadham (1951-1996)

Year	Household	Male	Female	Total		Average size of household
				Pop	% increase	
1951	110	n. a.	n. a.	540	--	4.91
1961	106	352	296	648	20	6.11
1974	147	446	435	881	36	5.99
1981	174	499	483	982	11	4.64
1996*	209	574	493	1067	09	5.11

*Census for the present study

Many of the elders felt that the population increase had exerted pressure on the available water bodies for their kind of traditional fishing and thus had contributed to the perpetuation of their economic hardship and distress.

Changes in family, homesteads and housing pattern

Kaibarttadham was densely populated and most of the houses in the village were small, single-roomed and thatched. The inhabitants were living in congested conditions in small rooms. From distance, the village appeared to be a temporary settlement due to its overcrowded thatched housing pattern.

There had been significant changes in family pattern in *Kaibarttadham*. The family pattern changed due to decline of the traditional joint family system. In 1996, about 65 percent were nuclear, 34 percent were extended and only one percent was joint family. The break up of joint family system led to the increase in the number of separate households.

The nuclear families, however, were hardly cut off from extended kinship networks. Helping behaviour among the differentiated nuclear units of an extended family often appeared to be vital for the old parents and distressed kin. This kind of behaviour included lending in cash or in kind, and giving support in a crisis.

Besides, despite the rise of nuclear family system the community had remained patriarchal. Women's status, measured in terms of literacy, participation in economic activities and decision-making had not changed at all. They had low status and autonomy in any aspects that affected their life, their well-being.

Changes in literacy level

The spread of education is one of the major means of socio-economic changes in a traditional community. Unlike most villages in Bangladesh, *Kaibarttadham* had a primary school since 1925. The school was expected to be a change agent in *Kaibarttadham*. The school registers, out of 188 school-aged (6-10 years of age) children, 164 (87%) were enrolled in the school in 1996. The increase in school enrolment was reflected in the overall improvement in the literacy rate of the village. The literacy rate went up from about 23 percent in 1961 to about 56 percent in 1996.

The literacy however was mainly limited to primary level -- not enough for getting a job in offices. Only eleven of the villagers had completed the 10th grade schooling and one got a college graduation degree. The college graduate was a teacher of a High School in the neighbouring village, on the other side of the river. Two of the high school graduates were employed as teachers in government primary schools. Another villager had a diploma in engineering and was employed in a government office at the district town. These educated service-holders, however, lived with their family members at *Kaibarttadham* and were daily commuters to their offices. The rest of the school graduates did not find job in the public institutions. But as we shall see later, an educational qualification was a means of mobility for some and incentive to look for alternative to their caste occupation. So, as some of the fishers viewed it, higher education was not *wastage* of time and money. But the problem was of extreme poverty that prevented most of the families to send their children for higher education.

Role of literacy in the socialization of young fisher children was very little. Most of the young children went to the local primary school where they were taught according to the national curricula of the primary education. Yet, family played the vital role in the socialization of young children. Children were socialized to adopt their *jati-pesha*.

Change in economic activities

Kaibarttadham was neither autonomous nor self-sufficient, its economy was monetary. There was little diversification in the village economy. For production purposes they mainly used simple tools and traditional crafts although in some cases some of them often used *current jaal* (monofilament smallest mesh size machine made nets). Money was the medium of exchange but the major part of the economic system was rooted in restraints and obligations of traditional kinship relations.

Most of the villagers were involved in fishing and other *localised* economic activities. Over the years, some minor changes had occurred in the income-earning activities and economic conditions.

The major income-earning activities in *Kaibarttadham* were fishing, fish trading, shop-keeping, cultivation and carpentry. A significant number of the villagers had

subsidiary sources of income. Taking up occupation other than fishing may be viewed as a major shift from the *jati-pesha*. Education and money were key to such mobility. But this could hardly promote vertical social mobility.

The *Table-1.2* shows that about 97 percent of the *Kaibartta* households in previous generation were primarily engaged in fishing -- about 61 percent were engaged in fishing only; about 36 percent pursued fishing supplemented by cultivation; about 2 percent were engaged in cultivation and only one percent was in fish-trading. In the present generation, the *Kaibartta* households were primarily engaged in fishing as well as in cultivation but the proportion of households dependent on fishing-cultivation had declined from 36 percent to 13 percent, reportedly due to the distress sale of cultivable land. It was observed that significantly higher proportion of the *Kaibarttas* of the new generation had taken up fish-trading and shop-keeping. They were working as *nikaris* (moving fish trader) and shopkeepers. We were told that two members of fisher's family were working in a shrimp-exporting firm, one person had a grocery shop in Chittagong City, and yet another was engaged in a furniture shop in the nearby town.

Table 1.2: Occupational Changes by Sub-Castes in Two Generations

Occupation	<i>Kaibartta</i> N=172		<i>Jhalo</i> N=18		<i>Namasudra</i> N=19		All N=209	
	Previous	Present	Previous	Present	Previous	Present	Previous	Present
Fishing only	61	64	100	100	05	15	59	63
Fishing and cultivation	36	13	-	-	-	-	30	10
Fish trading	01	10	-	-	-	-	0.5	09
Cultivation only	02	02	-	-	55	20	07	03
Cultivation and carpentry	-	-	-	-	25	-	02	-
Carpentry only	-	01	-	-	10	55	01	06
Village Quack	-	-	-	-	05	-	0.5	-
Shop-keeping	-	05	-	-	-	05	-	05
Service	-	03	-	-	-	05	-	03
Tailor	-	01	-	-	-	-	-	**
Others	-	01	-	-	-	-	-	01
Total:	100	100	100	100	100	100	100	100

Shop-keeping was not their caste occupation, and it was very recent among the inhabitants of *Kaibarttadham*. At the time of our field investigation there were in all nine shops in the village. The fishers preferred the local shopkeepers to buy on credit their daily consumption goods because of the uncertainties of the catch and therefore the income. This also helped in keeping a substantial portion of the cash rolling within the members of the community. After all, the community people had little options to attract outside resources. Thus, the village shops minimised a substantial portion of interactions with markets outside the village.

Besides, some educated members of the new generation were engaged in non-traditional occupations like teaching, jobs in government office and in private firms and tailoring. Some of the villagers who could attain education at least up to the 10th grade level could find these jobs. Thus, higher education meant some sort of occupational mobility and/or shift in occupation. This means that those who had ability and willingness could shift from the traditional fishing to fish-trading or shop-keeping or other jobs.

Illustration: 1 #

Change in attitude towards keeping on *jati-pesha*

Sree Krishna (40) a grocery shopkeeper came of a fisherman family. His grandfather and father were traditional fishermen. His father owned a small fishing boat, nets of different types, and about 0.70 acre of cultivable land. His father was partially paralysed for several years. The family had to sell 0.40 acre of land for the treatment of his father and for meeting the family expenses during his father's illness.

He was high school graduate. His father died in 1974 while he was a college student. After the death of his father, Sree Krishna had to discontinue his education and take up the responsibility of the family as the elder male member of the family. But he was not socialised to carry on fishing, which seemed to him a laborious work. But he could not find a job. In 1979, he got married and started a grocery shop in one part of his dwelling house. He convinced the *panchayat* (village council) about the usefulness of a grocery shop within the community. He started the shop that was attached to his house. He had an initial capital of Tk. 10,000 that he received as dowry from his father-in-law. He purchased goods from the outside markets and sold them to the community members. However, his brother Sirup who often accompanied his father in fishing carried on his paternal occupation with the boat and nets of his family. Sree Krishna was doing well and was selected a member to the *panchayat*.

The *Namasudras* of the earlier generation used to rely mainly on cultivation for survival but the new generation had shifted from cultivation to carpentry. It might be because some of them had sold out cultivable land to cope with the increasing economic pressure. About 55 percent of the *Namasudras* of the previous generation were engaged in cultivation. This percentage had declined. About 55 percent of the new generation *Namasudras* were engaged in carpentry as against 10 percent of their previous generation. Moreover, about 15 percent of them were engaged in fishing as against about 5 percent of their ancestors. One *Namasudra* had a grocery shop and another was a teacher in the local primary school.

There was no change in the occupational pattern of the *Jhalos* of *Kaibarttadham*. All of them had kept on fishing, as their ancestors did.

Use of household utilities

The changing pattern of village life may be viewed in terms of the use of *modern* amenities. Traditionally, the villagers were used to live a simple life in accordance with their traditions. But they were not reluctant to use modern items of household utilities and clothes within their economic means. A significant of them had been using trousers and shirts instead of the traditional *dhuti* (linen), especially at the time of visiting urban centres. Many of them wore watches instead of depending on the position of the shadow or of the moon and stars in the sky. Widespread use of radios

and cassette players provided them the opportunity to have entertainment as well as knowledge about the larger world. One shopkeeper in the village had a television set that had introduced the fishers to the modern way of life. In addition to simple clay-made pottery, many of them had utensils made of silver, stainless steel, melamine and china clay. Furniture of modern design was also found in a number of households in the village. But there were no significant changes in the use of fishing equipment and accessories. By and large, the use of modern amenities depended on the economic ability of the households and was used especially in festivals and in ceremonial occasions. However, 'shedding of cultural characteristics (e.g. assimilating the use of modern clothing, modern items of personal and household utilities etc.) does not touch the core of one's ethnic minority identity which is intrinsic and unalterable. It is exhibited in the psychological characteristics that group members share in common, a like mindedness and a common group consciousness' (Kallen, 1925, p.114).

Health, sanitation and family planning

Physical isolation and widespread extreme poverty had made them fatalist. They tried to find security in their traditional way of life, norms and beliefs.

There was no significant change in their age-old practice related to health and sanitation practices. Most of the people used open places or bushes near their homesteads to relieve themselves. Most of the villagers defecated even in places where from they usually collected water for cooking. But changes were in process. Four of the households had installed sanitary latrines and these households were relatively well-off. Several of the respondents indicated their poverty or lack of space for not installing latrines. But most of them appeared to have inadequate knowledge about sanitation.

There were six private tube-wells in four of the neighbourhoods of the village. These tube-wells were maintained by collecting subscriptions from the users. So, if any one of the tube-wells went out of order, it remained so till subscriptions could be raised from the users. During this period, the users had to collect water from other tube wells or from ponds and river. There was one public tube-well in front of the school.

Many of the villagers had been suffering from dysentery, diarrhoea and other water-borne diseases. Besides, a significant number of the villagers suffered from other diseases like rheumatic pain, paralysis, gastric, jaundice, etc. They accustomed to live with these ailments which were viewed as an integral part of their traditional occupation -- working at night in the water bodies.

There was no modern medical facility in this relatively inaccessible community. The villagers usually depended on village quacks and traditional *kabiraj* (practitioner of indigenous cure) to treat the ailments. Only on exceptional cases or if the patient's life was in danger, they would go to the town for treatment in government hospital or to consult physicians. But often that might happen too late for the patient. According to our observation, there had been no significant change in attitude of the fishers in consulting qualified doctors. If the consulting village *kabiraj* felt it necessary, he not only advised the patient but also accompanied him to the hospital or clinic at the district town.

The Family Welfare Assistant (FWA) assigned to the village was a Hindu lady of 38 years of age. She lived in Chandpur town and visited the village once or twice in a month. She reported that due to bad communication, it was difficult for her to make

frequent visits to the village. She said that the women of *Kaibarttadham* were very co-operative. The women also did not face any restriction from men in adopting of birth control measures. In spite of their own reluctance to adopt birth control measures for themselves, the men also had a positive opinion about using contraception by their women. Despite the apparent favourable condition, the adoption rate was low -- of 170 fertile married women, only 34 (20%) were using contraceptives. Most of the users preferred oral pills. A significant of them did not want any more children but would not accept the permanent method of ligation.

The FWA also provided advice about modern health care practices, especially maternal and child health care. She took the initiative to hold an immunisation camp at *Kaibarttadham* and could immunise 102 infants in 1997. Thus the role of FWA may be viewed as an important *change-agent* to the tradition bound villagers of *Kaibarttadham*. The acceptance of immunisation obviously is indication to changes in traditional beliefs related to health care.

Social and Cultural Change

The fishermen village *Kaibarttadham* was a homogeneous caste community, relatively isolated, surrounded by Muslim villages. Its inhabitants belonged to three different Hindu sub-castes -- the *Kaibartta*, the *Jhalo* and the *Namasudra*. These sub-castes originated from the lowest caste of *Sudra*. The caste ranking, however, did not appear to have much effect on their every day lives.

Beyond caste differentiation, possession of wealth became the basis of social stratification in the community. Wealth was unequally distributed between the upper and lower classes. However, kinship ties and sense of obligations helped bridge the gap between the rich and the poor on formal and informal occasions.

The relationship of the inhabitants with the people of neighbouring areas had changed due to several major events during the last five decades. These changes were the partition of India in 1947, the abolition of the *zamindari* system in 1950, the independence of Bangladesh in 1971 and the entrance of a large number of the Muslims in the occupation of fishing. Despite these changes, the people of *Kaibarttadham* were able to retain their traditional social life and separate entity and at the same time, they had maintained a harmonious relationship with the people of the neighbouring villages on the other side of the river. They caught fishes in the rivers and *beels* and sold to them in the nearby markets or villages.

The fishers had been using the fishing implements and techniques of their ancestors. They remained tradition bound, relied on country boats, home-made nets and other gears of traditional nature for fishing activities. They did not use motorised boats and had limited their voyages to the nearby big rivers and *beels*.

There had been no significant change in the selection process of bride and the rituals relating to the marriage ceremony among the fishers of *Kaibarttadham*. The guardians played the decisive role in selecting the bride or bridegroom. Usually, the selection was made from among the same caste living within or outside the village. This was an ancestral tradition and there were rare exceptions. Although all three sub-castes were of similar caste hierarchy, the marriage relationships between the sub-castes were not acceptable in the community. Even then, there had been two recent incidences of marriage between two *Namasudra* boys and two *Kaibartta* girls.

We found major changes in the practice of organising marriage ceremonies. We were told that due to economic pressures, elaborate and lavish feasts and related rituals were in decline. The *pawn* system had been replaced by the dowry system. Till

the mid-1950s, a man had to marry a girl by giving a sum of money as *pawn* (bride-price) to the guardians of the bride. The amount of money and the ornaments that were required for a marriage were settled by the guardians of both the parties prior to the fixation of date of the marriage.

The system of dowry had become an indispensable part of a marriage. The guardians of a marriageable girl were in difficult situation. They had to arrange money for dowry as well as other expenses for a simple or elaborate marriage ceremony.

The selection of a bride depended not on the social and economic status of her family but on its ability to pay the dowry. The amount of dowry had become unbearable for many of them. Many of the fishers had to sell out their land and other assets for paying a dowry, and ultimately find themselves in economic distress and debt. Some of girls had to remain unmarried till their guardians could arrange dowry. The system of dowry had become a social menace for the fishers of *Kaibarttadham*.

Illustration: 2

Dowry as a social menace

Nabaganga (82), the oldest women in the village, told us that at the time of her marriage her husband had paid Tk.51 as *pawn*, including three sets of gold ornaments. But two of her grand daughters had been growing older without marriage because their father could not arrange the required dowry for them.

The villagers had discontinued some of the traditional social ceremonies and festivals. Some of the rituals relating to birth and death such as *aschaucha-anta* (a purification bath) after thirteen days of delivery of a child, *annyaprashanna* (rice eating ceremony of a child), and *sradhya* (rites ending the mourning), were no longer lavishly observed. They however did not totally ignore the religious rituals and the traditional ceremonies even in their economic hardship. Many of the poor fishers reported that due to lack of financial means, they were forced to observe these ceremonies within the household only with a limited participation of a few close relatives. Even when their catch was small and/or they were in financial constraints, they continued to contribute their share (as was decided by the *panchayat*) to organise the *puja* festival.

We also found a significant change in the tradition of community entertainment. In earlier days, the fishers of *Kaibarttadham* used to organise drama, *jatra* (folk drama), *palagaan* (narrative opera), *kirtan*, (hymn-singing) etc. for community amusement, especially during the annual *Mahotshab* which, was followed by a *Chaitra Sankranti Mela* (fair on the last day of the Bengali month of *Chaitra*). But these traditional amusements in the community had gradually disappeared due to economic pressure and the intrusion of the modern means of amusement and recreation. The villagers enjoyed modern songs through radio, cassette player and television. Occasionally, some of them went to movies in town. We found that 14 of the households had transistor radios, three of the households had cassette players and one person in the village had a television set in his resident-cum-grocery shop. None of the villagers subscribed to a newspaper. But the educated persons would read newspapers as and when they could. Outside influences had been penetrating the village life through the radio and television. The access to the modern mass media was limited but it had helped bring about pressures for changes in their traditional outlook and way of life.

The villagers who visited the district town were not totally ignorant of what were happening in the larger society. The boys and girls who had to go outside the village for high school or college education, were used to wear "modern" dresses. This was true for educated villagers. Besides, some of the households used modern utensils and other household accessories. But the villagers who had been gradually getting habituated to using modern cultural elements were very few in number and tried to limit the practice only at the time of dealing with the outsiders.

The inhabitants of *Kaibarttadham* had a low level of interaction with the outsiders due to poor communication, caste restrictions, lack of time (due to their preoccupation with fishing) and the negative and passive attitude of the community as a whole towards the larger society. Such social isolation helped reinforce the traditional arrangements of the community to regulate and control its social life. As a result, the process of social and cultural change was slow, often stagnating.

Thus, we found both the old and the new elements of culture in *Kaibarttadham*. The tendency was however towards conservatism – desperate efforts to cling to the past tradition and way of life.

Changes in social control

There had been no significant change in the social life of the community. The village *panchayat* had been playing the dominant role in controlling and regulating the social life of the community. Due to their feeling of inferiority and isolation, they hardly went out side the village for the arbitration of disputes. The cases where outsiders were involved were very few and rare. The effectiveness of the village and the *para panchayats* to regulate and control had been sustained because of the relative homogeneity of the caste and the community tradition characterised by the absence of factional politics in village life.

In fact, there had been no clear cleavages among the village people that could lead to sub-group conflicts. The villagers had informal groups primarily among the kin members, especially in carrying out fishing activities. Thus, fishing in groups strengthened the solidarity of villagers, homogeneity in religious belief, sharing of a century-old common heritage and the perpetuation of the traditional way of life. The *panchayat* system had no significant change because of the failure of the national and local institutions to act as change agents.

Political participation

The local body Union *Parishad* (U P) was on the other side of the river and was dominated by the Muslims. The villagers felt that since there was no member from the village to the U P, they were deprived of the services and assistance of the UP. They regularly paid the local tax but had confidence in the U P.

There was a strong *minority complex* among the villagers. According to the informed villagers, the independence of Bangladesh gave them an opportunity to work with the Muslim majority. But the successive governments since 1975 had deliberately undermined the secular attitude of the government (an achievement of the liberation war of 1971). This, according to most respondents, led to a decline in trust upon the government as well as in the Muslim majority. The Hindu fishers of *Kaibarttadham* tried to find security within their own community and in their traditional occupation for livelihood.

In general, the timidity and submissive character of the fishers was so widespread that they often did not dare get into conflict even for their right causes.

This was reflected in the changing pattern of participation of the people of *Kaibarttadham* in the local and national politics. Although the fishers of *Kaibarttadham* had been the voters, their participation in the local and national elections was reportedly very limited before the independence. After the independence, they participated in the local election of Union *Parishad* (UP) in 1973 and could elect a member from *Kaibarttadham*. The participation in the local election paved the way to the development of the village life by the institutional intervention. Mr. S. Ranjan (52), the former member of the UP said that his presence in the Union *Parishad* meetings ensured the proper share of the relief and rehabilitation supports for the people of *Kaibarttadham*. He also could press, through Union *Parishad* for the flood embankment that was constructed in 1974. But after the change in national political scenario in 1975, they were reportedly prevented from casting their votes and were forced out of the election centre by the Muslims. Consequently, they lost interest in the election process. The villagers complained that there were no efforts by the government to develop the confidence of this minority group towards the government or to encourage it come out of their relative isolation and participate in the local election⁵.

Conclusion

Kaibarttadham was thus a traditional occupational community, and it had not changed much by the influence of the modern way of life. Although it was part of broader society, its major cultural components, way of life, values, norms and social roles were distinctive enough to separate it from others. Loyalty to village, family, kinship, and caste; homogeneity of occupation and cultural heritage provided the lifeblood of the survival of these Hindu fishermen of *Kaibarttadham* as a distinct community. Despite overwhelming and disruptive pressures and attractions from within and outside its key features remained unchanged. They had a tendency to defend their value system such as religion, customs, mores, and folkways against the intervention of modern material culture. Traditional habits and inertia deterred the fishers to adopt new, more efficient behaviours. However, some adjustments were made so that the community system becomes more effective in generating and distributing resources and enhancing its survival. But, the changes that happened due to these adjustment practices were slow and gradual, and were confined to the less crucial features of the community.

⁵ The people of *Kaibarttadham* however felt encouraged to participate in the local elections after a secular political party formed government after the parliament election of 12th June 1996. We found that Mr. S. Ranjan had again contested the UP election and was elected a member of the UP in 1998. In this election, the government had arranged a voting centre for them in the primary school of *Kaibarttadham*. This had encouraged them to participate in the UP election without hesitation. During our follow-up visit to the village in November 1998, we observed that the internal roads linking different *paras* of *Kaibarttadham* were under construction at the initiative of the UP. Some of the village leaders suggested that if the government could create favourable condition and develop the confidence of the minorities, they would more actively participate in political processes and would give up inferiority complexes to deal with the outsiders.

SOCIOECONOMIC AND DEMOGRAPHIC DETERMINANTS OF FERTILITY OF THE CHAKMA TRIBE IN THE SOUTHERN PART OF BANGLADESH: A MICRO LEVEL ANALYSIS

S. M. Mostafa Kamal*

Abstract: This paper attempts to examine the determinants of fertility of the tribal women called the Chakma, inhabited in the southern part of Bangladesh. In analyzing the determinants of fertility we applied Multiple Classification Analysis (MCA). The mean fertility of the Chakma tribe is found to be 2.24 children per currently married woman. The mean fertility of the study women is lower by 0.76 births per woman as compared to the mainstream population in Bangladesh. The MCA results suggest that the fertility of the study tribe significantly varies with the age at first marriage of women, education of couples, working status of women, current residence, current use status of contraceptive method and child mortality.

Introduction

The tribal or indigenous people are somewhat different in terms of culture, beliefs and socioeconomic status from mainstream society. In the patriarchal or male-dominated society like the tribal communities of the Chittagong Hill Tracts (CHT), the women are always treated as a weaker subjugated than male because they have no hereditary rights on the wealth of family. In spite of this, the tribal women typically participate in all the field works along with males. Although women put in equal labour to men in the production process, their labour is not as fully recognized as that of men. However, in such a moderate society, the tribal women enjoy relatively more freedom and mobility than Bengali women. Nevertheless, the status of tribal women is quite low in Bangladesh, even within the context of mainstream society; compared with men, women have limited access to education, health care and employment opportunities. Although the ethnic women of the CHT are the ideal in work for their traditional skills, qualities and responsibilities but their participation in formal sectors are invisible. This is because of their lack of higher education. The access to education of the tribal girls mostly depends on their family income. Where income is restricted, the boys get preference over the girl (Guhathakurta, 2000). They are visible in the informal sectors in CHT such as, agriculture, jungle work, weaving, sales centres, beauty parlours etc. Although the hill indigenous women make equal or even

* Dr. S. M. Mostafa Kamal, Assistant Professor, Department of Mathematics, Islamic University, Kushtia.

more contribution in building the economy and society, they are not the ones who take decisions in household matters and other important social affairs. In many instances, women cannot even take decisions regarding their health and marriage (Gain, 2000). It is also argued that, while *adivasi* women earn a reasonable income, it is in most circumstances considered a family wage. Often, if not always, internal gender hierarchies create a disjunction between women's contributions, their decision-making power over the income, and their nutrition and well-being (Bleie, 2005).

Although it is complex in measuring the female autonomy and women's status but education, employment, decision making authority and physical mobility are considered as major indices of those. In such measures of women's status, the tribal women are lagging behind with mainstream women except physical mobility. The tribal or indigenous women exercise larger autonomy in terms of physical autonomy than that of the mainstream women in Bangladesh. It is argued that, women who live in communities with greater female autonomy are more likely to practise contraception and less likely to want additional children than those in more restrictive communities (Mahler, 1996). The rise in the educational level of women, their work outside the home and development of extra-familial activities lead women to prefer a limited number of children and at the same time create the possibility for women to have greater say in fertility preference and the timing of pregnancy. These are some of the factors which determine the status of women to a large extent and which in turn affect their fertility behaviour (Banu, 1997).

Although human fertility is a complex phenomenon, it is influenced by numerous socioeconomic, cultural and behavioural factors. A large number of studies have been conducted to determine the factors that influence the fertility for the mainstream women but attention has not yet given to identify the dynamics of tribal fertility in Bangladesh. So far known, secondary sources are still rare on tribal demography and particularly on tribal fertility. From this point of view, an attempt has been made in this study to identify the socioeconomic factors that affect fertility situation of the Chakma tribe, the largest ethnic community of the Rangamati Hill district under the CHT located in the Southern part of Bangladesh. The objectives of the study are to identify the factors and to measure to what extent the factors influence the fertility among the Chakma community in Bangladesh.

Research Settings

The present study focuses on the determinants of fertility of the Chakma tribe of Rangamati Hill District. Rangamati was once a subdivision of CHT and was upgraded to a district in 1983. It is bounded on the north by Tripura and on the east by Mizoram state of India, on the south by Bandarban and on the west by Khagrachari Hill District of Bangladesh. It lies between $22^{\circ}27'$ and $23^{\circ}44'$ north latitudes and between $91^{\circ}56'$ and $92^{\circ}33'$ east longitude. The district consists of 10 upazillas, 48 unions, 1347 villages and 2 pourashavas. With the objective to ensure the overall socioeconomic development of the backward people of this district, Rangamati Hill District Council (RHDC) was created in 1989. The term *Rangamati*, it is said, has been originated from the reddish soil of land of which *Ranga* means red and *Mati* means soil (RHDC, 2001). The total area of this district is 6116.13 square km. of which 53.54 sq. km. is riverine and 4824.63 sq. km. is under forest. According to RHDC, the tribal population in the district was 288,077 which constituted 55% of the total population

(RHDC, 2005). The density of population is 83 per sq. km. and the overall literacy rate for seven years and above population is 43.60%. The literacy rate among the tribal population for seven years and above is 34.18%, male literacy is 42.23% and female literacy is only 25.57% (BBS, 2005). On the other hand, according to 2001 population census, the overall literacy rate of the country for seven years and above population is 42.5% and male literacy is 49.60% and female literacy is 40.8% (BBS, 2003). In 2001, the total fertility rate (TFR) in the district was 3.7 (RHDC, 2001) and in 2005 the contraceptive prevalence rate (CPR) was 63% (RHDC, 2005).

Tribal people who are living here comprises of seven tribes: the Chakma, Marma, Tanchangya, Tripura, Pankhu, Lushai and Kiang of which the Chakma constitutes 72% of the total tribes in this district. The above statistics reveal that the tribal people of the Rangamati are backward in terms of education than the mainstream population of the district as well as of the country. Most of the people of Rangamati Hill District are engaged in agriculture. The overwhelming majority of the tribal people practise traditionally called *jhum* or shifting cultivation and the rest are engaged in business, fishing, poultry farm, farming and other activities related with timber collection, transportation and processing. A small number of tribal people are engaged in government and non-government services. Since the historical peace accord signed in 2nd December, 1997, the Rangamati including the CHT have been the focal point of development of Bangladesh Government and donor agencies. Apart from the Government of Bangladesh, a remarkable number of donor agencies and NGOs are working here for ensuring the development of socioeconomic status of the particular backward segment of the population of this area. Special attention has been given for significant improvement of health status, family planning services, mother and child care facilities etc for the tribal people of this area. Thus, there need accumulation of information in understanding present situation before implementation of any development activity or provision of services. Since there is scarcity of the literature on fertility situation of the tribal women; the present paper is an effort to fill in this gap. From the research interest, the study deals with the Chakma tribe of Rangamati Hill District. The results of the study may help in understanding the factors that affect the fertility situation of the tribal community in this area.

Among the tribes, the Chakma is not only the largest ethnic community in the CHT but also in Bangladesh. According to the 1991 Population Census, the Chakma alone constituted 21% of the total tribal and indigenous population of Bangladesh. The Chakma, like other tribes in the CHT, is a patriarchal tribal community in Bangladesh. Although there is no such studies to compare the socioeconomic status among the tribes and mainstream population, but the observations suggests that the Chakma are advanced with respect to any index of socioeconomic status among the tribes. In the public domain, the Chakma women enjoy relatively more freedom and mobility than Bengali women (Guhathakurta, 2000).

Research Methodology

Sources of Data

To meet the objectives of the study, data have been gathered through a pre-designed survey questionnaire entitled "Socioeconomic and Demographic Survey of the Indigenous/Tribal People of Rangamati Hill District, Bangladesh (SEDSIP) -2006" during the period January-February, 2006. The survey covered nine villages of three unions from three upazillas with multistage random sampling technique. The

information was collected by a group of well trained investigators consisting of one male and two female members who belong to the Chakma community. The female investigators were HSC passed and the male was a university graduate. The researcher himself supervised the survey.

The reference period for the present study is 'January 01, 2005 to December 31, 2005'. Before the collection of data all the households of the Chakma tribes of the selected villages were listed and 280 households were selected. Finally data were collected from the 277 selected households. The investigators could not gather data from three households due to absence of the respondents despite of repeated visits. Thus it was decided to hold the present study with 277 households. Among these households 272 currently married women aged 15-49 were found. Finally, 194 women from rural and 78 women from urban areas were successfully interviewed and their detailed information on fertility, contraception, age at marriage, number of times married, child mortality and other socioeconomic and demographic information have been recorded.

Methodology

In order to assess the effects of the selected socioeconomic factors on fertility, firstly an analysis of covariance was carried out on dependent variable. Following the covariance analysis the well known Multiple Classification Analysis (MCA) technique was applied to the data in order to investigate the effects of various background factors on fertility. In the analysis the "fertility" – total number of children ever born to per currently married woman has been assumed as the dependent variable. The MCA technique, which is a special case of multiple regression with dummy variables requires one dependent variable and two or more independent variables. The dependent variable may be either continuous or categorical but all the independent variables must be in categorical form. MCA can equally handle the nominal and ordinal variables and can also deal with linear and non-linear relationships of predictor variables with dependent variables. The advantage of this special statistical technique is that, it provides a grand mean of the dependent variable as its constant term and a set of category means for each factor as deviations from the grand mean as the main effects. Expressing in deviation form, the category means reflect the magnitude of the effect of each category of a factor.

In statistical terms, the MCA model specifies that a coefficient be assigned to each category of each predictor, and that each individual's score on the dependent variable be treated as the sum of the coefficients assigned to categories characterizing that individual, plus the average for all cases, plus an error term. Mathematically, the model can be expressed by the following way:

$$Y_{ij\dots n} = \bar{y} + a_i + b_j + \dots + e_{ij\dots n}$$

where,

$Y_{ij\dots n}$ = The score on the dependent variable of individual n who falls into i -th category of predictor A , j -th category of predictor B , etc.

\bar{y} = Grand mean of the dependent variable.

a_i = The effect of the membership in the i -th category of predictor A , i.e., difference between grand mean \bar{y} and the mean of the i -th category of predictor A .

b_j = The effect of the membership in the j -th category of predictor B , i.e., difference between grand mean Y and the mean of the j -th category of predictor B .

$e_{ij...n}$ = Error term.

The coefficients which are estimated by solving the normal equation systems are called the adjusted or net effect of the predictors. These effects measure those of the predictor alone after taking into account the effects of all other predictors. If there is no inter-correlation among the predictors, the adjusted and unadjusted effects of the predictors will be the same. The unadjusted coefficient eta (η) is a common correlation ratio which explains how well the predictor variable explains the variation in dependent variables and is usually estimated by solving the normal equations with only one predictor. This unadjusted coefficient indicates the proportion of variance explained by a single predictor alone. Similarly, the beta (β) coefficient, which is viewed as standardized partial regression coefficient indicates the proportion of variation explained by a predictor variable taking into account the proportion explained by the other predictor variables. Both eta (η) and beta (β) coefficients are often regarded as summary statistics indicating the relative importance of each predictor.

In order to carry out the hierarchical analysis of covariance and MCA analysis, Statistical Package for Social Sciences (SPSS) version 11.5 was used. In determining the effect of the factors that influence fertility, primarily a set of nine variables were included in the MCA model. The variables, namely 'occupation of husband' and 'type of family' were found to be insignificant and hence those were excluded from the final model. In the MCA model, covariates were introduced first followed by the predictors. A brief description of the covariates and predictors are given below:

Depended variable

Number of children ever born : 0, 1, 2, 3, ...etc.

Explanatory variables

- | | | |
|--|---|---------------------------------|
| 1. Age at first marriage (in years) | : | <17, 17-18, 19-20, 21+. |
| 2. Education level of wife | : | Illiterate, I-V, VI-X and SSC+. |
| 3. Current residence | : | Rural and urban. |
| 4. Experience of child mortality | : | :None and one or more. |
| 5. Current status of contraceptive use | : | No and yes. |
| 6. Working status of women employed and work for wage. | : | Non-working (housewife), self |
| 7. Education level of husband | : | Illiterate, I-V, VI-X and SSC+. |

Covariates

1. Current age of respondents (in years).
2. Duration of marriage (in years).

The rationale for taking the current age and marital duration of the respondents as covariates with the predictors is that, these would help in understanding the effect

of the background factors incompatible to fertility after being adjusted by the covariates.

Results

Table 1 represents the fertility (mean number of children ever born to per currently married woman) of the Chakma tribe as recorded in the field survey, namely SEDSIP-2006 along with that of the mainstream women according to the nationally representative Bangladesh Demographic and Health Surveys (BDHS). The table shows that for each age group, the mean fertility of the Chakma women is quite less than that of the national level, indicates lower fertility of the Chakma tribe of Rangamati Hill District compared to the mainstream women of Bangladesh. The two surveys: SEDSIP-2006 and 2004 BDHS suggest that, a Chakma woman has lower fertility by 0.76 births as compared to a mainstream woman. The large variation of fertility between the study women and mainstream women is observed for the age group 35-39 by 1.36 births per woman for the same surveys. Besides, the table suggests that the fertility of the Bangladeshi women is in a declining trend for all the age groups except for 15-19. The lower fertility of the Chakma women may be partly attributed to their higher age at marriage and higher use of contraceptives as compared to the mainstream women.

Table 1: Mean number of children ever born to per currently married woman of the Chakma tribe of the Rangamati Hill District, SEDSIP-2006 and that of the mainstream women of Bangladesh for the period 1993-2004, BDHS

Age group	SEDSIP* 2006	BDHS**			
		2004	1999-2000	1996-1997	1993-1994
15-19	0.44	0.74	0.79	0.78	0.70
20-24	1.00	1.70	1.74	1.81	1.88
25-29	1.65	2.69	2.73	2.94	3.04
30-34	2.44	3.55	3.71	4.05	4.22
35-39	2.89	4.25	4.46	4.96	5.34
40-44	3.71	4.81	5.32	5.82	6.62
45-49	4.06	5.82	6.24	6.63	7.11
Total	2.24	3.00	3.13	3.30	3.48

Note: * Socioeconomic and Demographic Survey of the Indigenous People -2006.

** Bangladesh Demographic and Health Survey.

The results of the hierarchical analysis of covariance of the children ever born to women are presented in Table 2. In the analysis, all the two-way interactions (10 in numbers) were evaluated at the 0.05 level of significance. Among the two-way

interactions, 'education level of women and experience of child mortality', 'current residence and experience of child mortality' and 'current residence and current status of contraceptive use' were found statistically significant at the 0.05 level of significance which added only 0.01 to the squared multiple correlation coefficient. Although this ensures the applicability of multiple classification analysis (MCA), however, finally the interaction terms were not added in the models for the hierarchical analysis of covariance.

The results of the hierarchical analysis presented in Table 2 indicate that the current age of the women alone explains 42.87% of the variance and duration of marriage explains 9.31% variation out of 69.49% variability for all the variables under consideration in the model. Age at first marriage of the women is found to have significant effect on fertility. This variable contributes 2.39% variation in total children ever born to per currently married woman. The education of women alone explains 2.74% variation in the number of children ever born even after controlling for the variables, age, duration of marriage and age at marriage. The net effect of the education of husbands appears as a highly significant variable in the analysis. It contributes 2.17% to the total variation, after controlled over the preceding four variables as mentioned earlier. Only a small proportion of explained variation is ascribed to the current residence of the Chakma tribe as it contributes only 0.80% variation in childbearing for the study women. It is expected that, the higher educated and urban women are more conscious regarding their family size and keep their family in their desired size than their illiterate and rural counterparts.

Among the explanatory variables included in the analysis, the experience of child mortality exhibits the strongest predictive power on fertility. It alone explains 6.60% variation in explaining the determinants of fertility of the study tribe even after controlling over the preceding the variables under investigation. It is highly possible that, the women having experience of child mortality are likely to fill in the gap of the dead child with another one as early as possible, which in turn leads them to have higher fertility than the women having no experience of child loss. As regards the influence of current contraceptive use status is concerned, it also emerged as a significant predictor of fertility and elucidates 2.19% variation in determining the fertility of the study tribal women. Another explanatory variable 'working pattern of women' bears a statistically significant association with number of children ever born. It explains only 0.79% of total variation in fertility after controlling for all the covariates. It is expected that, the working women are tended to bear fewer number of children compatible to their work than non-working women.

Table 2: Hierarchical analysis of covariance of mean number of children ever born to currently married Chakma women of Rangamati Hill District, Bangladesh, SEDSIP-2006

Background characteristics	Sum of squares	df	Mean square	F	Partial R^2 $\times 100$
Covariates (Combined)	298.472	2	149.236	218.918***	52.18
Current age of women	245.223	1	245.223	359.724***	42.87
Duration of marriage	53.249	1	53.249	78.112***	9.31
Main effects (Combined)	98.999	13	7.615	11.171***	17.31
Age at first marriage	13.654	2	6.827	10.015***	2.39
Education level of women	15.645	3	5.215	7.650***	2.74
Education level of husband	12.403	3	4.134	6.065***	2.17
Current residence	2.503	1	2.503	3.671**	0.44
Number of children died	37.755	1	37.755	55.384***	6.6
Currently using FP method	12.548	1	12.548	18.407***	2.19
Working status of women	4.490	2	2.245	3.294**	0.79
Model	397.471	15	26.498	38.871***	69.49
Residual	174.515	25	.682		
Total	571.985	27	2.111		

Note: *** $p < 0.01$, ** $p < 0.05$.

The results of the hierarchical analysis of covariance, presented in Table 2 suggests that, the covariates in the analysis, i.e., the current age of the women and their duration of marriage significantly explain 52.18% of the total variation in the average number of children ever born to per currently married woman under study. Current age of the women alone explains 42.87% variation in mean fertility out of total 69.49% for all the factors under consideration.

The results of the MCA are presented in Table 4. The age at first marriage exhibits a substantial negative influence on fertility. The unadjusted mean fertility shows a differential of 0.91 births for age at first marriage with the highest for those women who got married within age at 18 years and the lowest (1.71 births per woman) who were married at 21 or above years. The adjusted mean parities appeared as the same pattern after being adjusted for covariates and other explanatory variables. The value of the common correlation ratio ($\eta = 0.279$) stood about half ($\beta = 0.147$) but remains still high implying some inter-correlation with other factors but exhibits strong influence on fertility.

So far as the education of women is concerned, the unadjusted mean fertility was found the highest among the illiterate women (2.73 births per woman) and the lowest (1.36 births per woman) who attained VI-X classes. The adjusted mean parity remained highest for the illiterate women and appeared lowest for the women who completed primary schooling. The education of the Chakma women does not show expected pattern of adjusted fertility, i.e., the lower fertility for higher educated women. This may be partly due to higher unemployment status of the tribal women in the locality. The correlation ratio ($\eta = 0.370$) which reduced to about one-fifth ($\beta = 0.069$) signifies the inter-correlation of this strong variable with other predictors.

The unadjusted figures demonstrate significant differentials in fertility behaviour among four categories of the education level of husbands. The highest fertility was found among the women, whose husbands were illiterate, followed by the women whose husbands attained I-V classes, VI-X classes and completed SSC or higher education. The statistical adjustment shows substantial changes in the adjusted figures in mean parities for all the categories. After being adjusted the mean fertility was found to be the highest among women whose husbands are illiterate and the lowest for the women whose husbands attained VI-X classes. The value of the correlation ratio, $\eta = 0.452$ which reduced into $\beta = 0.127$, shows substantial inter-correlation of this factor with other predictors and covariates.

The current residential status of the Chakma tribe shows expected pattern in fertility. The unadjusted mean fertility was found higher in rural areas and lower in urban areas. There exists a differential of 0.54 births between rural and urban women. The statistical adjustment reduces this difference by 0.45 births. The value of the correlation ratio, which remains still high ($\eta = 0.168$, $\beta = 0.142$) after being adjusted for covariates and other variables, exhibits stronger predictive capacity of the factor. The MCA results clearly indicate that the 'number of children died' is also a strong predictor in explaining the determinants of fertility. The difference of the unadjusted mean parity between the women having no experience of child mortality and that of the women having experience of at least one child mortality differ by 1.99 births per woman. This difference becomes narrower when it is adjusted for other variables. The study documents a positive relationship between fertility and child mortality. The value of the common correlation ratio remains still high even after adjusted for covariates and predictors ($\eta = 0.489$, $\beta = 0.265$) and shows higher predictive power of the variable.

As regards the current contraceptive use status is concerned, the predictor demonstrates appreciable differentials in fertility among the study women. The unadjusted mean fertility is found higher by 0.79 births among the women who were using any contraceptive method than that of the women who were not using any method. This difference slightly reduced when the mean parity was adjusted for other variables. The values of the correlation ratio $\eta = 0.237$ and $\beta = 0.150$ indicate little inter-correlation of the predictor with others that are included in the analysis. The reason for higher fertility of current contraceptive users may be the fact that women having larger family size are more likely to use contraceptives than the women having lower family size.

The three categories made for 'working status of the women' exhibit expected pattern of fertility. The unadjusted mean fertility was found higher among the house wives or 'non-working women' followed by the 'self employed women' and the women who 'work for wage'. After being adjusted for the covariates and other predictors of the present study, the pattern of fertility remained unaltered. The values

of the correlation ratio $\eta = 0.158$ and $\beta = 0.095$ indicate higher predictive aptitude of the variable. The results of the present study is consistent with the those of an earlier study conducted on rural women of Chittagong and Dhaka divisions by Bhuiyan and others (Bhuiyan et al, 1995).

Table 4: Multiple classification analysis of mean number of children ever born to currently married Chakma women in Rangamati Hill District, Bangladesh, SEDSIP-2006

2000

Background characteristics	Number of women (N)	Mean number of children ever born	
		Unadjusted	Adjusted
Age at first marriage ($\eta = 0.279, \beta = 0.147$)			
<19	141	2.62	2.44
19-20	69	1.94	2.08
21+	62	1.71	1.96
Education level of women ($\eta = 0.370, \beta = 0.069$)			
Illiterate	132	2.73	2.22
I-V	45	2.27	2.09
VI-X	39	1.36	2.24
SSC+	56	1.70	2.41
Education level of husband ($\eta = 0.452, \beta = 0.127$)			
Illiterate	54	3.44	2.60
I-V	63	2.35	2.22
VI-X	68	1.99	2.14
SSC+	87	1.62	2.11
Residence ($\eta = 0.168, \beta = 0.142$)			
Rural	194	2.40	2.37
Urban	78	1.86	1.92
Experience of child mortality ($\eta = 0.489, \beta = 0.265$)			
None	231	1.94	2.08
one or more	41	3.93	3.15
Currently using FP method ($\eta = 0.237, \beta = 0.150$)			
No	69	1.65	1.87
Yes	203	2.44	2.37
Working status of women ($\eta = 0.158, \beta = 0.111$)			
Non-Working	201	2.38	2.33
Self employed	39	1.90	2.07
Work for wage	32	1.81	1.88

Note: $R \times 100 = 83.36$, $R^2 \times 100 = 69.49$, Grand mean = 2.24, Total number of cases (N) = 272.

Conclusion

The present study finds that the mean number of children ever born to the Chakma tribe in the district is close to the replacement level of fertility. The age at first marriage of the respondents plays a vital role in determining fertility of the study women. Though education level of women shows significant association with fertility, the adjusted mean fertility was found higher for the higher educated women, which may be partly due to unemployment status of the study women of this locality. The current residential status of the women has significant effect on fertility. The experience of child mortality seems to be the strongest predictor in explaining the determinants of fertility. The present study documents a positive relationship between experience of child mortality and fertility. The fertility of the study tribal women also varies significantly with the use of contraception. The fertility was found higher among the current contraceptive users than non-contraceptive users.

The results of the analysis also show that the non-working women have higher fertility as compared to the self employed women and the women who work for wage. Childbearing also varies significantly with the education level of husband. The unadjusted mean fertility was found higher among the women whose husbands are illiterate and the lowest among the women whose husbands completed SSC or above classes. The total number of children ever born to currently married women was found the highest among the women whose husbands are engaged in agriculture and labourer and the lowest among the women whose husbands are service holder.

On the basis of the above discussions this study has some recommendations for policy implications. Effort should be made in raising the age at first marriage so as to control the fertility of the tribal women. Proper initiatives should be taken to build up a literate community and employment opportunities should be created for both male and female for this backward segment of the society. Child mortality inspires parents to replace the dead child with additional children, which ultimately establish a positive relationship with fertility. Thus, for the reduction of infant and child mortality, Mother and Child Health (MCH) care and other health-seeking services should be strengthened in the hilly remote areas. The increased female education may help in the reduction of both fertility and child mortality. There also needs comprehensive research for better understanding of the socioeconomic and demographic status for any development especially for this underprivileged segment of population of the country.

References

- Banu, Akadli Ergocmen (1997). "An Overview of Women's Status and Fertility in Turkey" in Maria Eugenia Cosio-Zavala (ed.), *Women and Families: Evolution of the Status of Women as Factor and Consequence of Changes in Family Dynamics*, Paris: CICRED, pp. 79-105.
- BBS (2005). 2001 *Population Census. Zilla series, Zilla: Rangamati*. Bangladesh Bureau of Statistics (BBS), Planning Division, Dhaka, Bangladesh: Ministry of Planning.
- Bhuiyan, Abdul Alim, Abul Kashem Majumder and M. A. Karim (1995). "Fertility in Rural Chittagong and Dhaka Divisions, Bangladesh." *Journal of Chittagong University Studies*, Part II, Science, 19(1): 93-101.
- Bleie, Tone, (2005). *Tribal Peoples, Nationalism and the Human Rights Challenge: The Adivasis of Bangladesh*, Dhaka: the University Press Limited.
- Gain, Philip, (2000). "Women in the CHT: Some Facts" in Philip Gain (ed.), *The Chittagong Hill Tracts: Life and Nature at Risk*, SEHD, Dhaka.
- Guhathakurta, Meghna (2000). "Women's Survival and Resistance" in Philip Gain (ed.), *The Chittagong Hill Tracts: Life and Nature at Risk*, Dhaka: SEHD.
- Mahler, K. (1996). "Fertility in Some Nepali Villages Varies with Level of Gender Equality." *International Family Planning Perspectives*, 22 (2): p. 88.
- RHDC (2001). *A Brief on Rangamati Hill District and Rangamati Hill District Council. Rangamati*, Bangladesh: Rangamati Hill District Council.
- RHDC (2005). *Rangamati Hill District Council in Brief*. Rangamati, Bangladesh: Rangamati Hill District Council.

MICRO-CREDIT AND POVERTY ALLEVIATION IN SOUTH ASIA AND ITS IMPLICATIONS TO ASIAN DEVELOPMENT

Selina Ahmed*
K. M. Rezaul Karim**
Dr. M. A. Q. Bhuiyan*

Abstract: South Asia is generally characterised by low productivity, extreme poverty, growing inequality and high population density and growth rate. The experiences of poverty alleviation programme in South Asia have much significance to Asian Development. Asia can learn lessons from the success or failure of this programme in South Asian countries. It is argued in this paper that 'credit alone' is not enough for poverty alleviation. Diversified financial services to the poor and 'credit with social development' are needed for poverty alleviation. Social mobilisation, conscientization and empowerment of the poor are necessary conditions for achieving desired success in their upliftment.

Introduction

South Asia is the most populous region in the world. In fact, more than one-third of the world's one billion poorest people live in this region. The people of this region are very ill-fated despite their hopes, aspirations and natural resources. The countries in this region have been pursuing policies of economic and social development for the last fifty years and achieved little success in the field of economic growth. And despite those successes they have not been able to reduce poverty substantially.

In recent years remarkable achievements of micro level efforts in poverty alleviation by Bangladesh has inspired many countries of the world. Particularly the approach of targeted micro credit programme of the Grameen Bank has become a model for specialised financial service to the poor. This 'model' got worldwide recognition through the First Micro Credit Summit of 1997. Replication of Grameen Bank micro credit projects are now functioning in 55 countries of the world and has achieved a 'panacea status'. The poor, who are intended to be covered by this programme, are not homogenous groups and the poverty has several dimensions (e.g., gender, political, social and cultural). A critical appraisal indicates that although micro credit programme of the Grameen Bank has made significant contributions to poverty alleviation, it has not been able to reach all categories of poor, resulting in limited impact on poverty eradication. It is suggested in the paper that Asian agenda

* Assistant Professor, Sociology Discipline, Khulna University, Khulna.

** Dr. K. M. Rezaul Karim Lecturer, Department of Sociology, Government B. L. College, Khulna.

*** Dr. M. A. Q. Bhuiyan, Professor, Department of Sociology, Rajshahi, Rajshahi.

for alleviation of poverty should take into consideration not only 'today's poor' but also those vulnerable sections of the society who may be 'tomorrow's poor.'

Method

In the present study content analysis method has been applied. It should be mentioned here that this is a secondary data based paper. And relevant data have been collected from books, journals, magazines, research papers, World Bank reports, dailies etc. Collected data have been analysed with the help of computer. And the analysed data have been interpreted in descriptive and simple tabular form.

Discussion

Before we discuss micro-credit and poverty alleviation in South Asia and its implications to Asian development, it is necessary to have an overview of South Asia.

South Asia comprises seven countries- Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan and Sri Lanka. It covers an area of about 4.6 million kilometers, which is only 3.31% of the world's total land mass. South Asia is known as over populated region. About one-fifth (1400 million) of the world's population live in the region (Ahmed, 2005:7). The population growth rate in the region is 2.1% as against 0.7% for the developed world. The per capita income of the region is only 500 \$. The vast majority of the people of this region still live in villages.

Geographically Bangladesh, Bhutan, Pakistan, India and Nepal are in the Sub-Continent while Sri Lanka and Maldives are islands states in the Indian Ocean. It is a unity in diversity. These countries vary in size and population. Culturally, it is the home of various ethnic groups and languages.

There are clear differences among the South Asian states in respect of economy. Indian economy is the strongest in this region. Economies of Pakistan, Sri Lanka and Maldives are also not weak. Bangladesh, Bhutan and Nepal are classified as Least Developed Countries (LDCs).

Agriculture is main sector in the economy. South Asia is generally characterised by low productivity, extreme poverty, growing inequality and high population density and growth rate. In fact, more than one-third (i. e., 40%) of the world's poorest people live in the region (Ahmed, 2005:7). Quality of life indices, such as, life expectancy, literacy, infant mortality etc. is generally poor in South Asia except Sri Lanka).

A brief discussion of inequality, of which poverty is a dimension only, may be relevant here.

Social inequality exists in all types of human society. However, in earlier societies, inequality was not a problem to the rulers, scholars and philosophers. We know that savant Greek philosophers Plato and Aristotle did not advocate the equality of all men. Slave and feudal societies were based on the principle of inequality. The Hindu society of India was based on a hierarchical order, which also influenced other non-Hindu communities in South Asia. The principle of equality gained much ground after the French revolution. Since then, scholars as well as politicians have been advocating the ideology of equality. However, it is often argued that inequality instead of being reduced has in fact increased in modern times, Although many of the old forms of inequality has disappeared or become less visible in modern societies, some new have emerged. We agree with Beteille when he states, "The great paradox of the modern world is that everywhere men attach themselves to the principle of equality and everywhere, in their own lives as well as in the lives of others, they encounter the presence of inequality" (Betellie 1977: 1).

It can not be denied that social inequality is one of the central problems of contemporary human society. In a democratic system, government is concerned with the well being of all citizens of the state. People's representatives are very strong in raising the problems of the under privileged and backward and poor sections of the society. Non-democratic systems also cannot overlook this problem. In fact, equality is the sprite of the modern age.

It would be appropriate for us if we look at the question of poverty alleviation from the above-mentioned ideological and moral context.

Poverty having its multi-dimensional damaging effect on the overall aspect of human life, has now become a regional as well as global concern. It is now well established that national level efforts alone are not sufficient to address the poverty related issues.

As stated earlier, about one fifth of the world's poorest people live in this region. The tables below clearly indicate the overall scenario of poverty in South Asia.

Table 1: Some Demographic Features of South Asian Countries

Country	Population (milli.1996)	Land Area (thousand sq.km.1995)	Populat ion Density (Per sq.km. 1996)	GNP per Capita		Av. Annual Pop. Growth Rate (1980-86)	Crude Birth Rate	Crude Death Rate	Age Depende ncy Ratio
				\$1996	Av. Annual Growth %				
Bangladesh	122	130	930	260	3.8	2.1	28	10	.08
Bhutan	0.715	47	20	390	2.6	-	-	-	-
India	945	2.973	320	380	5.1	2.0	25	09	0.6
Maldives	0.256	0.3	850	1080	6.9	-	-	-	-
Nepal	22	143	150	210	1.8	2.6	37	11	0.9
Pakistan	134	771	170	480	0.3	3.0	37	08	0.9
Sri Lanka	18	65	280	740	0.5	1.4	19	06	0.5
South Asia	1266	4781	265	380	4.4	2.1	27	09	0.7
High Income Countries	919	30951	30	25870	2.0	0.7	12	09	0.5

Source: *World Development Indicators, 1998: 17*

It is shown in the Table that India has the highest number of people in the region. 945 million people live in 2973 sq. km. area of India. Pakistan is the second largest country in terms of population and land area (134 million people in a land area of 771 thousands sq. km.). In Bangladesh there live 122 million people in 130 thousands sq. km. land area. In Sri Lanka's 18 million people live in 65 thousands sq. km. land of the island state. Bhutan has 47 thousand sq. km. land for its 0.715 million people and 0.256 million people of Maldives live in 0.3 thousands km. land of that state. Density of population in each of these countries is not proportionate to their land sizes. Thus we find, Bangladesh has highest density of population per sq. km. followed by Maldives, India and Sri Lanka. On the other hand, Pakistan, Nepal and Bhutan's density of population is below the South Asian figure. While the average GNP (per capita) in South Asia is \$380 that of Bangladesh and Nepal are below the South Asia figure. In cases of Maldives, Sri Lanka, Pakistan, Bhutan and India GNP (per capita) are above the figure. We find variations in respect of average annual population growth rate, crude birth rate and dependency ratio between the countries of this region.

Table 2: Quality of Life in South Asian Countries

Country	Life Expectancy at Birth		Prevalence of child malnutrition (% of Children under 5 years)	Sanitation (% of Population with Access)	Safe water (% of Population with Access)	Adult Literacy Rate (9% of people 15 years above)		Commercial energy us kg of oil equivalent per capita
	Male	Female				Male	Female	
Bangladesh	57	59		35	79	51	74	67
Bhutan	Both sexes	53		-	-	Both sexes	58	-
India	62	63		29	81	35	62	260
Maldives	Both Sexes	64		-	-	Both Sexes	07	-
Nepal	57	57		20	48	59	86	33
Pakistan	62	65		30	60	50	76	243
Sri Lanka	71	75		-	-	07	13	136
South Asia	61	63		30	78	38	64	231
High Income Countries	74	81		92	-	-	-	5123

Source: World Development Indicators, 1998:39

Quality of life is an important indicator of the condition of life of any people. Data on the quality of life in South Asian countries are presented in Table-2. It is shown in the Table that indices of quality of life, such as, life expectancy at birth, prevalence of child malnutrition, percentage of people with access to sanitation and safe water vary among the countries of the region. So is the case in respect of adult illiteracy and commercial energy use.

The condition of the people of South Asia, in general, is very poor in these aspects. Only exception is Sri Lanka where the sanitation is little better than other countries of the region.

Data regarding the percentage of population below poverty line is shown in Table-3. It is shown in the Table that Nepal has the **highest percentage** of people and Pakistan has the **lowest percentage** of people who live below that line. The condition of Bangladesh, India and Sri Lanka is almost same. It is noteworthy that poverty in rural areas of all the five countries is more acute than in urban areas.

Table-3: State of Poverty in South Asian Countries

Country	National Poverty Line (population below poverty line)		
	Rural	Urban	National
Bangladesh (1995-96)*	39.8	14.3	35.6
India (1994)	36.7	30.5	35.0
Pakistan (1991)	36.9	28.0	34.0
Sri Lanka (1990-91)	38.1	28.4	35.3

Source: World Development Indicators 1994:21

* Although data for the five countries are shown in the Table, they represent 985 of South Asians population. Survey year is also shown in the parenthesis.

percentage of population with access to health care services has also increased in this region.

Table-4: Some Selected Indicators of Progress toward Development in South Asia (5 country)

Country	Net primary enrolment ratio (% of relevant age group)				Infant mortality rate		Under 5 mortality rate		Maternal mortality ratio	Health care (% of population with access)
					Per 1000 live births		Per 1000		Per 100,000 live births	
	Male		Female		1970	1996	1970	1996	1990-96	1993
Bangladesh	-	66	-	58	140	77	237	112	850	74
India	-	-	-	-	137	65	202	85	437	-
Nepal	-	-	-	-	166	85	232	116	1500	-
Pakistan	-	-	-	-	142	88	183	123	340	85
Sri Lanka	-	-	-	-	53	15	100	19	30	90
South Asia	-	-	-	-	139	73	-	93	-	-
High Income Group Countries	98	98	98	98	22	06	-	07	-	-

Source: World Development Indicators 1998:69

Now let us have a look into the investment in human capital in South Asian region. Data

regarding investment in two sectors, namely, health and education is presented in *Appendix-1*. It shows that overall performance of India, Pakistan, Bangladesh and Sri Lanka in health sector are better than those of the other countries in this region while performance of Sri Lanka in education sector is the best in the region. Gross enrolment ratio of percentage of school age population is 74 in Sri Lanka, 44 in India, 30 in Nepal, 21 in Pakistan, 19 in Bangladesh and only 5 in Bhutan. The illiteracy rate in the population of age 15 years and above is 74 in Nepal, 65 in Pakistan and Bangladesh, 62 in Bhutan, 52 in India and 12 in Sri Lanka. The overall situation is comparable between the countries of the region, except Sri Lanka.

Though data from different sectors provide somewhat different picture about the level and incidence of poverty, the general picture of poverty in South Asia is unacceptable. The countries in the region have been pursuing policy of economic and social development over the last 50 years or so i.e., since their independence from the colonial rule. Economic growth is an essential means for enabling development. But the experience of these countries shows that economic growth in itself is not enough for an all round development. Despite some success in the field of economic growth (e.g., raising per capita GNP) these countries have not been able to reduce poverty substantially.

It may be mentioned here that SAARC was launched in 1985. One of the prime development agenda of SAARC is to usher in a new era of cooperation to promote the welfare of the people of the region and bring about a substantive change in the

quality of their lives. SAARC Summit held in Colombo in 1991 paid more attention to poverty alleviation. In line with the thematic importance set up by Colombo summit an independent South Asian Commission on poverty alleviation was constituted.¹ Issue of poverty alleviation got further impetus in SAARC Dhaka Declaration, 1993.

The commission thoroughly reviewed the poverty scenario of the region and critically examined the intervention strategy undertaken by the SAARC countries. It noted that macro economic structural reform without adequate "social nets" for the poor and disadvantaged would lead to social unrest. The commission also assessed the inadequacies of the past policy framework to the member countries. The new premise for policy interventions as suggested by the Commission is based on two equally strong fronts -- the open economy industrialisation and concurrently poverty alleviation front (for details, see Hossain 1993).

We have already discussed the state of poverty in South Asia. It has been also mentioned earlier that South Asian countries are committed to alleviate poverty through strategic intervention. However, it is a well known fact that social development and poverty are affected by number of likely factors: economic growth, level of income, access to multiple components of social services (health, education, family planning, nutrition, water and sanitation), social integration, environmental protection, rural development, the majority of institutions and the regulatory, political and legal environments. The relative importance of these factors and their interaction are not known with any degree of precision and are arguably difficult to predict. Income is widely acknowledged to be good predictor of poverty rates; but at the same time, leading scholars believe that economic growth is not all that matters in reducing poverty. It is now widely believed that targeted social interventions reduces poverty more quickly than long term economic growth.

The remarkable achievements of micro-level efforts in alleviation of poverty by Bangladesh have inspired many countries of the world. Particularly the approach of targeted micro-credit programme of the Grameen Bank, BRAC and some other non-government organizations has proved that necessary services can be provided effectively to the poor by specialised financial institutions and poverty of the poorest of the poor can be reduced significantly within a short period of time. The World Bank has acclaimed "the revolution in innovative micro-credit" in Bangladesh (see Ahmed, 1997:3). The success of the Grameen Bank and similar micro-credit efforts in Bangladesh and elsewhere eventually captured the attention of such people as President Clinton, who made it a centre-piece of his strategy to lift people out of poverty. The micro-credit programme got worldwide recognition through the First Micro-credit Summit held in Washington in 1997. The summit set an ambitious goal of providing credit for self-employment and other financial services to 100 million of the world's poorest families by 2005.

It should be mentioned here that although a number of NGOs in Asia and Latin America have developed their own models of micro-credit, the model developed by the Grameen Bank of Bangladesh has gained wide acceptance in various parts of the world. Wood and Sharif rightly observed, "the beauty of the Grameen Bank model lies in the extent to which it can work within limited objectives almost independent of political economy and culture" (Wood and Sharif 1997:32). Currently Grameen Bank

¹ It was a 15 members commission chaired by ex-Prime Minister of Nepal and composed of development planners, NGO personalities, academicians and rural development experts drawn from member countries.

replication micro-credit projects are functioning in 55 countries in the world and in some countries a number of projects are funded by Grameen Trust. The characteristic feature of the micro-credit programme, in general and the major sources of fund for micro-finance institutions (MFIs) are:

Table 5: Features of Micro-Credit Programme and Major Sources of Fund for MFI

Sl. No.	Features of Micro-Credit Programme	Major Sources of Fund for Micro-Finance Institutions
01	Collateral free credit with simplified documentation and flexible terms and conditions;	External Donor Agencies
02	High rate of recovery of credit ensured through close supervision of end-use;	Loans from National Agencies
03	Provision of strict group exercise (e.g., weekly meetings, savings, mobilisation, repayment of weekly instalments and awareness raising etc.)	Internal Savings of the members;
04	Most of the member/loanees are women	Sponsors equity and others (including interest and service charge)

Source: *Daily Star*, 16 February, 2004

As mentioned above, Grameen Bank replication micro-credit projects are functioning in 55 countries of the world. Data on the performance of 33 Grameen Trust funded GBRPs in four South Asian countries are presented in Appendix-2. It is shown there that 84.18% of the members are borrowers and of the total borrowers 94.17% are women members. The repayment rate of loan is 94.17%. If one takes repayment rate into consideration, the performance of the GBRPs can be termed as highly successful. Such success rates have gained 'Panacea status' for the model. However, success of the model needs a critical appraisal before we draw any conclusion on its role in poverty alleviation.

Rate of interest charged on loans is important in the evaluation of success of any credit programme. If the rate of interest is high, positive return from the loans cannot be expected. It may be mentioned here that there had been a great demand, in most South Asian countries, to be the government or other agencies to make provisions for credit for the rural people at low rate of interest. At present Grameen Bank charges 20% interest and 5% group tax on its loans. It is, however, alleged that the effective rate of interest charged by Grameen Bank and other MFIs, as distinct from nominal rate of interest works out up to over 30% which is much higher than the interest charged by the commercial bank (18-22%).

Although access to own savings of the members should be considered as a basic right, usually they do not have access to their savings in MFIs. Only in recent times MFIs have introduced provision of voluntary savings with flexible and open access facilities. However, collection, savings, access to and management of savings are not always transparent and standardized in many FDIs. This is particularly true for the beginner MFIs. In this connection Khan states, "There is a big avenue of exploitation in the method of maintenance of savings" (Khan, 1998: 8).

It is generally said that women are poorest in the poor families and they are also the most weakly positioned category of social actor in society. The Grameen Bank and its replicas provide loans to poor women to uplift their position in the family and society. But the critiques say that loan to small groups of women is 'essentially non-threatening to the male and class dominated local political economy' (Wood and Sharif, 1977:30). The effect of the focus on women borrowers is not often an unmixed blessing. As Wood and Sharif states, "There was even concern that the focus upon female borrowers was contributing to an inflation of dowry expectations in the locality..." (Wood and Sharif, 1977: 34). A woman from Nepal told Tood, editor of CASHPOR that her husband not only took over her grocery business he had also taken a second wife. And Tood is convinced that most successful borrowers were "those husbands and wives working in partnership" (Mann, 1999:2).

The poor are not a homogenous group. Broadly, they may be divided into two categories: (i) those who are able to use micro-credit and (ii) those who are ineligible for micro-credit. Usually, the first category of poor is covered by the programmes of MFIs. The second category is bypassed because they are risky for loan purpose. Sharif and Wood's observation is important here. They say "while these have managed to extend micro-credit services to the poor (an outstanding achievement), all the major NGOs and Grameen Bank admit that they have serious problem in reaching the hard core poor, resulting in limited coverage (Wood and Sharif, 1977: 374).

Since Grameen Bank and other MFIs are running their micro-credit programmes with economic subsidy in the form of inexpensive funds and grants from the donor agencies, there is a concern for the sustainability of such MFIs. However, after an analysis of Grameen Bank's cost effectiveness, Khandker *et al.* conclude "The Grameen Bank's experience suggests that it is possible to develop a profitable financial institution that exclusively works with the poor" (Khandker *et al.*, 1996: 16).

The preceding discussion indicates that the micro-credit programme of Grameen Bank and other MFIs have made significant contributions to poverty alleviation. However, they could not reach all the poor, resulting in limited impact on poverty eradication.

In the last two decades, economy of many countries in Asia was growing faster than of any other region of the world. Some Asian economies have now achieved the status of newly industrialized economies. Despite this success, Asia has remained the home of vast majority of the world's poor. It should be mentioned here that although poverty exists both in urban and rural areas, the problem in Asia is mainly of rural poverty. The gender dimension of poverty of Asia cannot be ignored. As mentioned earlier, women are poorest in the poor families and weakly positioned in the society. One should also bring political economy of the countries into consideration for a proper understanding of poverty (see Siddiquee 1987, Quibria 1994). Woolcock has rightly mentioned, "the Political, economic and cultural contexts in which poverty is embedded also needs to be addressed, since access to credit in and of itself cannot efface the structural causes of poverty (Woolcock, 1994:1).

Conclusion

Asian countries have been fighting the problem of poverty for several decades. Many of them have achieved success in reducing poverty. South Asia's innovative micro-credit programme has drawn the attention of the world. Asia can learn lessons from experiences of micro-credit programmes in South Asian countries. The experiences of

South Asia, however, suggest that credit alone is not enough for poverty alleviation. Diversified financial services to the poor and 'credit with social development' are interdependent for poverty alleviation.

It should be mentioned here that the poor are not sufficiently present in the agenda for their upliftment. Currently, they are slightly involved at planning and implementation level of poverty alleviation programmes. Social mobilization, conscientization and empowerment of the poor are necessary for achieving desired success in poverty alleviation. Alleviation of poverty can be looked at as a process of ensuring access of the poor to a minimum bundle of goods and services. In this connection, Sen's observation is important. He says, "Ultimately, poverty removal is a matter of entitlement raising." (Sen 1980: 53). Although the poor are unorganized, they are majority in many societies. If they are organized, they can create pressure for adoption of pro-poor policy by the government. In democracies, the government cannot bypass the poor because of the latter's 'ballot power'. However, mere Franchise is not enough for the realization of poor's right and entitlements. As we know, once the election is over, they are forgotten. Moreover, electoral politics in developing countries may remain set in a 'patron-client framework'.

Since mobilization and conscientization of people at the national level is not too difficult at the moment, one can do the same at local level. This is what many of the NGOs and MFIs are currently doing. Development of local institutions is also necessary for national development. Obaidullah's observation is relevant here, "Empirical evidence provides that the countries which have involved the local government for planning and development have been successful in achieving higher economic growth and per capita income, than the countries which have not used local institutions. This view is further corroborated by Oklay, Conyers and Siddiquee in the 1980s and 1990s" (Obaidullah, 1998: 38).

The local government bodies should be reoriented as pro-poor institutions. Finally, Asian agenda for alleviation of poverty should take into consideration not only the 'today's poor' but also those vulnerable sections of the society who may be 'tomorrow's poor'.

References

- Akanda, Safar A. and Islam Aminul, *Rural poverty and Development Strategies in Bangladesh*, Rajshahi : Institute of Bangladesh Studies, Rajshahi University, may 1991
- Ahmed, Sayed Abdal. SAARC (1985-2005) *Daily Amar Desh*, 10 November 2005
- Ahmed, Saleuddin. *Annual Report 1995-96*, Dhaka: PKSF, 1997
- Beteille, Andre. *Inequality among Men*, Delhi: Oxford University Press, 1997
- Hossain, Mohammad Ismail. *Annual Report*, Dhaka: PKSF, 1993
- Islam, Rizanul(ed.). *Strategies for Alleviating Poverty in Rural Asia*, BIDS-ILO, 1985
- Khan, Mosharraf Hossain "Sources of Fund for MFIs: Micro-savings and Market Linkage" in *The Micro-Credit Review*, Occasional Papers: Vol. I, December 1998
- Khandker, Shahidur R; Khalily, Baqui M.A.; and Khan, Zabeed H. *Credit Programs for the Poor: Household and Intra-household Impacts and Program Sustainability*, Vols. I&II, BIDS and the World Bank, Dhaka, 1996
- Mann, Judy. "Small Loans are Changing the World" in *Grameen Dialogue*, October 1999, Dhaka
- Obaidullah, A.T.M." Local Government of Bangladesh: An Instrument or An Institution" in *Journal of the Asiatic Society of Bangladesh*, Vol. 43, December 1998

Quibria, H.G.(ed.). *Rural Poverty in Developing Asia* (Vol. I) ADB, Manila, 1994

Sen, S.K. "Levels of Poverty: Policy and Change World" *World Bank Staff Working Paper No. 401*, World Bank, Washington, D.C., 1980

Siddiqui, Kamal. *The Political Economy of Rural Poverty in Bangladesh*, Dhaka: National Institute of Local Government, 1980

The World Bank. *Social Indicators of Development*, 1994

The World Bank. *Trends in Developing Economics*, 1994

The World Bank. *World Developing Indicators*, 1994

Wood, Geoffrey D. and Sharif, Iffath *Who Needs Credits?* Dhaka: UPL, 1997

Woolcock, Michael J.V. *Are Group-based Credit Programs for the Poor a Sustainable Economic Development Strategy?* A Paper Submitted to the Annual Conference of American Sociological Association held in Los Angeles in 1994

Appendices

Appendix-1

SECTOR	COUNTRIES						
	Bangladesh	Bhutan	India	Maldives	Nepal	Pakistan	Sri Lanka
Health							
Population per Physician (persons)	5304	13112	2459	1433 3	1682 9	2936	5516
Population per Nurse (persons)	6417	-	1701	158	2755	5042	1288
Population per Hospital Bed (persons)	3158	-	1371	-	4010	1769	365
Oral Dehydration Therapy (under 5% cases)	26	65	14	27	14	34	76
Education							
Gross Enrolment							
Secondary (% of school age population)	19	05	44	-	30	21	74
Female (% of school age population)	12	02	32	-	17	13	77
Pupil-Teacher Ratio							
Primary (pupil per teacher)	63	37	60	-	39	41	12
Secondary (pupil per teacher)	28	05	23	-	-	19	-
Pupil reaching Grade 4 (% cohort pupil per teacher)	45	-	58	-	-	51	98
Illiteracy % Population (age 15+)	65	62	52	-	74	65	12
Female % females (age 15+)	78	75	66	-	87	79	17
Newspaper Circulation per 1000 Population	06	-	-	09	08	16	32

Source: *Social Indicators of Development, 1994*

Appendix-2

C o u n t r y	Organization Name	Yr. of Estab.	No. of Members	No. of Borrowers	Women Borrowers (%)	Group Savings (balance)	Amount of Loan Disbursed	Am. of Outs. Loans	Repayment Rate (%)
B A N G L A D E S H	BAWPA	1992	4042	2417	100	81657	534361	121729	100
	CMES	1992	3695	667	100	15037	400623	19995	100
	DSK	1993	7172	6457	97	180393	1803895	372822	97
	IDF	1993	14545	13217	100	183895	2093244	661196	100
	OMI	1992	2065	1693	100	23942	251333	71061	100
	JAC	1984	3530	2532	88	81006	197881	83912	98
	HOPE	1991	900	485	84	5354	38531	17437	86
	CWFP	1976	985	204	100	1945	12937	8338	100
	DESH'F	1995	1162	1162	100	15189	157062	48321	100
	Hitachi BD	1993	1077	516	120	6627	30208	16400	99
	Green Hill	1992	365	127	70	1519	7292	5747	50
	BAWSE	1990	2227	1624	100	28306	112333	53362	100
S u b - t o t a l	12		41165	31101 (75.55%)	94.92	584870	5686700	1480320 (26.03%)	94.17
I N D I A	ASA	1993	7584	6545	00	3416	817748	284165	98
	BSS	1997	107	97	00	5	10000	3203	49
	CRESA	1996	841	758	00	651	50187	21700	54
	RDO	1991	10009	10009	00	51767	1480849	454278	98
	SARS	1992	3080	2895	00	1272	423437	137339	91
	SHARE	1989	25465	19306	00	5160	4810822	1709227	100
	PIDT	1995	350	310	00	70	21610	10157	85
	SPHERE	1994	2609	899	00	558	38689	22991	81
	VISA	1992	156	108	00	60	7653	1386	89
	GBUP	1997	3658	2746	00	678	166570	82889	92
	SRI	1966	487	399	00	9989	128154	40704	100
	MASSES	1983	400	352	00	63	38750	23188	100
	ESAF	1992	515	231	00	486	16650	10436	97
	BES	1998	1085	353	00	927	35152	18625	100
S u b - t o t a l	14		56346	45008 (79.88%)	00	52402	8045823	2820288 (35.05%)	88.14

N E P A L	SBP, CSD	1993	27255	24269	00	29747	4189019	1093506	100
	GB Nepal	1993	39717	39132	00	100368	19713691	3201426	100
	Nirdhan	1993	20171	15770	00	90035	3536965	1012920	100
	WCS	1995	412	275	00	3180	35950	19665	98
	NERUDO	1992	430	420	00	2168	41809	18203	100
S u b - t o t a l	05		87985	79866 (90.77%)	00	1625498	27517434	5345720 (19.43%)	99.6
P A K I S T A N	KASHFF	1996	1300	1232	100	2692	149366	78566	100
	TARAQUEE	1996	262	262	100	5051	66725	27018	100
S u b - t o t a l	02		1562	1494 (95.65%)	100	7743	216091	105584 (48.86%)	100
G r a n d T o t a l	33	-	1,87,058	1,57,469 (84.18%)	-	25,70,513	4,14,66,048	97,51,912 (23.52%)	-

Source: Grameen Trust, Dhaka, Bangladesh (As on 30 August 1999)

IMPACT OF INFLATION ON ECONOMIC GROWTH IN BANGLADESH

Md. Tanjil Hossain*

Abstract: The objective of this study is to examine the relationship between inflation and GDP growth rate in Bangladesh by using the data from 1984-85 to 2003-04. For this purpose time series data are used. But most of the time series data are non-stationary. Augmented Dicky-Fuller (ADF) test statistic is used to see whether the time series data are stationary or not. The ADF test statistic shows that data of inflation and GDP growth rate are non-stationary in level form but stationary in first difference forms. Then Johansen co-integration test is used to see the long run relationship between inflation and GDP growth rate. The co-integration results show that inflation is positively related to GDP rate growth during the years under study. These results give an important policy implication that moderate inflation is conducive to the GDP growth rate in the context of Bangladesh.

1. Introduction

Evidence from empirical studies shows that high inflation has a negative correlation with economic growth. In countries where inflation is high, economic growth is normally low. Many economists are, therefore, convinced that inflation is undesirable and should be avoided at all costs. Recent economic research has cast some doubt on this argument. In principle, there is likely to be a reversal somewhere in the inverse relationship between inflation and growth as there are no grounds for believing that continuously declining prices, i.e. deflation, are good for growth.

Stanley Fischer (1993) found that the inverse relationship would hold, even at low rates of inflation. Another study by Barro (1996) confirmed this inverse relationship, but found that it was relatively weak. Increasing inflation by 1% led to only a small reduction of less than 0.03% in growth rate, according to Barro. De Gregorio (1993), and Smyth (1992, 1995) also found negative impact of inflation on growth. A range of other studies (for example, Bruno and Easterly, 1998) found no effects from inflation on growth. Sarel (1996) came to the conclusion that "When inflation is low, it has no significant negative effect on economic growth: the effect may even be positive. But when inflation is high, it has a powerful negative effect on

*Lecturer in Economics, Department of Business Administration, Northern University, Khulna Campus, Bangladesh.

growth. The structural break is estimated to occur where the average annual rate of inflation is 8%."

Despite this uncertainty about the negative correlation between inflation and growth at inflation rates below 8%, there is still no evidence of a positive correlation between inflation and growth over any long period of time. In Bangladesh, the 1970s were a decade of high inflation compared with the 1980s and 1990s. Inflation had averaged 9 percent in the 1980s and around 4 percent in the 1990s. A study by Mallik and Chowdhury (2001) for Bangladesh (1974-1997), India (1961-1997), Pakistan (1957-1997) and Sri Lanka (1966-1997) found positive relationship between inflation and growth. On the other hand, Islam (2005) found no impact of inflation on growth in Bangladesh for the post reform period 1992-2004. Hence, there is scope to study the relationship between inflation and growth for Bangladesh.

2. Objectives and Methodology

The objective of this study is to examine the relationship between inflation and economic growth in Bangladesh. For this purpose, the long run inflation-growth relationship is investigated by the following model:

$$GR = f(IR) \quad (1)$$

The exact form of the direct regression model is given below

$$GR = a + b_1 IR + u_t \quad (2)$$

where

GR = Growth rate of GDP at 1995-96 prices (1984-85 to 2003-04)

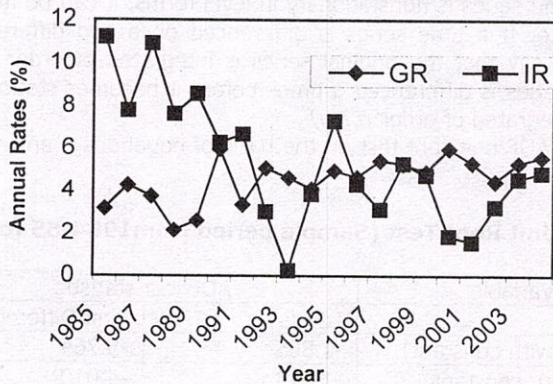
IR = Inflation rate, % change in GDP deflator.

u_t = the disturbance term or random error

In this study, growth of real GDP (base 1995-96 = 100) is used as a proxy of economic growth and percentage change in GDP deflator is used as inflation rate. Our study is based on annual data of inflation and economic growth of Bangladesh covering the period from 1984-85 to 2003-04. These data are taken from *Key Indicators* 2002 and 2004 editions of Asian Development Bank. We have chosen 1984-85 as the starting year to avoid any break in the data series. GDP deflator is used because the data are available with the most recent base 1995-96 = 100. CPI data are available with different base years. Then, we have to use statistical method to shift the base of CPI data. In this sense GDP deflator is more useful than CPI data. Therefore, we use GDP deflator data instead of CPI data in our study.

3. Stationarity Check

As is common procedure in time series analysis, prior to carrying out regressions, the order of integration is determined for each time series. The assumptions of a classical regression model require that the series for both the dependent and explanatory variables are stationary. If they are non-stationary their mean and/or variance are time dependent. In practice this means that there is no long-run mean to which the variable converges. If the regression variables are non-stationary, the regression is likely to be spurious, and the results have no economic meaning. Because variables are non-stationary, estimates for coefficients are not consistent and normal tests of statistical inference do not hold, (see, for example, Enders, 1995). Figure 1 shows the relationship between GDP growth and inflation rates in Bangladesh during the period from 1984-85 to 2003-04. Inflation is measured by the GDP deflator (base 1995-96 = 100), and GDP growth is at constant 1995-96 prices.

Figure 1: GDP Growth and Inflation in Bangladesh from 1984-85 to 2003-04

Source: Asian Development Bank, *Key Indicators*, 2002 and 2004 editions.

Figure 1 shows that the relationship between GDP growth and inflation rates has been unstable. The mean of GR is 4.51 and standard deviation is 1.06. The mean and standard deviation of IR are 5.33 and 2.95 respectively. To check the stationarity of the series we use augmented Dickey Fuller (ADF) test of the unit root. In our study we use the following equation to test whether the time series data on real GDP is stationary or not.

$$\Delta GR_t = \partial_o + \partial_1 GR_{t-1} + \gamma \sum_{i=1}^n GR_{t-i} + \xi_t \quad (3)$$

Where, Δ = the first difference, ∂_o = constant, ∂_1 and γ are coefficient. $\Delta GR_t = (GR_t - GR_{t-1})$, $\Delta GR_{t-2} = (GR_{t-2} - GR_{t-3})$ etc are different lagged difference terms. Researcher can include different lagged difference terms to make the error term ξ_t serially independent. In this case the null hypothesis of unit root can be written as:

$$H_0 = \partial_1 = 0$$

If $\partial_1 = 0$, then the time series has unit root, which indicates that time series is nonstationary. In this study ADF test is applied in equation (3.1) to find out unit root in the time series. If the ADF test statistic is greater than the critical value at the chosen level of significance, the null hypothesis of unit root is rejected which indicates that the time series is stationary. On the other hand, if the ADF test statistic is less than the critical value at the chosen level of significance, the null hypothesis of unit root is accepted which indicate that the time series is nonstationary.

Similarly, using the following equation tests the ADF unit root test on the IR series:

$$\Delta IR_t = \partial_o + \partial_1 IR_{t-1} + \gamma \sum_{i=1}^n IR_{t-i} + \xi_t \quad (4)$$

The explanation of this equation (4) is similar to that of equation (3).

A time series is integrated of order zero, $I(0)$, if the time series is nonstationary in level forms. If a time series is nonstationary in level forms, it can be made stationary by taking difference. If a time series is differenced once and differenced series is stationary, we can say that the original series is integrated of order one, $I(1)$. In general if a time series is differenced a times before it becomes stationary, then the original series is integrated of order a , $I(a)$.

The results of ADF unit root test on the basis of equations 3 and 4 are shown in Table 1.

Table 1: ADF Unit Root Test (Sample period from 1984-85 to 2003-04)

Variable	ADF test statistic	
	Levels	First Difference
GR (with constant)	-1.865	-5.764
IR (with constant)	-1.914	-4.010

Note: The Mackinnon's critical value at 1% level of significance is -3.857 for levels and -3.887 for first differences of the variables.

The null hypothesis is that the series has a unit root. If the ADF statistic is less than the critical value at the chosen level of significance, the null hypothesis of unit root is accepted which indicates that the time series is nonstationary. If the ADF statistic is larger than the critical value at the chosen level of significance the null hypothesis of unit root is rejected which mean that time series is stationary. The results shown in Table 1 indicate that we cannot reject null hypothesis of unit root at level forms. That is, according to ADF test, time series on GR and IR have unit root and are non-stationary in levels. But we can reject null hypothesis of unit root in the same variables in first difference, which indicates that two variables become stationary at 1-% critical value when first difference is taken. That is time series on GR and IR are non-stationary in level forms but stationary in first difference forms. If a time series is stationary at first difference, it is integrated of order one $I(1)$. Thus, GR and IR are separately integrated of order one, $I(1)$. Since two variables are integrated in the same order, we can determine co-integration among the variables to show if there is a long run and stable relationship among the variables.

4. Co-integration Test

Johansen co-integration test is used to determine if the long-run equilibrium relationships exist between the variables such as GR and IR. Results of this test are presented in Table 2. The theory suggests that GR and IR should be co-integrated. The Johansen co-integration test is conducted by using 1 to 1 lag-which indicates that 1 lagged terms beginning with a lag of one period. The first line of Table 2 tests the null hypothesis that there are no co-integration relationship among the variables GR and IR ($r = 0$).

Since likelihood ratio value is larger than the critical value at 5% critical value, the null hypothesis of no co-integration can be rejected at 5% significance level, which indicates that, there are long run equilibrium relationships among the variables. The second line of Table 2 tests the null hypothesis that there is an only one co-integrating equations ($r = 1$). Since likelihood ratio value is less than the critical value both at 1% and 5% level of significance, the null hypothesis that $r = 1$ can be accepted. This indicates that there is only one co-integrating equation.

Table 2: Results for Johansen Co-integration Test (sample period 1984-85 to 2003-04)

Series: GR, IR Lags interval: 1 to 1				
Eigen value	Likelihood ratio	5 % critical value	1% critical value	Hypothesized no. of CE (S)
0.527290	16.36	15.41	20.04	None ($r = 0$)
0.147704	2.87	3.76	6.65	At most 1 ($r = 1$)
Likelihood Ratio tests indicates 1 cointegrating equation at 5% significance level.				
Normalized cointegrating coefficient: 1 cointegrating equations				
G 1.000000	IR 0.3121	(0.0548)*	(5.6897)**	C - 6.1108
Log likelihood - 42.3894				

* = standard error, ** = t-ratios. Note: Linear deterministic trend in the data is assumed.

The lower line of the Johansen cointegration test in Table 2 shows the normalized cointegration coefficient. This equation shows that the coefficient of IR has positive sign, which indicate that IR and GR are positively related to each other. The output of this cointegrating equation shows that during the entire sample period from 1984-85 to 2003-04, t-statistics of the coefficient of IR are statistically significant. This suggests that current year real GDP growth is positively related to the inflation of previous year. That is, an increase in previous year's inflation increases real economic growth in the next year.

5. Conclusion

Most of the macroeconomic variables are nonstationary. If a time series data is nonstationary, it will give misleading results. In this study, using ADF unit root test tests stationary properties of the data on inflation and economic growth. The test results shows that time series data on inflation and economic growth are nonstationary in level forms but stationary in first difference forms. Then, cointegration test is conducted by using the Johansen cointegration test.

The cointegration results show that inflation is positively related to economic growth in Bangladesh. But, the international lending agencies are pressurizing Bangladesh to reduce inflation for her economic growth. They argue that inflation is harmful for growth. But this paper finds that moderate inflation is helpful for GDP growth. This gives an important policy implication for Bangladesh economy. Hence, moderate inflation as a means to increase economic growth is suggested.

References

- Asian Development Bank (2004), *Key Indicators 2004* and 2002 editions, Manila.
- Barro, R. (1996), *Determinants of Economic Growth: A Cross Country Empirical Study*, NBER Working Paper 5698, National Bureau of Economic Research, Cambridge, MA.
- Bruno, M. and Easterly, W. (1998), "Inflation Crises and Long-run growth" *Journal of Monetary Economics*, vol. 41, pp. 3-26.
- De Gregorio, J. (1993), "Inflation, Taxation, and Long-Run Growth", *Journal of Monetary Economics*, vol. 31, pp. 271-98.
- Enders, W (1995), *Applied Econometric Time Series*, John Wiley & Sons, Chichester.
- Fischer, Stanley (1993), "The Role of Macroeconomic Factors in Growth" *Journal of Monetary Economics*, vol. 32, pp. 485-512.
- Gujarati, Damodar N. (2003), *Basic Econometrics*, 4th edition, New York: McGraw-Hill.
- Islam, Saiful (2005), "Macro Stability and Economic Growth in Bangladesh", *Bangladesh Economic Studies*, vol. 11, July 2005, pp. 107-18.
- Johansen, S. (1988), "Statistical Analysis of Cointegration Vectors," *Journal of Economic Dynamics and Control*, vol.12, pp. 231-54.
- Mallik, Girijasankar and Chowdhury, Anis (2001), "Inflation and Economic Growth: Evidence from Four South Asian Countries" *Asia-Pacific Development Journal*, vol. 8, no.1, pp. 123-35.
- Sarel, M. (1996), "Nonlinear Effects of Inflation on Economic Growth", *IMF Staff Papers*, vol. 43, pp.199-215.
- Smyth, D. J. (1992), "Inflation and the Growth Rate in the United States' Natural Output", *Applied Economics*, vol. 24, pp. 567-70.
- Smyth, D. J. (1995), "Inflation and Total Factor Productivity in Germany," *Weltwirtschaftliches Archiv*, vol.131, pp. 403-5.

JOB MARKET SHARE OF THE STUDENTS OF THE BUSINESS STUDIES FACULTY OF RAJSHAHI UNIVERSITY: AN EMPIRICAL STUDY

Farzana Quoquab Binte Habib*

Abstract : Students who get admitted to the Faculty of Business Studies of the University of Rajshahi were in the hope of getting a good job. But the present study revealed the fact that they failed to get their expected share in the job market of the country. The reasons identified for this undesirable situation include lack of proper orientation about the job market, lack of competence in computer handling, lack of adequate knowledge in English, absence of a well devised career plan and shortage of current books and periodicals coupled with non availability of adequate internship programme. It was also revealed that most of the students had to wait for 3 years to get a job. Lack of supportive training and inadequate facilities to attain a good academic result also contributed to the dismal picture. Some important and useful short and long-term recommendations are suggested to improve the existing unsatisfactory situation.

Introduction

In every session, around 500 students are enrolled in the Departments of Management, Marketing, Accounting, Finance and Banking of the Faculty of Business Studies of the University of Rajshahi with the expectation of getting employed after the completion of the study. How far their dream was translated into reality is a question often asked but rarely answered. Without a thorough investigation and survey as well as following a technically sound methodology no meaningful conclusion can be drawn about the correlation of higher education and desired job opportunity. The exact position of the qualified students of the faculty vis-à-vis their share in the job market is yet to be known. The current study is an attempt to throw some light in this respect and also find out the reasons why the qualified students failed to get an adequate share in the job market. The study attempts to have an insight in to the situation prevailing both in the educational area and in the job market.

Literature Review

Lee Ann Bernier (1991) discussed about career planning in her article "Career Planning_ Easy as 1,2,3,4". In that article why one should make a career planning and how one could do that are discussed in detail. But there was no mention about how the degrees obtained from a university can be used or why a degree from a university should be obtained for the purpose. Joanne Murray (1997) discussed how one should set goals for the future. In her article "Your Guide to Selecting Goals" she

* Lecturer in Marketing, Asian University of Bangladesh, Rajshahi Campus, Bangladesh.

discussed about the steps of setting a goal and the requirements for the purpose. In this case the importance of the organization/institution is accounted for. But as the article is written for the students of the U.S.A. guidance forwarded are not fully applicable to Bangladeshi scenario. Moreover, in the article the need for university education is not stressed. Thus the students of Bangladeshi universities will not get any guidance from the article. In his article "The Road to Success" Thomas Mann (1986) discussed in details the stages, the requirements and the rules to be followed for the purpose. This is a brilliant exposition and fits very much the students of the U.S.A. David Barrows (1997) in his article "The road to Success" discussed in details about how to develop a successful career. But because of the socio-economic conditions prevailing in Bangladesh and the scenario present in the job market Bangladeshi students with a MBA cannot follow the prescriptions made in the article fully. Although the articles are written scientifically and provide food for thought for the students still they lack some fine points of the problems prevailing in the job market in a developing country like Bangladesh.

Moreover, throughout the world women are steadily entering in the job market. But they are facing numerous challenges and obstacles. Bangladesh is no exception to that. In this respect Carmela C. Maresca (1987) in her book "Careers in Marketing: A Woman's Guide" has discussed how women can take part in the job market, especially in the field of marketing. But the suggestions are made from the point of view of a westerner.

The career status of the university students who have qualified from Bangladeshi universities, especially from a university of the northern region of the country is yet to be known. The present study attempts to find out the status of the students of the University of Rajshahi with BBA and MBA degrees in the job market. Efforts were also made to know whether they had a career planning or not and what specific problems did they face in this respect.

Objectives of the Study

The focal point of the study is to identify the reasons whether the students of the Business Studies Faculty of Rajshahi University are not getting a good share in the job market of Bangladesh after completing their study. It also attempts to explore the unknown reasons why the students are failing to get employed even with a good degree. Furthermore, the study highlights the facts that help the students to get employment at different sectors of the economy. The study will focus on the students of the faculty of a particular university of the country although the university is the second oldest seat of higher education of the country and the only one of its kind in the northern part of Bangladesh.

Attempts have been made in the study to focus on the problems faced by the students and thereby help the policy planners and the employers to take appropriate measures so as to be careful about the increasing number of the unemployed educated youth.

The objectives of the present study are to know whether:

1. the students of the Business Studies Faculty of Rajshahi University got the job they wanted?
2. they had adequate training for the job they sought?
3. they encountered problems to enter into the job market?
4. they had any particular career planning for the purpose?

Methodology

The study was based mainly on primary data. Secondary data were used in a few cases. Personal observations and experience were used to conduct the study.

Data Collection

Primary data were collected using the questionnaire method.

3 sets of questionnaire were prepared for the study. These were:

Set 1 was prepared for the current students of the BBA and MBA of all the Departments under the Faculty of Business Studies.

Set 2 was prepared for the employed former students of the four departments under the Faculty (and passed from the departments during the last five years).

Set 3 was prepared for the unemployed students who passed from this faculty during the same period.

The questionnaires were pre tested and after due modification and correction they were used for the field study. Secondary data were collected from various sources like journals, Internet and office of the Controller of Examinations, Rajshahi University. The Dean of the Business Studies Faculty was also interviewed extensively. For theoretical aspects related to career planning some standard textbooks were consulted.

Sample Area

The population under the study was the students of the Business Studies Faculty of Rajshahi University. The Faculty consists of four departments. These are:

- i. The Department of Management
- ii. The Department of Accounting
- iii. The Department of Finance and Banking
- iv. The Department of Marketing

Students of these departments were the target people of the study. They were divided into 3 groups:

A. Current Student: Studying at present.

B. Employed Past Students: The study period for the respondents was last 5 years.

C. Unemployed Past Students: The study period for the particular respondents was last 5 years.

Sample Size

The sample of the study consists of 600 students of the last five-years.

- (i) From the current students of the Business Studies Faculty of Rajshahi University a sample of 200 students (100 MBA and 100 BBA) was selected.
- (ii) Another 200 respondents were selected from the employed category who passed from this university and are now employed in different areas of Bangladesh.
- (iii) Further 200 respondents were selected from the unemployed category who passed from the University and yet to get any job.

Data Processing and Analysis

After collection of the filled up questionnaire they were scrutinized and classified. Answers were tabulated and analyzed statistically. The outcome of the analysis is presented in both tabular and text form.

Results and Findings

1. Job Expectations

From the analysis of the data it is observed that the aim of the majority of the students are to be the business executives of different public and private organizations. 36.67% of the respondents wanted to be business executives while 26.67% of the respondents preferred any type of government job. Teaching came third in the line, 20% of the respondents wanted to take teaching as their career. Choice of entrepreneurship as a career came fourth (13.33%) while miscellaneous category accounted for 3.33%. This is shown in the table below.

Table 1: Choice of Job (The current students and unemployed category)

Jobs	Preference (%) N=400
1. Business Executive	36.67
2. Public Service	26.67
3. Teaching	20.00
4. Entrepreneur	13.33
5. Others	03.33
Total	100%

2. Job Market Share

The graduate students of this university who are already employed or yet to be employed were asked to point out their major competitors in the job market i.e. they were asked to assess their share in the job market since the beginning of the new millennium. Majority of the respondents told that the graduates of the university of Dhaka (including the graduates of IBA) bagged the lion's share of the jobs available in the market. They were also of the opinion that although the share of the graduates of the leading private universities is less than 10% they actually occupying the highly salaried jobs in the well known business enterprises in the country.

3. Success in Getting the Preferred Job

The respondents who are now employed were asked whether they got the job they liked or not. More than a quarter of the respondents (26.67%) replied that they got the job according to their preference while 73.33% answered in the negative. This shows that majority of the Business Studies students of this university could not do well in the job market and had to be satisfied with whatever they got.

4. Supportive Training for the Job Market

The employed and unemployed students were asked whether they had adequate supportive training to compete in the job market successfully. The training would normally include capability of writing and speaking fluently in English and handling

computer efficiently. Out of the total interviewees, 31.33% replied that they personally managed to have such types of training to develop their skills as these are essential to get a good job. But the majority (68.67%) told that they did not have such training at all. The university authority did not provide these training even against a fee. Moreover, the financial condition of many of the respondents of this category was not sound enough to have the training from any reputed commercial coaching centre of Dhaka.

5. Inadequate Facilities Led to Bad Result

To get a good job good result is of prime necessity. Various factors contribute to attain a good result. Students were asked in details in this aspect. The answers were varied and the highest number of respondents mentioned about the lack of adequate supply of quality current books and journals. 23.33% of the respondents told that they could do better if they could have the newly written books and current journals. They did not find books and journals up to their expectations in the university library but other important libraries of the Rajshahi city also failed to satisfy the requirements of these inquisitive students.

Of the respondents 21.11% were of the opinion that the traditional mode of teaching i.e., lecture method could not satisfy their thirst of knowledge. They did not find the system interesting. Thus they failed to do better in the examination and ultimately suffered in getting a good job.

More than 12% of the respondents told that the standard of the course curriculum of BBA and MBA was not up to the mark. They said that the modern methods of teaching created interest among the students and thus they got a good grade. If the course contents were updated and meet the demand of the day it could help the students to get a good job.

If the medium of instructions for the BBA and/or MBA level were English that would have given the students a fair chance to be employed (11.11%).

Many of the respondents opined that lack of adequate practical exercise like internship, industrial tours, extensive fieldwork etc. are responsible for their failure in getting a good class. This resulted not getting a job in the long run (11.11%).

Interviewees (7.78%) also said that inability of the teachers to make themselves understood the course contents was also responsible for poor perception of the subject and, hence, unsatisfactory result was the outcome in the examination.

A few students (2.22%) mentioned that they had no accommodation in the student's halls of residence of the university. So they could not show better performance in their result. These findings are presented in the table below:

Table 2: Problems Faced by the Students

Answers	% (N= 600)
1. Inadequate books and journals	23.33
2. Traditional and boring teaching modes	21.11
3. Inadequate and ineffective course curriculum	12.22
4. English not as medium of instruction	11.11
5. Insufficient practical work	11.11
6. Inability to make the course content understood	7.78
7. Negligence of teachers toward students	6.67
8. Session jam	4.44
9. Accommodation problem	2.22
Total	100%

6. Time Gap Between First Job and Completion of the Study

Students graduated and currently employed were asked how many years they had passed without any job after they obtained the last degree. The majority of the respondents told that they got their first job within 3 years after getting the degree (46.67%). 20% got the job within 2 years and 16.67% got the job within one year. Only 10% of the respondents got the job within 6 months and 6.67% within 2 months after passing the final examinations. This can be seen from Table 4.

Table 3: Time Gap to Get a Job.

Answers	% (N = 200)
1. About three years	46.67
2. About two years	20.00
3. About one years	16.67
4. About six months	10.00
5. About two months	06.67
Total	100%

7. Reasons for Not Getting a Good Job

The unemployed respondents were asked to identify the reasons of their failure in getting the desired job. About 27% of them told that lack of command in English is the prime reason while about 19% told that lack of adequate knowledge in computer is also the reason. A sizeable number of respondents (16.67%) were of the opinion that lack of adequate experience in the practical field (like internship) was also an important reason. Some of them (10%) had no financial support to supply the bribe demanded. Lack of political influence was the reason for 10% respondent whereas the number is almost the same who identified lack of support of influential persons as the main obstacle. One-tenth of the respondents told that lack of good result was the serious bottleneck. This is shown in the Table below.

Table 4: Reasons for Not Getting a Good Job

Answers	% (N =200)
1. Lack of adequate efficiency in English	26.67
2. Lack of adequate skill in computer	18.33
3. Lack of adequate experience in practical field	16.67
4. Lack of political influence	10.00
5. Lack of financial ability to give bribe	10.00
6. Lack of good result	10.00
7. Lack of the support of influential persons	08.93
Total	100%

8. Job Satisfaction of the Respondents

The respondents were asked about their satisfaction in the present job. They got the job after a very tough competition and hence they might stick to the present job. The majority of the respondents (56.67%) told that they were not happy with their present status and job. A considerable number of them told that they would switch to a better job and position by improving their skills through personal efforts by attending coaching centres at night shifts. Of the respondents, 43.33% told that they were happy with their present job.

9. Particular Career Plan that Secured the Job

The ex-students were asked whether they had any particular career plan that helped them in getting the present job. Unfortunately, the majority of the respondents (76.67%) told that they had no career plan at all. Only less than a quarter of them (23.33%) had a career plan but could not successfully attained. Only 11.6% of the respondents had pursued a particular career plan and most of them are employed but had to switch from their earlier job to get the new one that suited their plan.

Employers' View

Employers are the right evaluators of the graduates of different universities. But it is difficult to get a quantitative assessment from them. But they can make qualitative evaluation about their employees. So efforts were made to get their opinions about their employees. Owners of some large private commercial firms of the country as well as a few personnel managers of the multinational companies were requested to give their opinion about the quality of the graduates of the University of Rajshahi and if they can identify problems, if there is any, in this respect. Majority of them are of the opinion that poor knowledge of English and lack of adequate skill in computer handling are the two major problems with almost all the graduates of north Bengal. These graduates are also shy and cannot present themselves in a convincing manner but once they are appointed many of them improved quite satisfactorily.

Discussion

From the study it can be seen that majority of the respondents had no particular career objective and career planning which might have helped them to get their desired job. Of the students who are employed, about fifty percent of them had particular career objective but the unemployed respondents had very little. It is accepted by every one that without any career goal none can make his dream come true. Fortunately the new generation is much more conscious than their predecessors.

The study shows that there were students who had a particular career goal and an effective planning and could reach their desired goal. There was another small group who had a particular career ambition but due to infrastructural problems and lack of adequate logistic support they could not be successful.

This study reveals that majority of the students choose Rajshahi University because either they did not get chance in any other universities or were not financially solvent to bear the educational cost in the capital city. Almost fifty percent ex-students who are unemployed told that they could get a job if they could be the students of Dhaka University. They were also of the opinion that the educational environment of the university was not up to the mark because of session jam and student unrest during their period of study.

Most of the unemployed respondents mentioned that the students of the IBA of Dhaka University are the main competitors in the job market. They are very competent. The majority students of Rajshahi University did not have any kind of special training in computer knowledge and competency in English, which could make them more competitive in the job market.

Findings of the study showed that ineffective internship is an important bottleneck to get a good job while political influence and bribe culture went against the students. It is also observed that the majority of the respondents did not have

their desired job. Only a few of them were lucky one to get satisfactory jobs. Moreover, most of them got their job after 3 years of completion of the study.

Thus the study represents that for a particular career a good planning is essential. Moreover, logistic support and good educational environment are also important factors to get the due share in the job market.

Policy Recommendations

The demand for qualified and trained personnel in the field of business is expanding in the country gradually. The Business Studies Faculty of the University of Rajshahi has a good potential to supply trained manpower. Unfortunately the students of the faculty did not have their due share in the job market of the country. From the study it is observed that students face a lot of problems, some are within their control and some are beyond their control, which should properly be attended to and be solved. In the following paragraphs some specific recommendations are advanced to minimize these problems.

At the very beginning of the BBA classes, students should be given adequate information as to what future prospects lay ahead of them and what efforts should they make to attain those prospects. Students should be made fully aware of their tasks and responsibilities and the ways and means they should adopt to achieve a successful career.

The authority may take necessary steps to teach the students in a proper manner so that the students could explore themselves in correct directions. They need to learn how to contact employers at home and abroad through Internet media.

The students should be advised periodically to review their success rate and if they found themselves lagging behind they should be given appropriate treatment to overcome the problems.

For better career opportunity the students must be conversant with computer handling/operation. They should have adequate knowledge in English and have the capability of expressing themselves in adequate way. Opportunities should be made available to the students by the University authority for this purpose.

In the classroom the course teachers may create awareness among the students about the need for career planning. Students may be told about opportunities, the problems they might face and activities they must undertake to overcome those problems. With the continuous monitoring by the teachers of the Departments students could improve their career planning and could also strive for better opportunities. As most of the students of the northern part of Bangladesh are almost unaware of the need for career planning they may be given orientation courses wherefrom they would set their goal and work hard to reach the target.

Opportunities should be created for the students for effective internship program. Internship of a minimum of 3 months duration could be of some use, while 9-12 months internship would really make the difference. Unfortunately, facilities for such program are not available to the students of the Faculty. This makes the real difference of students in the job market. Students of other universities of the same Faculty are quite different from the students of this university because of the facility they receive in the metro cities of Dhaka, Chittagong and Khulna. Although the number of large commercial firms is limited in this metropolitan city in comparison with others, their doors are not always open to the students. The situation may be improved through fruitful dialogue between the authorities of the Rajshahi Chamber of Commerce and Industries and Rajshahi University.

Moreover, the faculty may invite business delegates and renowned persons to share their valuable experiences and expertise with the faculty students and can make a bridge between the students and the business executives of different leading companies which might lead the students to have greater access in the local and foreign job market.

Conclusion

Getting employed according to the career planning is always a pleasant experience. But it does rarely happen. In the present study it is observed that the majority of the students of Business Studies Faculty of Rajshahi University had little career planning and, therefore, could not claim a rightful share in the job market. Even those who had got a job it was not satisfactory to them while many of the students are yet to be employed. When it was asked to the students they placed many reasons for their present condition of which some were really crucial.

The crux of the problem lies in the fact that the majority of the students had neither any ambition nor any career plan. Moreover, the situation prevailing in Rajshahi is not congenial for their appropriate training and adequate development. To overcome the situation continuous efforts should be made by the authority of Rajshahi University so that the students might have a clear vision about their future.

Bangladesh with a limited resource potential cannot offer jobs to every body. But persons with good skills and expertise have the opportunity to find jobs. Problems faced by the students have already been discussed in detail. Attention should be given for their timely solution. Otherwise the students will continue to suffer and unemployment problem will be acute.

The policy recommendations may be given due consideration by the appropriate authority. Some recommendations may require extra effort on the part of the students while some may demand careful attention of the policy planners in the field of education and business. It is expected that if the recommendations are materialized and students can draw up an effective career plan there will be more employment, more job satisfaction and lesser unhappiness and uncertainty.

Reference

- Barrows, David (1997); "The Road to Success"
<http://www.cs.cf.ac.uk/Dave/melaughlin/art/evolution.html>
- Bernier, Lee Ann (1997); "Career Planning_ Easy as 1,2,3,4"
<http://www.italway.it/morrone/jml-evolution/html>
- Mann, Thomas (1986); "Get Where You Want to Be"
<http://www.goal.plc.uk/interim/golar.pdf>
- Maresca, Carmela C. (1983); *Careers in Marketing: A Woman's Guide*, 4th edition, Prentice-Hall, Inc., Englewood Cliffs, New jersey; p.77, 85, 110.
- Murray, Janne (1997); "Your Guide to Setting Goals"
<http://www.bbc world.com>.
- Wesson, Tom (1978); "Career Development Portfolio Planning Guide"
<http://www.cs.cf.ac.uk/Dave/melaughlin/art/dev.html>

HUMAN RESOURCE DEVELOPMENT THROUGH COMPENSATION OF THE EMPLOYEES IN BANGLADESH: A STUDY ON SOME PRIVATE MANUFACTURING INDUSTRIES

Most. Hasna Hena*
Sheikh Ashiqurrahman Prince**

Abstract: Organizations receive four basic kinds of resources from their environments: human, monetary, physical and information. Amongst them human resource is very important. For, all the activities of an enterprise are initiated & determined by the human resources. Only a few studies have been conducted on human resource development through compensation of the employees in Bangladesh especially on private sector industries. This article is an attempt in this direction. Human resource development is made by giving appropriate salary and wages, by giving financial and non-financial incentives and also by giving fringe benefits to the employees of the private sector. There should be some fixed pay scales and leave rules for keeping the morale of the employees high.

1.0. Introduction

Organizations receive four basic kinds of resources from their environments. These are:¹ human, monetary, physical and information. Human resource includes managerial talent and labour. The people do the work (through utilizing other resources) and also provide the creativity that sustains operations. All the activities of any enterprise are initiated and determined by the persons who make up that institution. Plants, offices, computers, automatic equipment, and all else that a modern firm uses are unproductive except human effort and direction. Human beings design or order the equipment; they decide where and how to use computer; they modernize or fail to modernize the technology employed; they secure the capital needed; and decide the accounting and financial procedures to be used. Every aspect of a firm's activities is determined by competence, motivation and general effectiveness of its human organization.² Human element is not only important but also the most difficult element because³ "men are dynamic beings, having hopes and emotions, affections and aspirations, opinions and traditions and respond in various

* Dr. Most. Hasna Hena, Assistant Professor, Department of Management, Rajshahi University

** Research Fellow, North East Wales Institute of Higher Education, Wales University, U.K.

¹Richy W. Griffin, *Management* (Boston: Houghton Mifflin Co, 1987), p. 8.

²Likert Rensis, *The Human Organization: Its Management and Value* (New York: McGraw Hill Book Co., 1967), p.1.

³M.V. Pylee, and Simon A. George, *Industrial Relations and Personnel Management* (New Delhi: S. Chand & Co., 1995), p. 11.

ways according to treatment". Human Resource Management⁴ is concerned with effective management of people at work and examines what can and should be done with a view to making working people more productive and satisfied.⁵ The terms personnel management, employee relations, industrial relations, personnel administration and human resource management (HRM) are used interchangeably, but the term HRM is the latest among these terms. HRM reflects the increased concern both society and organizations have for people.⁶ HRM is one of the different areas of general management. The other areas are marketing management, production management, management accounting and financial management. HRM is required in each of these different areas of management because a manager irrespective of the departments deals with human beings and gets his job done by and with people.⁷ Lawrence A. Appley, former President of the American Management Association stresses that management is the development of people rather than the direction of things and in his view,⁸ "Management and Personnel Administration are one and the same. They should never be separated. Management is Personnel Administration."

However, the first formal practices of human resource management were developed after the Industrial Revolution.⁹ The rise of unions, the development of scientific management, the emergence of industrial psychology, the development of human relations movement, the concern of the Government and their intervention regarding working people shaped the practices of HRM and contributed towards its growth. But HRM was considered to be concerned only with blue-collar or operating employees until 1960s. Peter Drucker, a noted Management Scholar and Consultant, in a statement regarding HRM commented that the job of human resource was,¹⁰ "partly a file clerk's job, partly a housekeeping job, partly a social worker's job, and partly fire fighting, heading off union trouble". This shows the blue-collar orientation of the then HRM functions. Now-a-days, work has become more dynamic and varied.

⁴B. Flippo Edwin has summed up the functions of human resource management in the following sentence: "Personnel Management is the planning, Organizing, directing, and controlling of the procurement, development, compensation, integration, maintenance and separation of human resources to the end that individual, organizational and societal objectives are accomplished". Here Flippo has defined procurement, development, compensation, integration, maintenance and separation in following ways: Procurement is concerned with the "determination of human resource requirements, their recruitment, selection and placement", development includes "operative, managerial and organization development", compensation deals with the adequate and equitable remuneration of personnel for their contributions to organizational objectives", integration tries "to effect a reasonable reconciliation of individual, societal, and organizational interests" maintenance is concerned with the maintenance of the physical condition of the employee and separation includes "retirement, layoff, out-placement and discharge of employees." [B. Flippo Edwin, *Personnel Management*, (New York: McGraw Hill Book Company, 1984), pp. 5-7.]

⁵John M. Ivancevich, *Human Resource Management* (Boston: Irwin/ McGraw – Hill, 1998), p. 1.

⁶*Ibid.*, p. 5.

⁷Rustom S. Davar, *Personnel Management and Industrial Relations in India* (New Delhi: S. Chand & Sons, 1976), p. 1.

⁸Lawrence A. Appley, *Management in Action* (New York: American Management Association, 1956), p. 4.

⁹Raymond A. Noe, et.al., *Human Resource Management Gaining a Competitive Advantage* (Boston: Irwin/McGraw Hill, 1996), p. 4.

¹⁰Fred K. Foulkes, "The expanding Role of the Personnel Function", *Harvard Business Review*, March April, 1975, pp. 71-72.

Changing technologies and shortened product life cycles, prompt changes in the tasks required for producing goods and the skills necessary to conduct those tasks. For this, employers are trying to obtain more flexible employees, able to learn new skills as work requirements change. Today's workers have higher expectations from their jobs—they want challenging jobs, wish to participate in decision making and have a desire to share in the financial gains achieved by the organization. A number of demographic changes such as women's increased participation in the workforce, dual-career families, single parent families, social and cultural changes are taking place and they are affecting the workforce. Thus, employers can no longer afford to see workers as interchangeable economic units. With the change of the nature of the work and the workers, organizations are also undergoing changes. Government regulations on the employment relationships, economic competition and cooperation on a global scale and a number of other factors have forced these changes. All these developments have made the effective management of human resource even more important and more complex.¹¹ Today, it is difficult to imagine a successful organization without efficient HRM programs and activities.¹²

A number of studies on various activities of HRM have been conducted in Bangladesh. However, most of them are not very comprehensive and covers only a part of the total HRM activities. Besides, very few of them have dealt with the local private manufacturing industries especially on compensation of the employees. A brief review of the studies conducted in Bangladesh is given below:

Habibullah¹⁴ conducted a study on the skill and competence level of the managerial people, the motivation of the managerial people to use the possessed skills and competences for raising performance effectiveness of the industrial enterprises in Bangladesh and also attempted to determine the relationship between motivation and need satisfaction components. Rahman¹⁵ explained the significance of financial incentive as a motivating force in increasing the productivity and focused on its significance in Bangladesh. Ahmad¹⁶ described the trade union movements in this region for different time periods and also summed up the labour movement after the emergence of People's Republic of Bangladesh on the 16th of December, 1971. Alam¹⁷ critically discussed the prevailing performance appraisal system of the Bangladesh Bureaucracy. Afza¹⁷ assessed the role of training as one of the factors of performance development and showed the usefulness of extensive use of training facilities to improve the working performance of the personnel work in the industries in Bangladesh. Khalily¹⁸ ascertained the socio-economic conditions of industrial workers in Bangladesh, evaluated the existing social security measures and assessed

¹¹ George T. Milkovich, and John W. Boudreau, *Personnel/ Human Resource Management - A Diagnostic Approach* (New Delhi: S. Chand & sons, 1996), p. 4.

¹² Ivancevich, John M. *op. cit.*, p. 7.

¹⁴ M. Habibullah, *Motivation Mix*. (Dhaka: Bureau of Economic Research D. U., 1974). p. 15.

¹⁵ A. H. M Habibur Rahma, "Financial Incentive as a Motivating Tool", *The Dacca University Studies*, Vol, XXIII. Part- A, 1975, pp. 138-143.

¹⁶ Kamruddin Ahmad, *Labour Movement in Bangladesh* (Dhaka: University Press Ltd., 1978), p. 104.

¹⁷ G. M. Shahidul Alam, "Reflections on Performance Appraisal: The Way it works in the Bureaucracy of Bangladesh", *The Dacca University Studies*, Vol. XXVII Part-A, 1977, pp 58-66.

¹⁷ Afza Mainuddin "Role of Training in Industrial Performance Development with Reference to the Situation in Bangladesh", *The Dacca University Studies*, Vol. XXVII, Part-A, 1978, pp. 107-117.

¹⁸ M. A. Baqui Khalily, *Security of Industrial Labourers in Bangladesh*. (Dhaka: Bureau of Business Research, Dacca University, 1980), p. 15.

the potentiality of introducing industrial life insurance as a tool to their security. Das¹⁹ studied the trend of work-stoppages and their effects in different industries located in different regions of Bangladesh, relationship of disputes with real wages, cost of living and productivity. This study gave general focus on the trend of work-stoppages and their effects in different industries. Bhattacharjee²⁰ reviewed the trend of labour policies and their impact on the development of welfare system of public enterprises, foreign and local firms in Bangladesh. Bhattacharjee²¹ revealed the drawbacks of industrial dispute settlement system in Bangladesh and suggested the ways to improve it. However, he treated the industries sector generally without mentioning its ownership. Rahman²² critically evaluated a few aspects of the training of personnel in commercial banks and suggested measures to improve the training of personnel engaged in commercial banks of Bangladesh. Mannan²³ conducted a case study in a large nationalized industrial enterprise to reveal the demand for participation among industrial workers. Quddus, et.al.²⁴ conducted a survey on jute and textile industries to identify the causes of strikes and lockouts in the industry and suggested remedial measures for minimizing those causes but did not analyze this issue separately in case of local private manufacturing industries. Bhattacharjee²⁵ examined the prevailing concepts of collective bargaining with its rationale in the context of unique socio-economic-political and cultural environment, identified factors influencing the same and analyzed its various dimensions with some common constraints on its application in selected countries of Asia including Bangladesh. Mannan²⁶ examined intensively the functioning of the vigilance committee, a participative forum in an enterprise under the Bangladesh Textile Mills Corporation and discerned the impact of the participative management scheme on the overall organizational performance. Siddique²⁷ focused on the practice of performance appraisal system for executives in nationalized industrial sector, national private sector industries, multi-national corporations and government bureaucracy, reasons for dissatisfaction among executives of these various sectors, objectives of executive performance appraisal, and suggestions for improving the existing performance appraisal system by the executives of these organizations. Siddique²⁸ observed certain damaging effects of salary & compensation of different groups of people in Bangladesh between 1929 and

¹⁹Jagadish Chandra Sukla Das, "Work-stoppages and Their Effects on the Economy of Bangladesh" *The Dacca University Studies*, Part-2 3(i), 1981, pp. 31-48.

²⁰Durgadas Bhattacharjee, "The Trend of Labour Policies and Their Impact on Labour Welfare Management in Bangladesh" *The Dacca University Studies*, Part-c 3(i), 1982, pp. 69-86.

²¹Durgadas Bhattacharjee, "The Industrial Dispute Settlement System and its Operational Effectiveness in Bangladesh", *The Dhaka University Studies*, Part-C 3(2), 1982, pp. 73-98

²²Md. Ataur Rahman,, "Training of Personnel in Commercial Banks of Bangladesh: A Few Aspects", *The Dhaka University Studies*, Part-C, 3(2), 1983, pp. 127-35.

²³Md. Abdul Mannan, "Demand for Participation among Industrial Workers: A Case Study of an Industrial Enterprise in Bangladesh", *The Dhaka University Studies*, Part-C, 4(1), 1983, pp. 1-15.

²⁴M. A. Quddus et al., "Labour Management Relations in Bangladesh: A Survey in Jute and Textile Industries", *The Dhaka University Studies*, Part-C, 4(1), 1983, pp. 65-77.

²⁵Durgadas Bhattacharjee, "Dimensions of Collective Bargaining Practices: Reflections on Asian Experiences", *The Dhaka University Studies*, Part-C, 4(2) 1983, pp1-31.

²⁶M.A. Mannan, "Worker Participation in Industry: Experiences of Cotton Textile Industry in Bangladesh", *The Dhaka University Studies*, Part-C, 5(1), 1984, pp 21-47.

²⁷Abu Hossain Siddique, "Performance Appraisal for Executives and Its Relation to Compensation", *The Dhaka University Studies*, Part-C, 5(2), 1984, pp.39-54.

²⁸Abu Hossain Siddique, "Compression of Salary Structures of Higher Level Executives in Bangladesh", *The Dhaka University Studies*, Part-C, 6(1), 1985, pp. 111-115.

1979. Bhattacharjee²⁹ examined some theories of industrial unrest, focused on the dynamics of unrest in some selected Asian Countries including Bangladesh. Siddique³⁰ discussed the evolution of fringe benefits as a compensation device and its importance in the productivity of employees, explored the practices of fringe benefits in the government bureaucracy, nationalized industrial sector, private industries and multi-national corporations in Bangladesh and also showed the costs of those in relation to total compensation of the different levels of executives in each sector. Bhattecharjee³¹ reviewed the wage policies, dynamics of wages in the industrial sector in general and minimum wages in the public sector enterprises of Bangladesh in particular. Habibullah³² gave emphasis on training-need-assessment in the organizations of Bangladesh to make training productive and to increase the return from investment in the training programs and here the author provided a general focus on training need assessment in the organizations. Chowdhury³³ made a critical appreciation of different available theories of absenteeism and focused on the nature of absenteeism among workers in Bangladesh and also suggested some measures to reduce absenteeism. Akkas³⁴ identified some characteristics of a sound promotion policy on the basis of available literature and studied existing promotion system of the nationalized commercial banks and also examined views of the respondent employees in this regard. The study focused only on the existing promotion system of the nationalized commercial banks. Khan³⁵ examined the effectiveness of labour courts in dealing with a sample of public sector industrial disputes in relation to certain expressed and implied goals of industrial relation laws of Bangladesh. Hossain³⁶ identified the practices of human resource management and strategic planning among the non-profit organizations of Bangladesh. Huq³⁷ highlighted the strategies for human resource development taken so far in Bangladesh, achievement in this area and suggested some measures for minimizing mismatch between demand for and supply of educated manpower in the job market. Rahman³⁸ prescribed a

²⁹Durgadas Bhattacharjee, "Industrial Unrest in South Asian Region: A Focus on Theories and Trends", *The Dhaka University Studies*, Part-C, 6(2), 1985, pp. 27-41.

³⁰Abu Hossain Siddique, "Fringe Benefits for Executives: A Study of the Practices in Industry and Government in Bangladesh", *The Dhaka University Studies*, Part-C, 7(1), 1985. pp. 27-42.

³¹Durgadas Bhattacharjee, "Industrial Workers' Wages in Bangladesh: An Analysis of Criteria, Policies and Dynamics", *The Dhaka University Studies*, Part-C 7(1)1986, pp. 133-149.

³²M. Habibullah, "Relevance of Training and Its Investment Worth" *The Dhaka University Studies*, Part-C, 7(2), 1986, pp. 27-36.

³³A. Mannan Choudhury, "Towards a Unified Theory of Absenteeism", *The Dhaka University Studies*, Part-C Vol. 11(1), 1990, pp 105-118.

³⁴Md. Ali Abbas Khan and Ali Akkas, "An Appraisal of the Promotion System in the Nationalized Commercial Banks in Bangladesh", *The Dhaka University Studies*, Part-C, Vol. 11(1)1990, pp. 139-154.

³⁵Ali Abbas Khan, "Effectiveness of Labour Courts in Adjudicating Public Sector Industrial Disputes in Bangladesh", *The Dhaka University Studies*, Part-C Vol. 11(2), 1990, pp. 41-57.

³⁶Anwar Hossain, "Human Resource Management and Strategic Planning for Non-Profit Organizations", *Journal of Business Administration*, University of Dhaka Vol. 18 No. 172, 1992, pp. 51-59.

³⁷A.T.A. Zahurul Huq, "Human Resource Development Planning in Bangladesh Employment and Manpower Implications of Industrial Restructuring", *Journal of Business Administration*, University of Dhaka, Vol. 19, No. 1&2, 1993, pp. 1-19.

³⁸Mustafa A. Rahman, "Labour Management and Productivity for Development, Management of Change in South Asia", Paper Presented at the Third Academic Conference of

mutually beneficial model of labour-management relation conducive to improved productivity and sustained development in Bangladesh. Hossain and Ahmed³⁹ focused on the practice of human resource planning in CARE (Cooperation for American Relief Everywhere), which is a non-profit organization. Mohiuddin and Alam⁴⁰ dealt with the compensation system of private commercial banks in Bangladesh with special emphasis on salary structure.

Today, there is a greater societal consensus regarding the role of private sector, which it can and should play in the economic development of Bangladesh. Also, the recent industrial development tempo in the country is led by the private sector. In Bangladesh, although we know that multinational corporations have an advantage of improved technology, markets and advanced imported management capability, yet there is a poor knowledge base regarding the human resource development practices in the various local private manufacturing industries of our country. So, it is urgently needed to bring to light the human resource development through proper compensation of the employees in the local private manufacturing industries of our country which may serve as a meaningful starting point for its development. This 'knowledge base' regarding the human resource development through proper compensation of the employees may help in making objective analysis of the same and, thus, incorporating necessary changes to cope with the current and future challenges in HRM. The present article is a modest attempt in this direction. The study has been carried out on some local private manufacturing enterprises. These enterprises belong to different nature and sizes of manufacturing industries in Bangladesh.

It is clear from the above review of literature that studies conducted on human resource development through proper compensation of the employees in Bangladesh especially on private manufacturing industries are not sufficient. So, it is worthwhile to conduct a study on "Human Resource Development Through Proper Compensation of the Employees In Bangladesh: A Study on Some Private Manufacturing Industries".

2.0. Rationale of the Study

The study is important for following reasons

1. Now a days, private sector has been called upon to play an important role in the economy of Bangladesh and manufacturing industries are considered as the engine of its growth. Today, it would be difficult to think of a successful organization without efficient HRM programs and activities. Since there is poor research base on the practices of HRM in local private manufacturing industries in Bangladesh, this research may serve as a meaningful starting point.
2. The employees' opinions and feelings towards the practices of HRM may influence the employers and human resource managers of the local private

Management Development Institutions in South Asia (AMDISA), February 4-7, 1994, Dhaka, Bangladesh, pp. 107-119.

³⁹Md. Zakir Hossain, & Faruq Ahmed. "Human Resource Planning (HRP) Practiced by the NGOs in Bangladesh: The CARE Experience", *Dhaka University Journal of Business Studies*, Vol XVII, No. 2 December 1996, pp. 207-227.

⁴⁰Muhammad Mohiuddin & Kazi Shariful Alam, "Compensation System of the Private Commercial Banks in Bangladesh", *Dhaka University Journal of Business Studies*. Vol. XVII, No. 1, June 1997, pp. 219-232.

manufacturing industries in Bangladesh in improving their present HRM practices.

3. The study will provide valuable teaching material to the faculty engaged in management education and training which is important in the wake of tremendous growth of management education in Bangladesh.

Here lies significance of the study.

3.0. Objectives of the Study

The main purpose of the study is to examine the steps that are being taken by the private manufacturing industries of Bangladesh to develop human resources through proper compensation of the employees. The specific objectives are:

1. To see the salary and wage policy adopted by the employers,
2. To find out the incentive policy of the employees adopted by the employers,
3. To examine the fringe benefits given by the employers to the employees, and
4. To suggest some policy measures for the overall improvement of human resource management of the private sector industries in Bangladesh.

4.0. Methodology of the Study

Here the authors shall deal with the methodological issues as under:

The study was confined to Chittagong City and its adjacent areas. The Chittagong City was selected as study area because Chittagong is now one the main centres of manufacturing industries of Bangladesh. Time, money and energy are other important considerations for such a decision. The study was limited to human resource development through proper compensation of the employees in Bangladesh of the sample enterprises up to 2003.

In order to select sample enterprises, a list of the companies (with information regarding years of production experience and number of employees of these companies) enlisted with Chittagong Stock Exchange limited was obtained and 10 enterprises were selected in such a way so that industries of different nature and sizes are represented in the sample enterprises.

The enterprises selected from various categories were as follows:

Large enterprises	- 10
Medium enterprises	- 10
Small Enterprises	- 10

Total	- 30
-------	------

The information collected in this study fell into two categories. (a) Factual data and for (b) Attitudinal data. In order to collect factual data regarding proper compensation of the employees in local private manufacturing enterprises in Bangladesh, 50 persons belonging to different positions were selected as under:

Respondents	
1. Top management	15
2. Mid Management	30
3. Lower Management	30
Total managerial people =	75
4. Workers	= 75
Grand Total	= 150

The study used both the primary and the secondary data. Various secondary sources of data include: published reports of the People's Republic of Bangladesh, the various documents of the planning commission, statistical year book of Bangladesh Bureau of Statistics, other books, reports and articles relevant to the topic of the study. Most of the data required for the study were collected from primary sources through interview Schedules.

In order to collect attitudinal data towards the common practices of compensation of the employees, two sets of interview - schedules were prepared: one was for three different levels of management and another for the workers. The researcher himself collected the required data.

All the collected data were edited, coded and classified by the researcher himself before making the analysis. The software package of SPSS was used for the purpose of analyzing data. Furthermore, appropriate tools of statistics were used for making analysis of the data. The final report was prepared by the author himself having consultation with the experts.

5.0. Compensation of the Employees

Compensation is what the employees get in exchange for their contribution to the organization.⁴¹ In other words, employee compensation includes all types of pay or rewards, which goes to the employees and arises from their employment.⁴² The practices relating to compensation have been discussed under the three main components of compensation.

1. Salary and wages;
2. Incentives; and
3. Fringe Benefits.

5.1. Salary and Wages

In popular usage, a distinction is made between the two terms 'wage' and 'salary'. The term 'wage' refers to payments of workers and the term 'salary' refers to payments of clerical, supervisory and managerial employees. In a broader sense, the term 'wage' refers to both 'wage and salary'. Salary and wages are basic compensation devices and the cost of many other elements in the compensation package is determined by salary/ wage.

5.1.1. Factors Affecting Salary and Wages

Although a considerable amounts of guess works and negotiations are involved in salary and wage determination, some factors have an important bearing on the final wage and salary decision. These are:

- Supply and demand for employee skills,
- Influence of labour organizations,
- The firm's ability to pay,
- Productivity of the firms,
- Cost of living; and
- Government regulation.

⁴¹William B. Werther, and Keith. Davis, *Human Resource and Personnel Management* (New York: McGraw Hill, 1993), p. 412.

⁴² Dary Dessler, *Human Resource Management* (New York: Mcgrow Hill, 1993) p. 421.

5.1.2. Determination of Salary and Wages in the Enterprises under Study:

All the enterprises under study consider factors such as minimum wage regulation, salary and wage of other organizations in the same industry (Although none of the enterprises conduct formal compensation survey, they do have some ideas about the salary and wage structure prevailing in the same industries), employer's capacity to pay, and employees' performance in determining salary and wages of the employees. Besides these factors, the entire medium and the large enterprises and 40% of the small enterprises have to consider the influence of labour unions in determining wage level. The interesting finding of the study is that no enterprise considers cost of living in determining salary and wages of the employees.

5.1.3. Basic Features of the Salary and Wages Systems in the Enterprises under study:

The distinguishing features of the salary and wages systems of the enterprises under study may be stated as follows:

- In all the enterprises under study it was observed that there are salary scales of managers but none follows them strictly for fixation of salary, annual increments, etc.
- Since the supply of junior and mid level managers is abundant, they have to accept the salary level offered by their employers. Although, the supply of the workers is also abundant yet they are organized (excepting 60% of the small enterprises) they can influence their wage level. The upper level managers also can influence the salary level due to their scarce supply.
- In all the enterprises under study, information regarding salary and wages are kept confidential at least from the side of the enterprises, though these are open secrets.

5.1.4. Equity and Job Evaluation

The employees are more concerned about intra organizational equity of wages and salary than inter organizational equity. Job evaluation is concerned with the concept of equity, which can be achieved by determining the relative worth of the jobs of an enterprise. The job evaluation may be done on a non-quantitative basis or on a quantitative basis. There are two methods under non-quantitative basis, these are (1) the simple ranking method; and (2) the job classification method. Under quantitative basis there are two methods: (1) the point system; and (2) the factor comparison method.

5.1.5. The practice of Job Evaluation in the Enterprises under Study

None of the enterprises under study goes for job evaluation.

5.2. Incentives of the Employees

The technique to increase base pay on improvement of performance is old and well established.⁴³ Incentive systems exist for almost every type of job from manual labour to managerial work. Incentives can be counted on the basis of individual performance or on the basis of performance of a work team, plant or even the entire

⁴³James. Lincoln, *Incentive Management* (Ohio: London Electric Co. 1969. Quoted in: George T. Milkovich and Kohn W. Boudreau, op.cit.), p. 755.

organization.⁴⁴ Incentives may broadly be categorized into two classes-financial and non-financial; The more common financial incentives are as follows:⁴⁵

- **Piece Rate:** Piece Rate is the oldest incentive plan. There are different variations in piece rate. Under one piece rate method, daily or weekly pay is determined by multiplying the output in units times the rate per unit which is called the straight piece rate. Under another piece rate method, the worker receives a given amount for each unit above standards he or she produces. A variation of the straight piece rate is the differential piece rate and in this plan the employer receives a smaller piece rate up to standard and then a higher piece rate above the standard.
- **The Standard Hour System:** In this system a standard time is fixed for completing a particular job. If the worker takes less time to complete that job, his wages are counted on the basis of standard time. For example, if the standard time for a particular job is 10 hours and the worker completes it within 8 hours, he will get wages for 10 hours.
- **Production Bonuses:** Under this system, the employees (both the workers and the managers) get bonus for achievement of production target.
- **Commissions:** Sales employees are often paid on a commission basis. Like the production workers, they usually receive a guaranteed base salary. Under some plans, they get a percentage of everything they sell. Under other plans, they receive rewards only for sales above a certain quota. Sometimes, sales employees get commissions for finding new customers and for making a certain number of sales calls. Under a few plans they receive commissions and no base salary. Individual systems of payment by results are not applicable to cases where several workers are required to do jointly a single operation and in these cases all the above mentioned individual incentives plans may be applied to groups of the employees.
- **Merit Raises:** Under this system, pay increases are given according to an evaluation of performance. These increases are usually decided by the employee's immediate supervisor often in conjunction with superiors.
- **Profit Sharing:** Under profit-sharing system, payment is related to the organizational performance and is paid in addition to ordinary wage or salary. Payment may be current or deferred. Profit sharing is different from wage incentives. Wage incentives are directly related to the output of industrial workers or groups of workers. Profit sharing, on the other hand, is related to the profits of the company.
- **Co-Partnership:** Under co-partnership scheme, the employees are allowed to buy shares in the company, thus owning a fractional part of the company and sharing in the firm's success.

⁴⁴ George T. Milkovich, and Kohn W. Boudreaw, op.cit., p. 12

⁴⁵William B. Werther, and Keith Davis, op.cit., pp. 446-449; Herbert G. Hicks and C. Ray Gultett, Modern Business Management-A Systems and Environmental Approach, McGraw-Hill Book Company, Auckland, 1988, p. 381; George T. Milkovich and Kohn W. Boudreau, op.cit., p. 766; and John Ivancevich, op.cit., p. 356

Suggestion Systems: Under suggestion systems, the employers obtain suggestion about improvements in organizational effectiveness and it includes some type of reward bases on the successful implementation of the idea. The employees' involvement is the key to successful suggestion systems and it can improve employee relations, foster high quality products, reduce costs and increase revenue. Usually all the employees including engineers, technicians, first-line supervisors and others are entitled to participate in the suggestion system. Essential elements for a successful suggestion system are: management committee, clear goals, designated administrator, structured award system, regular publicity and immediate response to each suggestion.

Non-Financial Incentives: Non-financial incentives include certificates, time off, vacations, increased responsibility, autonomy, opportunity to participate in the formulation of organization policies and plans, easy and ample access to higher management, good physical working condition and pleasant surroundings, etc. Generally, non-financial incentives are neither as strong nor as reliable as financial incentives but cumulatively, these are important.⁴⁶

5.2.1. Financial Incentives for the Employees in the Enterprises under study

All the enterprises under study provide production bonus, merit pay increases and attendance bonus both to the different levels of managers and workers, sales bonus to sales executives and promotion for outstanding performance to different levels of managers. Besides, all the large enterprises provide profit sharing to all employees. None of the enterprises covered by the study provide co-partnership and suggestion schemes.

5.2.2. Non-Financial Incentives for the Employees in the Enterprises under Study

All the enterprises under study use decorated office and its location, parking facility and congenial work enterprises as non-financial incentives for all top, mid and lower level managers. Besides, top and mid level managers are also provided with power to make independent decision, opportunity for public service as non-financial incentives.

5.3. Fringe Benefits

The term fringe benefits refer to a broad range of benefits and services that the employees get from their employees as compensation package.⁴⁷ Bangladesh National Pay Commission defined 'Fringe Benefit as "those facilities and benefits, which an employee gets from his employer in addition to his monthly or weekly remuneration for the job done by him. These include free accommodation or house rent allowance, free transport or conveyance allowance, washing allowance and the like".⁴⁸ So, fringe benefits are indirect compensation because these are usually offered as a condition of employment and are not directly related to performance. In

⁴⁶Robert E. Sibson, *Increasing Employee Productivity* AMACOM, New York, 1976, p. 176
Quoted in: Abu Hossain Siddique, "Executive Compensation Patterns in Industry and Government in Bangladesh", op.cit., p. 165.

⁴⁷William B. Werther, and Keith Davis,, op.cit., p. 465.

⁴⁸Report of the National Pay Commission of Bangladesh, 1973, Government of the People's Republic of Bangladesh, Vol. pp. 92-93. In Abu Hossain Siddique, op.cit., p. 124.

1943, a regional Chairman of the National War Labor Board in the U.S.A first used the term 'Fringe Benefits'.⁴⁹ The payment of fringe benefits has become a regular feature of the industrial wage system since the end of the Second World War.⁵⁰ At one time, such benefits were a very small percentage of take-away home pay. So, the term fringe benefits are appropriate. But with the passage of time, the percentage of fringe benefits has increased substantially.⁵¹ For example, in 1929, fringe benefits amounted to only 3% of total payroll, 31% in 1969 and they topped 40% in 1980.⁵² So, although the term fringe benefits is generally used, does not correctly describe the amount or importance of benefits.⁵³ Fringe Benefits are taking various forms and the employers of the modern world are extending the dimensions of fringes towards employees.⁵⁴

5.3.1. Fringe Benefits offered to the Different Levels of Managers in the Enterprises under Study

The study revealed the following information regarding the fringe benefits available to the different levels of managers:

- **House Rent Allowance:** All enterprises (excepting 30% of the small and 33.33% of the large enterprises) provide house rent allowance to the different levels of managers and the amount which these enterprises provide vary in cases of different levels of managers.
- **Car/Conveyance Allowance:** In all the enterprises, top level managers are provided with full time car with maximum fuel consumption and mid level managers are provided with a single car (in office time) for joint use. In all enterprises, lower level managers receive conveyance allowance of specified amount.
- **Medical Allowance:** All enterprises (excepting 33.33% of the large enterprise) under study provide medical allowance for different levels of managers and the allowance vary among different levels.
- **Leave with Pay:** In all enterprises under study, managers belonging to different levels are entitled to earned leave from 20 to 30 days per year. In addition to earn, all these enterprises provide casual and sick leave of specified number of days every year to managers which also vary among enterprises.
- **Recreation Allowance:** All the enterprises under study provide recreation allowance to the top and the mid level managers along with leave.
- **Gratuity:** In case of all the enterprises under study, gratuity is paid at the rate of one month's salary for every completed years of service. Generally, it is payable subject to the following conditions: (a) the manager has

⁴⁹Reid and Robertson *Fringe Benefits, labour costs and Social Security*, (London: George Allen and Unwin Ltd. 1965), p. 18 in: Biswanath Gosh, op.cit., p. 201.

⁵⁰Ibid.

⁵¹Michael J.Jucius, op.cit., p. 324.

⁵²Jon M. Ivancevich, op.cit., p. 789.

⁵³Michael J. Jucius, op.cit., p. 324.

⁵⁴T.J Gordon, and Lebleu, R.E., "Employee Benefits", 1970-85, *Harvard Business Review*, Jan.Feb., 1970, p. 90

completed a continuous service of three years in the enterprise, (b) the amount is payable on superannuating or voluntary resignation of the manager concerned.

- **Contributory Provident Fund:** All the enterprises under study provide contributory provident fund to the different levels of managers and a manager is not entitled to benefit of contributory provident fund unless he has completed at least three years of completed service.
- **Entertainment Allowance:** In all enterprises under study, the top and the mid level managers are provided with entertainment allowance and the amount varies between the top and the mid management.
- **Festival Bonus:** In all the enterprises under study, all the managers belonging to different levels are entitled to festival bonus.
- **Telephone:** In all the enterprises under study, top and mid level managers are provided with telephone at their residence and the enterprises pay the bill up to a certain amount and the amount varies among the top and the mid level managers.
- **Lunch/Tiffin Facilities:** Although all the enterprises under study provide free tea to all the top, the mid and the lower level managers, only 66.67% of the large enterprises under study provide subsidized lunch facilities during office hours.
- **Group Insurance:** In case of all large and medium enterprises covered by the study, there are group insurance schemes for different levels of managers and the enterprise pay the premium. None of the small enterprises under study pay this benefit.
- **Membership of Professional Association:** In all large enterprises under study, top level managers are entitled to become members of various professional associations in the country and the enterprises pay the membership fee.
- **Training Facilities:** It has already been mentioned that all the enterprises covered by the study give on the job training to managers informally and also offer facilities for attending training courses offered by different institutions.
- **Newspaper Allowance:** 33.33% of the large enterprises covered by the study provide newspaper allowance to the top level managers.
- **Servant Allowance:** 33.33% of the large enterprises covered by the study provide servant allowance to the top levels managers.

5.3.2. Fringe Benefits offered to the Workers in the Enterprises under Study

The study revealed that all the enterprises covered by the study offer festival bonus, gratuity, contributory provident fund, training facilities and yearly picnic to the workers and in case of all enterprises, doctors are there and these enterprises also provide some medicines to the workers at free of cost. Besides, all the medium and the large enterprises provide group insurance and Tiffin facilities to the workers and 33.33% of the large enterprises provide transport facilities to the workers.

These are the measures taken by the enterprises under study to develop human resources through compensation to the employees in Bangladesh.

6.0. Summary and Policy Recommendations

6.1. Summary

Organizations receive four basic kinds of resources from their environments. These are human, monetary physical and information. Human resource includes managerial talents and labour. The people do the work and also provide the creativity that sustains operations. Human Resource Management is concerned with effective management of people at work.

Now-a-days, private sector has been called upon to play an important role in the economy of Bangladesh and manufacturing industries are concerned as the engine of its growth. Today it would be difficult to think of a successful organization without efficient human resource management in private manufacturing industries in Bangladesh. This study serves as a meaningful starting point.

The main purpose of the study was to examine the steps that were being taken by the private manufacturing industries of Bangladesh to develop human resources through proper compensation.

The study was confined to Chittagong City and its adjacent areas. 30 enterprises (10 from large, 10 from medium and 10 from small) were selected on random sampling basis. Over and above, 75 managerial people and 75 workers were interviewed. The data thus collected were processed and final report was prepared.

Compensation is what the employees get in exchange for their contribution to the organization. Presently, the employees are getting salary and wages, incentives and fringe benefits as compensation.

6.2. Policy Recommendations

1. The study revealed that the pay structure, incentives and fringe benefits paid to the employees were not consistent in private manufacturing industries in Chittagong. The owners increase salary and other financial benefits to an employee twice per year on the other hand no increment is allowed to some others. This disturbs the morale of the deprived employees. This policy should be dropped and a regular pay scale should be provided so that the morale of all the employees remains high.
2. It was further found that there were no fixed leave rules in some of the enterprises. Over and above, leaves were not sanctioned to all the employees in the same manner. This also works negatively on the morale of the employees. So, it is recommended that there must be some standing rules regarding leaves of all the employees.

If all these recommendations are accepted and implemented, the morale of the employees of the private sector enterprises will increase and they would work sincerely and willingly.

ASSET STRUCTURE OF SMALL SCALE INDUSTRIES : A STUDY IN BOGRA AND RAJSHAHI DISTRICTS

M. Saiful Islam*

Abstract: The paper is the outcome of an empirical research work conducted on small-scale industries of Bogra and Rajshahi districts. The paper examines the asset structure of small industrial units of the two districts and studies the relationship between asset structure and characteristics of the sample units. Majority percentage of units of both the districts had investment in fixed assets between 51 to 75 percent of total assets. While majority percentage of units of both the districts invested in current assets between 26 to 50 percent of total assets. The study did not find statistically significant association between asset structure and nature, form, location, age and investment size of small-scale industries of both the districts.

1. Introduction

Assets refer to economic resources that are owned or controlled by an enterprise as a result of past transactions or events and that are expected to have future economic benefits. Assets have four essential characteristics: (1) they represent potential future benefits; (2) they belong to the entity, usually through ownership, which uses them to obtain those future benefits; (3) they can be measured in monetary terms; and (4) they result from past transactions (Skousen *et al.*, 1986:30). The assets of a firm are usually divided into fixed and current assets. Fixed assets refer to the permanent assets which a firm acquires for use in producing goods and services, while current assets refer to cash and other assets that will shortly be converted into cash in the normal operations of a business (Prather, 1962:100). The distribution of a firm's investment amongst the various types of assets is known as the asset structure of an enterprise (Hossian, 1992:179). The asset structure of a firm is largely determined by the industry in which it operates. In case of service and merchandising industries investment in fixed assets is relatively small. Whereas, in case of industries where the cost of basic raw materials is comparatively lower, the share of fixed assets in the total productive capital will be relatively higher. An entrepreneur has to decide how much of his capital to be invested in fixed assets and how much in current assets. As there is no precise rule regarding this, the exact amount to be invested in different types of assets are arrived at only after a careful analysis in each particular case. The ratios of current assets to fixed assets vary between industries and even in the same industry between different times. It is worth mentioning that an adequate amount of fund has to be invested in current assets for a smooth and uninterrupted production

*Dr. M. Saiful Islam, Associate Professor, Department of Management, Rajshahi University, Rajshahi.

and sales process. Since the total sum available is limited, its distribution should be so carefully adjusted that the profit of the unit could be maximized under the existing circumstances. Habibullah (1974) shortly after liberation, found the ratio of fixed assets to working capital as 58:42. Khan (1980) in one of his studies stated that size, methods of production and use of technology determine the extent of investment in fixed assets.

2. Objectives of the Study

The study attempted to achieve the following objectives:

1. To examine the asset structure of small scale industries under study;
2. To study the relationship between the asset structure and the nature, form, location, age and investment size of small-scale industries.

3. Scope of the Study

The study covered small-scale industries of Bogra and Rajshahi districts belonging to the following six sub-sectors:

1. Food and Allied
2. Textiles
3. Wood and Allied
4. Paper and Printing
5. Chemical and Pharmaceuticals and
6. Engineering

All these industries, mentioned above, are very important for the economic development of Bangladesh. These constitute more than 90 percent of the total small-scale industries operating in Bangladesh.

4. Hypothesis of the Study

On the basis of the objectives of the study the following hypothesis was drawn:

The asset structures of small-scale industries of both Bogra and Rajshahi districts are not significantly associated with the nature, form, location, age and investment size of small-scale industries.

5. Methodology

Research methodology is a way to solve the research problem systematically. It is a process that enables the researcher to collect and analyze effective and reliable information to arrive at correct decisions in respect of the research work. This section of the paper covers the details of the methodological issues of the study.

5.1 Population

The population of the study included all small industries under the sub-sectors of food and allied, textiles, wood and allied, paper and printing, chemical and pharmaceuticals and engineering in Bogra and Rajshahi districts. According to the latest countrywide survey on small industries conducted by BSCIC in 1991 there were 689 units of small industries in Bogra district and 736 units of small industries in Rajshahi district.

5.2 Sampling Procedure

Stratified random sampling technique had been adopted with proportional allocation basis to draw the samples from the population of each stratum. The units covered under the study had been stratified into six groups on the basis of nature of product. It was decided to select 10 percent of the units from each stratum for intensive study.

It was observed that in certain strata the total number of units was very small and therefore to have proper representation of the stratum it was decided to select either 10 units or 10 percent of the stratum whichever was maximum. Following this principle out of 689 and 736 industrial units 95 and 97 industrial units were selected from the district of Bogra and Rajshahi respectively.

5.3 Nature and Sources of Data

The study was based on both primary and secondary data. For collection of primary data from the entrepreneurs of small-scale industries a set of pre-designed questionnaire was used. Executives and officials of financial institutions, promotional agencies and trade associations were personally interviewed to get their opinion regarding various relevant aspects of financing small-scale industries. Discussions were made with the concerned persons and research notes were taken during the process of discussion. Important comments made by the respondents were incorporated in the report where relevant.

Secondary data were collected mainly from the publications of Bangladesh Small and Cottage Industries Corporation, Micro Industries Development Assistance and Services, Ministry of Industries, Ministry of Finance, Ministry of Planning, National Association of Small and Cottage Industries in Bangladesh, Bangladesh Bank, Export Promotion Bureau, Bangladesh Bureau of Statistics etc. A few published and unpublished government documents and study reports were also followed in the study. A pilot study was conducted in two industries - one from engineering sub-sector and another from food and allied sub-sector in Bogra district to test the suitability of the questionnaire and necessary adjustments were made thereon.

5.4 Techniques of Data Analysis

Considering the nature of data collected and keeping in view the objectives of the study simple statistical analysis was done. The basic descriptive statistics used in this study were frequencies, percentages, means, common size statement, trend analysis, ratio analysis, and the like. Chi-square test of association was applied to determine the significance of the relationship between different characteristics and asset structures of sample units. The characteristics included the nature of industry, location, form of organization, size of investment and age of industrial units.

6. Findings

Findings regarding the asset structures and the association between asset structures and characteristics of sample industrial units have been summarized below:

6.1 Asset Structure by the Nature of Industry

To study the relationship between the nature of industry and asset structures of small scale industries under study the following null hypothesis has been tested:

Ho: The asset structures of small-scale industries either in Bogra or in Rajshahi district are not significantly associated with the nature of industry.

The results of chi-square tests presented in Table-1 supported the null hypothesis indicating that there was no significant difference (P greater than 0.05) amongst the industrial units of different nature with respect to the ratios of fixed and current assets to total assets. Therefore, it may be concluded that the nature of industry does not significantly affect the ratio of fixed assets to total assets and current assets to total assets of small industrial units of the two districts.

It may be observed from Table-1 that in Bogra district the largest percentage of units in textiles (50.00%), paper and printing (50.00%) and chemicals and pharmaceuticals industries (50.00%) invested more than 75 percent of their total investment to acquire fixed assets. On the other hand, the largest percentage of units in food and allied (55.00%) and engineering industries (40.00%) invested 51 to 75 percent of their investment in fixed assets. In Rajshahi district the highest percentage of units of all industries other than food and allied and engineering industries, had spent more than 75 percent of their investment in fixed assets. The highest percentage of units in food and allied (57.89%) and engineering industry (52.94%) had 51 to 75 percent investment in fixed assets.

With respect to current assets it is evident from Table-1 that in Bogra district the highest percentage of units in textiles (50.00%), paper and printing (50.00%) and chemical and pharmaceutical industries (50.00%) had invested less than 26 percent of total assets in current assets. The highest percentage of units in food and allied (55.00%) and engineering industries (40.00%) had current asset ratio between 26 to 50 percent. In Rajshahi district the highest percentage of units of all types of industries excepting food and allied and engineering industries had invested less than 26 percent of total assets in current assets. The highest percentage of units in food and allied (57.89%) and engineering industries (52.94%) had current asset ratio between 26 to 50 percent.

6.2 Asset Structure by the Form of Organization

To examine whether the asset structures of small scale industries are influenced by the form of organization or not, the following null hypothesis has been tested:

Ho: The form of organization does not significantly affect the asset structures of small-scale industries.

The results of chi-square tests reveal that there is no significant difference (P greater than 0.05) amongst the units of different forms of organization (see Table-2) with respect to the ratios of fixed assets to total assets and current assets to total assets. Hence it is indicative that form of organization of both the districts does not significantly affect the ratios of fixed and current assets to total assets.

The analysis of asset structures shows that in Bogra district the largest percentage of sole proprietorship concerns (45.90%) employed 51 to 75 percent of their investment in fixed assets. On the other hand, the highest percentage of partnership firms (42.86%) and private limited companies (46.15%) invested in fixed assets an amount exceeding 75 percent of their total assets. The lowest parentage of units of all forms of industries in Bogra district (sole proprietorship 26.23%, partnership 23.81% and private limited company 23.08%) had fixed asset ratio less than 51 percent of total assets.

In Rajshahi district the highest percentage of sole proprietorship concerns (46.97%), partnership firms (42.11%) and private limited companies (41.67%) employed 51 to 75 percent of their investment in fixed assets. The lowest percentage of sole proprietorship concerns (21.21%) and private limited companies (16.66%) and significant percentage of partnership firms (31.57%) had less than 51 percent investment in fixed assets. The highest percentage of private limited companies (41.67%) employed more than 75 percent of their total fund in fixed assets.

Regarding the investment in current assets Table-2 depicts that in Bogra district the highest percentage of partnership firms (42.86%) and private limited companies (46.15%) and significant percentage of sole proprietorship concerns (27.87%) invested in current assets not more than 25 percent of their total investment. The lowest percentage of units of all categories of industries (sole proprietorship 26.23%, partnership 23.81%, and private limited company 23.08%) had investment in current assets more than 50 percent of total invested fund. The highest percentage of sole proprietorship concerns (45.90%) and significant percentage of partnership firms (33.33%) and private limited companies (30.77%) had 26 to 50 percent investment in current assets. On the other hand, In Rajshahi district the highest percentage of sole proprietorship concerns (46.97%), partnership firms (42.11%) and private limited companies (41.67%) employed 26 to 50 percent of their total investment in current assets. The lowest percentage of sole proprietorship concerns (21.21%) and private limited companies (16.66%) and significant percentage of partnership firms (31.57%) had more than 50 percent investment in current assets.

6.3 Asset Structure by Location of Industry

Industrial units located in BSCIC industrial estates have to invest comparatively less amount for land as compared to the industrial units located out side BSCIC industrial estates. So industrial units located within BSCIC industrial estates can save a substantial amount which they can invest in other assets. This seemed to have an effect on the asset structure of the small-scale industries. In the present study an attempt has been made to examine if any significant relationship existed between the location and the asset structure of the small-scale units under study and to accomplish this purpose the following null hypothesis has been tested:

Ho: The location of industry does not significantly affect the asset structures of small-scale industries.

The results of chi-square tests presented in Table-3 indicate that there is no significant difference (P greater than 0.05) amongst the units located within or outside of BSCIC industrial estates with respect to the ratios of fixed assets to total assets and current assets to total assets. So, it can be said that location of industry does not significantly affect the ratios of both fixed and current assets to total assets of industrial units of both the districts.

Table-3 reveals the largest percentage of units of both Bogra (40.91%) and Rajshahi (42.03%) located out side the BSCIC industrial estates had 51 to 75 percent investment in fixed assets. Similarly the largest percentage of units of both Bogra (41.38%) and Rajshahi (53.57%) districts located within BSCIC industrial estates had 51 to 75 percent investment in fixed assets. The lowest percentage of

Units of both Bogra (21.21%) and Rajshahi (24.64%) districts located outside BSCIC industrial estates employed up to 50 percent of their total fund for acquiring fixed assets. Significant percentage of units of both Bogra (37.88%) and Rajshahi

(33.33%) districts located outside BSCIC industrial estates employed more than 75 percent of their total investment in fixed assets. The lowest percentage of units (24.14%) of Bogra district located within BSCIC industrial estate had above 75 percent of their total investment in fixed assets.

Current assets analysis shows that the highest percentage of units of both Bogra (40.91%) and Rajshahi (42.03%) districts located outside the BSCIC industrial estates had a ratio of current assets to total assets ranging between 26 to 50 percent of the total assets. Similarly the largest percentage of units located within the BSCIC industrial estates of both Bogra (41.38%) and Rajshahi (53.57%) districts had a ratio of current assets ranging between 26 to 50 percent of the total assets. The lowest percentage of units located outside BSCIC industrial estates of Bogra (21.21%) and Rajshahi (24.64%) districts employed above 50 percentage of their total investment in current assets.

6.4. Asset Structure by Age of Industry

An attempt was made to examine if the asset structures differed significantly across units of different ages in Bogra or in Rajshahi district. For this purpose the following null hypothesis was tested:

Ho: The age of the unit does not significantly affect the asset structures of small-scale industries.

It is evident from Table-4 that the results of chi-square tests accept the null hypothesis indicating that there is no significant difference (P greater than 0.05) amongst the units belonging to different age groups with respect to the ratio of fixed assets to total assets as well as ratio current assets to total assets.

It means that there is no statistically significant difference across industries of different ages in Bogra as well as in Rajshahi districts with respect to the ratios of both fixed assets to total assets and current assets to total assets.

The data presented in Table-4 say that in Bogra district the highest percentage of units (54.55%) in the age groups of 15-20 years and above 20 years (38.46%) employed in fixed assets more than 75 percent of their total resources. On the other hand, the highest percentage of units in age groups of upto 5 years (42.43%), 5-10 years (54.54%) and 10-15 years (37.50%) employed 51 to 75 percent of their resources in fixed assets. The lowest percentage of units in the age groups of upto 5 years (24.24%) and above 20 years (23.08%) employed not more than 50 percent of their resources in fixed assets.

In Rajshahi district the highest percentage of units (43.33%) in the age group of up to 5 years invested more than 75 percent of their fund in fixed assets. On the other hand, the highest percentage of units in the age groups of 5-10 years (44.00%), 10-15 years (52.63%), 15-20 years (53.85%) and above 20 years (50.00%) had employed 51 to 75 percent of their fund in fixed assets. The lowest percentage of units of in the age groups of upto 5 years (20.00%), 5-10 years (20.00%) and above 20 years (20.00%) invested not more than 50 percent of their resources in fixed assets. The lowest percentage of units in the age groups of 10-15 years (21.05%) and 15-20 years (15.38%) had investment in fixed assets exceeding 75 percent of their resources.

With respect to the ratio of current assets to total assets Table-4 reveals that in Bogra district the highest percentage of units in the age group of 10-15 years (31.25%) invested more than 50 percent of total resources in current assets. The

highest percentage of units in the age groups of upto 5 years (42.43%), 5-10 years (54.54%), 10-15 years (37.50%) and above 20 years (38.46%) employed 26 to 50 percent of resources in current assets. The lowest percentage of units in all different age groups excepting the age group of 15-20 years employed more than 50 percent fund in current assets. On the other hand, In Rajshahi district 30.77 percent of units in the age group of 15-20 years and equal percentage of units (20%) in the age groups of upto 5 years, 5-10 years and above 20 years invested more than 50 percent of total resources in current assets. The highest percentage of units in age groups of 5-10 years (44.00%), 10-15 years (52.63%), 15-20 years (53.85%) and above 20 years (50.00%) and significant percentage of units in the age group of up to 5 years (36.67%) had employed 26 to 50 percent of their resources in current assets. The highest percentage of units in the age group of upto 5 years (43.33%) and the lowest percentage of units in the age group of 15-20 years (15.38%) employed not more than 25 percent resources in current assets.

6.5 Asset Structure and Size of Investment

An attempt was made in the study to examine if the asset structures differed significantly across different sizes of firms of Bogra and Rajshahi districts. For this purpose the following null hypothesis was tested:

H₀: The asset structures of small-scale industries are not significantly associated with the size of investment in industries.

The results contained in Table-5 show that there is no significant difference (P greater than 0.05) amongst the units of different investment size groups with respect to the ratios of fixed assets to total assets and current assets to total assets. So, it is evident that there is no statistically significant difference amongst the small industries of different investment size groups in Bogra as well as Rajshahi districts with respect to the ratios of fixed assets to total assets and current assets to total assets.

The analysis of fixed assets reveals that in Bogra district the highest percentage of units with an investment of Tk 20-30 lakh (45.45%), Tk. 30-40 lakh (45.45%), Tk. 50-60 lakh (50.00%), Tk 60-70 lakh (66.67%) and Tk above 100 lakh (60.00%) employed in fixed assets more than 75 percent of their investment. On the other hand, the highest percentage of units in size groups of Tk. up to 10 lakh (47.06%), Tk 10-20 lakh (43.33%), Tk. 40-50 lakh (50.00%), Tk. 70-80 lakh (75.00%) Tk. 80-90 lakh (100.00%) and Tk. 90-100 lakh (100.00%) had fixed asset ratio between 51 to 75 percent of their investment. In Rajshahi district the highest percentage of units in investment size group of Tk. 10-20 lakh (44.83%) had more than 75 percent investment in fixed assets. On the other hand, the highest percentage of units in the investment size groups of Tk up to 10 lakh (57.14%), Tk. 20-30 lakh (64.29%), Tk. 40-50 lakh (57.14%) and Tk. 50-60 lakh (66.67%) had fixed assets ratio between 51 to 75 percent of their total investment.

So far the ratio of current asset is concerned Table-5 reveals that in Bogra district the highest percentage of units in the size groups of Tk. 20-30 lakh (45.45%), Tk. 30-40 lakh (45.45%), Tk. 50-60 lakh (50.00%), Tk. 60-70 lakh (66.67%) and Tk. above 100 lakh (60.00%) had used not more than 25 percent of their total resources in current assets. On the other hand, majority of the units in the size groups of Tk. up to 10 lakh (47.06%), Tk. 10-20 lakh (43.33%), Tk. 40-50 lakh (50.00%), Tk. 70-80 lakh (75.00%), Tk 80-90 lakh (100.00%), and Tk 90-100 lakh (100.00%) had

current assets ratio between 26 to 50 percent of their investment. In Rajshahi district the highest percentage of units in size group of Tk. 10-20 lakh (44.83%) had investment in current assets not more than 25 percent of total resources. On the other hand, the highest percentage of units in the size groups of Tk up to 10 lakh (57.14%), Tk. 20-30 lakh (64.29%), Tk. 40-50 lakh (57.14%), Tk. 50-60 lakh (66.67%) had current asset ratio between 26 to 50 percent of their investment.

7. Conclusion

The asset structure of a business organization refers to the various types of assets possessed by it and the allocation of funds among different assets. The analysis of asset structures of sample units of Bogra and Rajshahi districts revealed that the highest percentage of small scale industries of both the districts, Bogra 41.05 percent, Rajshahi 45.36 percent, employed 51 to 75 percent of their total fund in fixed assets. On the other hand, the highest percentage of units of both the districts, Bogra 41.05 percent, Rajshahi 45.36 percent utilized 26 to 50 percent of their fund in current assets. There was no significant association between the asset structures and the nature, form, location, age and investment size of small-scale industries of both the districts.

On the basis of the findings regarding the asset structure of small scale industries and the experience during the period interviewing the small entrepreneurs the following policy suggestions can be recommended to improve the asset structure of small-scale industries:

1. Small industrial entrepreneurs do not maintain records of business transactions and business properties in recognized way and in most of the cases this job is done by non-professionals. So it becomes very tough to have correct idea about the asset structure as well as financial position of small-scale industries. It is one of the important reasons of loan refusal to small industries by the financial institutions. In order to improve the situation small industrial entrepreneurs should be motivated to maintain business records properly by professionals.
2. Small entrepreneurs because of their weaker financial base suffer from liquidity crises. Significant percentage of working capital remains engaged in inventories and account receivables. Financial institutions, both specialized and general, should come forward to resolve this problem by providing loan to small industries on easy terms and conditions.
3. Entrepreneurs of small industries have to spend significant percentage of total fund to buy land and construct buildings on it. The magnitude of investment for land and buildings can be reduced if BSCIC could provide more industrial plots with adequate infra-structural facilities to accommodate more small industrial units in BSCIC industrial estates all- over the country.

Reference

- Skousen, K. Feed et al. (1986) *Financial Accounting*, Third Edition, New York. Worth Publishers Inc.,
- Prather, C.L. (1962) *Financing Business Firms*, Illinois, Richard D. Irwin Inc., in Hossain, Khandoker Shafayet (1992) 'Financing Small-scale Industries of Bangladesh with Special Reference to the Small Industries in Khulna District', Ph.D Thesis, Department of Accounting, University of Rajshahi, Rajshahi, Bangladesh.
- Hossain, Khandoker Shafayet (1992) 'Financing Small-scale Industries of Bangladesh with Special Reference to the Small Industries in Khulna District', Ph.D Thesis, Department of Accounting, University of Rajshahi, Rajshahi, Bangladesh.
- Habibullah, M. (1974) *Industrial Efficiency and Profitability in Bangladesh*. Bureau of Economic Research, University of Dhaka, Dhaka.
- Khan, Azizur Rahman (1980) *Financing Private Sector Industries in Bangladesh Bureau of Business Research*, University of Dhaka, Dhaka.

Table-2: Distribution of Units Showing the Asset Structure According to the Form of Organization.

Asset Structure	Groups	Form of Organization										Total	
		Sole Proprietorship		Partnership		Private Limited Co.							
		Bogra	Rajshahi	Bogra	Rajshahi	Bogra	Rajshahi	Bogra	Rajshahi	Bogra	Rajshahi	Bogra	Rajshahi
a) Ratio of Fixed Assets to Total Assets	Up to 50%	16 (26.23)	14 (21.21)	5 (23.81)	6 (31.57)	3 (23.08)	2 (16.66)	24 (25.26)	22 (22.68)				
	51-75%	28 (45.90)	31 (46.97)	7 (33.33)	8 (42.11)	4 (30.77)	5 (41.67)	39 (41.05)	44 (45.36)				
	Above 75%	17 (27.87)	21 (31.82)	9 (42.86)	5 (26.32)	6 (46.15)	5 (41.67)	32 (33.68)	31 (31.96)				
	Total	61	66	21	19	13	12	95	97				
b) Ratio of Current Assets to Total Assets	Up to 25%	17 (27.87)	21 (31.82)	9 (42.86)	5 (26.32)	6 (46.15)	5 (41.67)	32 (33.68)	31 (31.96)				
	26-50%	28 (45.90)	31 (46.97)	7 (33.33)	8 (42.11)	4 (30.77)	5 (41.67)	39 (41.05)	44 (45.36)				
	Above 50%	16 (26.23)	14 (21.21)	5 (23.81)	6 (31.57)	3 (23.08)	2 (16.67)	24 (25.26)	22 (22.68)				
	Total	61	66	21	19	13	12	95	97				

Note: Figures in the parenthesis indicate percentage.
Source: Personal Survey. The data relate to the year 2004.

District	Value of Chi-Square			
	Asset Structure	df	Value	P. Value
Bogra	a) Ratio of Fixed Assets to Total Assets	4	2.766	0.398
	b) Ratio of Current Assets to Total Assets	4	2.766	0.398
	a) Ratio of Fixed Assets to Total Assets	4	1.510	0.825
	b) Ratio of Current Assets to Total Assets	4	1.510	0.825

Table-3: Distribution of Units Showing the Asset Structure According to the Location of Industries.

Asset Structure	Items	Location of Industry						Total
		Within BSCIC		Outside BSCIC				
		Bogra	Rajshahi	Bogra	Industrial Estate	Rajshahi	Bogra	
a) Ratio of Fixed Assets to Total Assets	Up to 50%	10 (34.48)	5 (17.86)	14 (21.21)	17 (24.64)	24 (25.26)	22 (22.68)	
	51-75%	12 (41.38)	15 (53.57)	27 (40.91)	29 (42.03)	39 (41.05)	44 (45.36)	
	Above 75%	7 (24.14)	8 (28.57)	25 (37.88)	23 (33.33)	32 (33.68)	31 (31.96)	
	Total	29	28	66	69	95	97	
b) Ratio of Current Assets to Total Assets	Up to 25%	7 (24.14)	8 (28.57)	32 (37.88)	23 (33.33)	32 (33.68)	31 (31.96)	
	26-50%	12 (41.38)	15 (53.57)	27 (40.91)	29 (42.03)	39 (41.05)	44 (45.36)	
	Above 50%	10 (34.48)	5 (17.86)	14 (21.21)	17 (24.64)	24 (25.26)	22 (22.68)	
	Total	29	28	66	69	95	97	

Note: Figures in the parenthesis indicate percentage.

Sources: Personal Survey. The data relate to the year 2004.

District	Value of Chi-Square			
	Asset Structure		df	P. Value
Bogra	a) Ratio of Fixed Assets to Total Assets		2	2.532
	b) Ratio of Current Assets to Total Assets		2	2.532
Rajshahi	a) Ratio of Fixed Assets to Total Assets		2	1.134
	b) Ratio of Current Assets to Total Assets		2	1.134

Table-4: Distribution of Units Showing the Asset Structure According to the Age of Industries.

Asset Structure	Groups	Age of Industry						Total					
		Up to 5 Years		5-10 Years		10-15 Years		15-20 Years		Above 20 Years		Total	
		Bogra	Rajshahi	Bogra	Rajshahi	Bogra	Rajshahi	Bogra	Rajshahi	Bogra	Rajshahi	Bogra	Rajshahi
a) Ratio of Fixed Assets to Total Assets	Up to 50%	8 (24.24)	6 (20.00)	5 (22.73)	5 (20.00)	5 (31.25)	5 (26.32)	3 (27.27)	4 (30.77)	3 (23.08)	2 (20.00)	24 (25.26)	22 (22.68)
	51-75%	14 (42.43)	11 (36.67)	12 (54.54)	11 (44.00)	6 (37.50)	10 (52.63)	2 (18.18)	7 (53.85)	5 (38.46)	5 (50.00)	39 (41.05)	44 (45.36)
	Above 75%	11 (33.33)	13 (43.33)	5 (22.73)	9 (36.00)	5 (31.25)	4 (21.05)	6 (54.55)	2 (15.38)	5 (38.46)	3 (30.00)	32 (33.68)	31 (31.96)
Total		33 (100.00)	30 (100.00)	22 (100.00)	25 (100.00)	16 (100.00)	19 (100.00)	11 (100.00)	13 (100.00)	13 (100.00)	10 (100.00)	95 (100.00)	97 (100.00)
b) Ratio of Current Assets to Total Assets	Up to 25%	11 (33.33)	13 (43.33)	5 (22.73)	9 (36.00)	5 (31.25)	4 (21.05)	6 (54.55)	2 (15.38)	5 (38.46)	3 (30.00)	32 (33.68)	31 (31.96)
	26-50%	14 (42.43)	11 (36.67)	12 (54.54)	11 (44.00)	6 (37.50)	10 (52.63)	2 (18.18)	7 (53.85)	5 (38.46)	5 (50.00)	39 (41.05)	44 (45.36)
	Above 50%	8 (24.24)	6 (20.00)	5 (22.73)	5 (20.00)	5 (31.25)	5 (26.32)	3 (27.27)	4 (30.77)	3 (23.08)	2 (20.00)	24 (25.26)	22 (22.68)
Total		33 (100.00)	30 (100.00)	22 (100.00)	25 (100.00)	16 (100.00)	19 (100.00)	11 (100.00)	13 (100.00)	13 (100.00)	10 (100.00)	95 (100.00)	97 (100.00)

Note: Figures in the parenthesis indicate percentage.

Source: Personal Survey. The data relate to the year 2004.

Asset Structure	District	Value of Chi-Square				df	Value	P. Value
		Asset Structure		Total Assets				
a) Ratio of Fixed Assets to Total Assets	Bogra	8	5.265	8	5.265	8	5.265	0.729
b) Ratio of Current Assets to Total Assets	Rajshahi	8	5.07	8	5.07	8	5.07	0.750

Table-2: Distribution of Units Showing the Asset Structure According to the Size of Investment

Table-5: Distribution of Units Showing the Asset Structure According to the Size of Investment.

(Amount in Lakh Taka)

Asset Structure	Groups	Size of Investment																		Total			
		Up to 10 lakh		10-20 lakh		20-30 lakh		30-40 lakh		40-50 lakh		50-60 lakh		60-70 lakh		70-80 lakh		80-90 lakh		90-100 lakh		Above 100 lakh	
		B	R	B	R	B	R	B	R	B	R	B	R	B	R	B	R	B	R	B	R	B	R
a) Ratio of Fixed Assets to Total Assets	Up to 50%	7	5	8	6	2	2	2	5	1	1	2	1	1	1	-	1	-	1	-	1	2	24
		(41.18)	(35.71)	(26.67)	(20.69)	(18.18)	-	(18.18)	(41.67)	(16.67)	(14.29)	(33.33)	(16.67)	(33.33)	-	(20.00)	-	(100)	-	(20.00)	(40.00)	(25.26)	(22.68)
	51-75%	8	8	13	10	4	9	4	3	3	4	1	4	-	3	2	1	1	1	1	2	39	44
		(47.06)	(57.74)	(43.53)	(34.48)	(36.36)	(64.29)	(36.36)	(25.00)	(50.00)	(57.14)	(16.67)	(66.67)	-	(50.00)	(75.00)	(40.00)	(100)	(50.00)	(20.00)	(40.00)	(41.05)	(45.36)
	Above 75%	2	1	9	13	5	5	5	4	2	2	3	1	2	1	2	-	-	-	(50.00)	(60.00)	(32.31)	(31.96)
		(11.76)	(7.14)	(30.00)	(44.83)	(45.45)	(35.71)	(45.45)	(33.33)	(33.33)	(28.57)	(50.00)	(16.67)	(66.67)	(50.00)	(40.00)	-	-	-	(50.00)	(20.00)	(33.68)	(31.96)
	Total	17	14	30	29	11	14	11	12	6	7	6	6	3	2	4	5	1	1	1	5	95	97
b) Ratio of Current Assets to Total Assets	Up to 25%	2	1	9	13	5	5	5	4	2	2	3	1	2	1	1	2	-	-	1	3	32	31
		(11.76)	(7.14)	(30.00)	(44.83)	(45.45)	(35.71)	(45.45)	(33.33)	(33.33)	(28.57)	(50.00)	(16.67)	(66.67)	(50.00)	(25.00)	(40.00)	-	-	(50.00)	(60.00)	(33.68)	(31.96)
	26-50%	8	8	13	10	4	9	4	3	3	4	1	4	-	3	2	1	1	1	1	2	39	44
		(47.06)	(57.14)	(43.33)	(34.48)	(36.36)	(64.29)	(36.36)	(25.00)	(50.00)	(57.14)	(16.67)	(66.67)	-	(50.00)	(75.00)	(40.00)	(100)	(50.00)	(20.00)	(40.00)	(41.05)	(45.36)
	Above 50%	7	5	8	6	2	-	2	5	1	1	2	1	1	-	1	-	1	-	-	1	2	24
		(41.18)	(35.71)	(26.67)	(20.69)	(18.18)	-	(18.18)	(41.67)	(16.67)	(14.29)	(33.33)	(16.67)	(33.33)	-	(20.00)	-	(100)	-	(20.00)	(40.00)	(25.26)	(22.68)
	Total	17	14	30	29	11	14	11	12	6	7	6	6	3	2	4	5	1	1	1	5	95	97

Note: Figures in the parenthesis indicate percentage. The data relate to the year 2004.

B = Bogra

R = Rajshahi

Source: Personal Survey.

District	Value of Chi-Square			
	Asset Structure		df	P. Value
Bogra	a) Ratio of Fixed Assets to Total Assets		20	0.468
	b) Ratio of Current Assets to Total Assets		20	0.468
Rajshahi	a) Ratio of Fixed Assets to Total Assets		20	0.185
	b) Ratio of Current Assets to Total Assets		20	0.185

MULTIFUNCTIONAL LAND USES AND URBAN AGRICULTURE IN RAJSHAHI CITY, BANGLADESH

Md. Masud Parves Rana*

Abstract: The nature of urban land use allocation and multifunctional characteristics of urban land is very interesting and important issue to the urban development authority and policy makers. With urbanization, land use pattern always remains in motion. New settlements, commercial, industrial and transpiration infrastructure etc. tends to engulf urban farming areas relocating towards the fringe area. This process characterizes the urban land as multifunctional. Urban agriculture is one of the factors by which urban land or spaces may be used in multiple ways. The nature of multifunctionality of a space is required to maintain present ever-increasing fundamental demands and unsustainability. In this paper, an attempt has been made to reveal the nature of urban land use through vegetable farming and its significance in Rajshahi City of Bangladesh. The study has found vegetable farming as urban agriculture is a significant activity, especially for the urban poor. The study also made some recommendations mentioning the contribution of urban agriculture to urban economy, which will be helpful to formulate development policy for Rajshahi City Authority.

1. Introduction

The process of urbanisation spontaneously tends to engulf unoccupied urban spaces and relocate the farming areas towards the fringe or urban periphery. In the developing countries, where urbanisation is always active, land use pattern always remains in motion through this process. With ever increasing population size and their demands, the land of the city needs to be used in multiple ways. The nature of multifunctionality of a land is required to mitigate and cope with present disaster, food insecurity and unsustainability. Multifunctionality represents positive externalities as a result of the enrichment of their significance in a certain context (Fleury and Ba, 2005). Externality is defined as transformations of the physical or social environment, caused by the farming activity beyond the limits of its productive system, which can be direct, indirect or territorial. Multifunctional land uses have various economic significance. The multifunctionality of urban agriculture is that it produces both agricultural commodities and a useful area for the city (Fleury and Ba, 2005).

Urban agriculture has six common dimensions, which are: types of economic activities, categories of products, location, types of spaces, product destination and production scale. It is located within (intra-urban) or on the

* Assistant Professor, Department of Geography & Environmental Studies, Rajshahi University, Rajshahi.

fringe (peri-urban) of a town, a city or a metropolis, and grows or raises, processes and distributes a diversity of food and non-food products, (re-) uses largely human and material resources, products and services found in and around that urban area, and in turn supplies human and material resources, products and services largely to that urban area (Mougeot, 2000). The concept and definition of urban agriculture is fairly recent in mainstream research topics. It is gaining importance as research on urban systems, environmental planning and management, and sustainable development. Urban agriculture is now recognised as a crucial component in cities' social, economic, environmental and ecological benefits, if carried out in an environmentally friendly manner. Based on recent studies in the Netherlands and some African countries, and on a review of the rapidly growing volume of literature on the subject Van Den Berg in 2000 pointed out the two continuous process that together make for this phenomenon i.e. (a) regular agriculture becoming urban agriculture under the influence of urban growth and (b) urban residents becoming farmers because they find and utilise the spaces within the urban fabric. It is witnessed all over the world that a growing number of urban dwellers are engaging in agricultural activities, especially in the less developed country (Drescher, Jacobi and Amend, 2000), where city population size is very large and poverty and food insecurity is a great concern to the city authority. It is estimated that 800 million people are engaged in urban agriculture world-wide and play an important role in feeding the worlds cities (UNDP, 1999, FAO, 1999, Drescher, et al., 2000).

Urban agriculture is relatively a new concept in Bangladesh. It has multiple roles, including economic, environmental and social. These roles are particularly important in the light of urban economy, urban sustainability and environmental concerns. In the distant past, cities were also found very near to the productive agricultural lands. These hinterlands or fringe areas of the cities then supply the city most necessary foods. As cities have increased in physical extent, most of the productive fringe areas have been taken over by urban infrastructure. Nevertheless, urban agriculture has huge economic and environmental costs in bringing foods to the cities and hauling away organic wastes. According to Rumi and Shaikh (2002), "urban agriculture means the cultivation of vegetables and fruits commercially in the vacant places within urban area and urban fringe area to mitigate urban needs. Baumgartner and Belevi (2001) defined urban agriculture, as "it comprises the production, processing and distribution of a diversity of foods, including vegetables and animal products within (intra-urban) or at the fringe (peri-urban) of an urban area".

However, from all these definitions, some key words such as food production, food security, urban ecosystem, urban and peri-urban areas, urban poor, urban economy etc. have emerged which may appear very helpful for understanding urban agriculture. Keeping all the existing definitions in mind, in this study, urban agriculture is defined as a practice of crops, vegetables and fruits cultivation along with poultry, livestock, aquatic production and other related activities within urban and urban fringe areas.

Urban farming in the city, like Rajshahi of Bangladesh, is very common and indigenous practices by the urban dwellers. It is mentionable that the location and scale of this practice differ according to the occupational

patterns of the people and location of their settlements. The fringe areas are more agriculture-prone in the city. Vegetable production is very popular to the city farmers. Nonetheless, urban agriculture is still not included in the city development policy.

This article has been prepared with an attempt to reveal multifunctional nature of land use in Rajshahi City of Bangladesh. Special focus has been given to urban agriculture, particularly vegetable farming, as a factor of multifunctionality. The study has found urban agriculture as a significant activity, especially of the urban poor. It is hoped that the generated ideas will be helpful to enhance awareness regarding the constraints and potentials of urban agriculture, and facilitate its recognition as an issue of intervention as far as city development policy is concerned.

2. Material and methods

The necessary data and information was collected from both primary and secondary sources. Primary data was collected through participatory field survey in 2004 in Rajshahi City of Bangladesh. From 225 vegetable farmers, data was collected through structured questionnaire survey. The farmers were selected according to purposive random sampling from the three categories of spaces of the city i.e. built up area, semi-built up area and fringe area. The secondary data has also been incorporated from different published and unpublished documents, journals and books.

3. Results and discussion

3.1 Multifunctional land use pattern in Rajshahi City

Various types of functions and activities characterise the land use pattern of Rajshahi City. In the city area, more than 18% land is under agricultural activities. But the maximum, 32.60% land is used for residential areas followed by agriculture, water bodies, vacant/open places, educational and so on. Water bodies encompass 13.64% that include the river Padma and large number of ponds. Educational use of land is also occupying huge land of the city. Industrial use is very nominal in the city area, which is only 0.78% of the total (Table-1).

Table 1 : Land Use Allocation in Rajshahi City

Type of Land Use	Area in Hectares	Percent of total land
Residential	1636.12	32.60
Agricultural	925.10	18.43
Water Body	684.50	13.64
Vacant /Open Space	658.01	13.11
Educational	469.70	9.36
Road	190.70	3.80
Miscellaneous	180.50	3.60
Business & Mercantile	179.10	3.57
Industrial Use	39.30	0.78
Assembly	30.20	0.60
Mixed	10.80	0.21
Institution	9.0	0.18
Storage	5.80	0.12
Total	5018.92	100

Source: Rajshahi Development Authority, 2003.

3.2 Agriculture in Rajshahi City

The process of urbanization does not believe in existence or presence of agriculture in the city area. But, Rajshahi City experiences huge and extensive presence of agriculture in various ways. Vegetable farming, livestock rearing, nursery, aquaculture etc. are the common phenomenon of agriculture in this city. Vegetable farming dominates because of demands, perishable nature, easy way of farming and maximum profit. The types of vegetable, grown in the city or periphery of the city, depend on the seasonal variation and types of space. Although, some vegetables are available in the city all the year round because of preserving facilities and realization about consumer demands.

Livestock rearing concerns with poultry, cows, goats etc. Poultry farming are very familiar and profitable in the city area. There are so many young educated people are taking this farming as their main or secondary profession. Eggs and meats are very fond of to the urban dwellers. Meats of goats, cows or bulls are also very delicious item to the people. But, these are not reared for the meats only in the city area. Cow's milk is very necessary daily in almost every family of the city. Some poor family rear goats only to get returns by selling them in the markets after keeping several years. They are also interested to rear female goats for their reproductive nature. There are few nurseries in Rajshahi City, which is basically producing flowers, mango tress etc. In the fringe area, crops like; rice, wheat, banana etc. and spices like; challis, onion, turmeric etc. are present in small scale. Rajshahi region is very prone to mango and lychee trees. These two fruits are very famous in Bangladesh. For this reason, farmers are interested to plant mango and lychee trees in their fields with other crops.

3.3 Significance of urban agriculture

The present study has tried to explore the significance of urban agriculture in Rajshahi City of Bangladesh. In doing so, focus has been given to vegetable farming. That is why, the following sections will discuss the significance of vegetable production in the city areas.

3.3.1 Food supply, food security and food safety

The importance of vegetables in the aspect of human nutrition is well known. Vegetables are rich and comparatively cheaper source of vitamins and minerals. These are one of the cheapest sources of natural nutritive foods. Some of the vegetables are good sources of carbohydrates (leguminous vegetables, potato, sweet potato, garlic, onion), proteins (peas and beans, leafy vegetables, garlic), vitamin A (tomato, carrot, turnip, leafy vegetables, root-vegetables like sweet potato and pumpkin), vitamin B (peas and beans, garlic, tomato), vitamin C (green chillies, turnip, cauliflower, cabbage, knol khol, bitter gourd, radish leaves and leafy vegetables), calcium and iron (all green leafy vegetables). Their consumption in sufficient quantities provides palatability and increases appetite. These are currently considered as an important adjunct for maintenance of good health and beneficial in protecting against some degenerative diseases (Rana, 2005). The vegetables also play an important role in the balanced diet of human beings by providing not only

the energy-rich food but also promise supply of vital protective nutrients like minerals and vitamins.

The important causes of health hazards and nutritional deficiency of people are inadequate intake of micronutrient-rich food, inequitable food distribution within families, low purchasing power and lack of nutritional awareness. In this sense, urban agriculture has both quantitatively and qualitatively beneficiary for the people. It enhances the quantity of foods, which reduces hunger and ensures food availability. It also improves the quality of food, which fosters better health and nutrition. It helps to maintain regularity and nutritional balance of food intake and quality of living environment as well.

Hunger and nutritional deficiencies reduce health and shorten life cycle, long-term disabilities, prevalence of anemia, various disease and illness, premature birth and reduce ability to work which influence on productivity. Urban poor with unstable income, daily food intake varies depending on daily income and on market prices. In the study area, the urban poor daily income varies from Taka 75 -100 only. They have to spend 70% -90% of their income for foods. Nevertheless, they have to suffer from hunger and malnutrition. The varieties of food, especially vegetables intake ensures fresh and healthy life. . In the study area, the consumers get fresh vegetables for the nearest production system. The urban people of this area enjoy huge supply of vegetables. It takes only 7-12 hours to market the vegetables products after harvest.

Urban agriculture can contribute significantly to combating urban hunger and malnutrition of the study area in the following ways:

- Urban agriculture maintains food varieties in the city which ensure intake of nutrients, micronutrients, vitamins etc.;
- Urban poor can take highly priced items producing by themselves;
- Because of the presence of urban agriculture inside, fringe and adjacent area of the city; the supply of vegetable product increase and the prices remain tolerable;
- Farmer may carry out handsome profit from their product because of high demand in the city area; and
- Farmer's expenditure for foods reduces and they can make some save from their income.

Food security is the most important consideration in assessing the significance of urban agriculture. In this new millennium, two of the most significant development challenges are rapid urbanisation and growing poverty. The study area is not an exception. A substantial proportion of the urban poor, not only lack of proper shelter but also often they are unable to satisfy their food and nutritional requirements. That is why, an increasing number of urban people are turned to agriculture or keeping agricultural practices as an important means to supplement their food supply and as a means of augmenting declining purchasing power of their formal earnings.

In the study area, there is much opportunity to increase food supply from inside the urban area i.e. from built up area, from semi-built up area and fringe area. Urban women should be encouraged more to engage in supplementary activities i.e. farming with the male. This could increase food security, additional family income and bring women empowerment.

3.3.2 Women participation in economic activities and empowerment

Nearly fifty percent of the population are women who have minimal participation in economic activities and have small share in the active labour force in the public sector of Bangladesh. For the traditional family restriction, negligence and lack of knowledge they can not participate in all types of economic activities except household's works and child rearing. At present, women are coming forward and are being empowered remarkably. They are enhancing their family status sharing their views with male counterpart maintaining all types of household's works. Still now, women did not develop a tradition to work outside of their houses. But it is found that in the study area that they are involved in homestead vegetable farming, livestock rearing etc. as a part of urban agriculture.

The participation of women in agriculture depends on the two factors. Firstly, women, who are poor, are mostly involved in agriculture basically in small production in subsistence level. Sometime they also sell their products in commercial purposes. Most of the urban rich women do not support farming except gardening. They are fond of to cultivate flowers and fruits. Secondly, the participation varies in term of locational differences i.e. inside the urban and fringe area. Women in the built up area are engaged in jobs or child's education or household duties or education etc. They pass their leisure time by going to shopping, gossiping, visiting relatives houses etc. On the other hand, in the fringe area most of the women are involved in economic activities intensively besides their family duties.

In the urban area, women are also engaged in selling vegetable in the markets, particularly in the corner market (over the roads) or *Bau Bazar* (market for women only). The women operate this type of market in a certain time of a day. Generally, poor women go there for shopping.

3.3.3 Growth of employment opportunities and informal activities

Urban agriculture creates employment and sources of income directly and indirectly. Directly, the farmers get it as their profession. On the contrary, it produces number of sources of income and job opportunities indirectly. It promotes different types of informal activities. It is found from the study that the producers, sellers and consumers are not only related with urban agriculture but also different middlemen are also engaged with this in various ways. Generally, they are transport workers, stakeholders, traders, food processors, food preservers, bankers etc. These types of middlemen are directly or indirectly related with agriculture.

In this point of view, urban agriculture has significant impact on formal and informal trade and transport development. Formal trade includes services of agrochemical such as fertiliser, pesticides, insecticides, fungicides etc., services of agricultural tools and farm implements such as irrigation equipment, spade, tractor, diesel, petrol etc.; services of seeds, preservation and storage materials, transport equipment, and marketing and food processing industries. There are number of informal trading facilities due to presence of farming in the urban area. As for example, business of soil-made pot for rooftop farming, basket and bags for vegetables supply and distribution etc. There are a number of transport workers are engaged in both indigenous and modern transport systems. Among these, different types of

auto van (locally called *Nochimon*, *Korimon*, *Vodvodi* etc), rikshaw vans, bicycle, trucks, animal driven carts are used. So these types of vehicles trading are present in the study area, which has significant effect on urban economy

A number of people are engaged in food preservation and processing. Cold storage system is an important facility in the study area for vegetable preservation. There are 18 cold storages in and around Rajshahi Metropolitan Area of which 11 are situated within the city boundary. In 1969-70, at first cold storage was established in the Rajshahi City. Since then, number of cold storage is increasing in and around the city boundary. This is because of available extensive farming in the urban fringe area, for the presence of good transport facilities and sufficient supply of water and electricity, availability of labour and for comparatively cheaper land value. There are number of warehouses in the inner city where vegetables are being stored and distributed in different part of the city. The owners of the cold storages and warehouses earn huge money lending the spaces for vegetables gathering and distribution. For the presence of cold storage and warehouse, a number of people are getting sources of income like daily labourer, transport workers, middlemen or agents etc. These facilities also play pivotal role to maintain market price of vegetables indirectly.

Agriculture also increases banking activities in the city. The farmers, middlemen and sellers are client of different government and non-government organisations. It is not only improving local economy but also national economy of the country.

3.3.4 Better utilization of spaces

Due to the population pressure and additional food demands, the urban people are using their available land in farming and generating supplementary income and gaining food security. Actually, this is the cause, why urban agriculture is performed with economic and better utilisation of spaces. In the study area, urban agriculture is generating economic use of idle land such as government occupied fallow land; open spaces, school, college or university's fallow land, roadsides, homesteads, rooftops etc.

The urban poor of Rajshahi Metropolitan Area, use their small hat's rooftop for beans, pumpkin, bottle gourd, *puishak* etc. cultivation. They use their homestead and rooftop round the year. Specially, women of the family engage in this type of practice. By this way, they mitigate family demand partially and sometime earn money selling the products to their nearby neighbours or to the markets.

3.3.5 Protection of environment and biodiversity

Farming in the urban area is very important because of the necessity of provision of greenbelt. It is postulated that 25% of any area should be green for the sustainability. In this point of view, urban agriculture or vegetable cultivation contributes to make any area green over the year and maintain sustainability.

Urban agriculture, especially vegetable cultivation has many positive impacts on environmental enhancement. Vegetable cultivation covers extensive area of the urban area by which it manages provision of green belt

and preserves biodiversity. It also maintains atmospheric balance by using rooftop and almost every vacant places of the urban area. Urban wastes may also be used after recycling as organic fertilisers. In the case of vegetable cultivation, the important thing is that vegetable farmers use less chemical fertilisers, pesticides and insecticides than crop cultivators.

Farming in the homestead, generally by women, is the common phenomenon in the study area. Homestead farming is not only fruitful socio-economically but also environmentally. Almost every vacant plot is being used for economic purposes. It has also important role to balance environment in both micro and macro level. This type of farming makes the homestead clean and environment-friendly. It enhances the quality of microclimate and brings sustainable environment. Vegetable cultivation in a proper way also enhances the aesthetic quality of a home. It makes use backyard vacant spaces, which resist dumping of wastes and growth of jungle.

The rooftop farming is the current important mode of practice to get the resident cool and comfortable. It can be helpful economically in one hand, and can discourage to use air conditioner, which generate green house gases on the other. For the current's necessity of urban greening, urban rooftop farming has been an issue of environmental planning of cities. Most of the city planners are now considering to retain definite urban farming areas to get the city sustainable. It is mentionable that this concept is very essential for the large city where urban forest and green area are converted into built up area. The huge presence of buildings, concrete or metal roads, industries etc. in a large area instigate to be prone of cyclone or tornado and thunderstorm and also make the city a heat island. The provision of greenbelt contributes significantly to deteriorate the frequency and magnitude of tornado or thunderstorm and prevent the city to be a heat island.

The Rajshahi City has not been grown up at the peak of the level of urbanisation. The areas except central business area, almost looks like a semi-urbanised area with huge green plants and agricultural spaces. The practices of rooftop gardening are not significantly marked for economic or environmental purposes rather than hobby or activities in the leisure time. Still now, the proportion of the green area is sustainable with the steady rate of conversion into commercial area or settlement. It would be very important to preserve the provision of greenbelt in the further city planning to get the Rajshahi City comfortable and sustainable. For this reason, urban agriculture, especially vegetable cultivation has pivotal and important role to play.

The wastes, created by domestic activities are called domestic wastes. Generally, it is one kind of by products and renewable resources. These are born after first time use of any resources. It has so much chance to be used in varieties of fruitful ways. Organic household-wastes and sewage contain nutrients for vegetable production. Almost 44% farmers keep their domestic wastes to produce organic fertilisation and used to use in their field.

Urban agriculture has also great contribution to preserve biodiversity. This type of farming includes large range of animals and plants (Ali, Bon and Moustier, 2005). The diversity of animals rearing is in the urban area including different types of fishes, cows, and poultry (chicken, ducks). On the contrary, diversity of plants item include various type of vegetables in various seasons, mango and lichi trees, flowers, banana, papaya, rice, wheat, spices

etc. So, this large diversity in urban farming helps to maintain the food diversity in Rajshahi City.

3.3.6 Social significance

It has already been said that urban agriculture provides benefits to economic and environmental development. These types of benefits make strong positive social contributions too, especially for low-income farmers or urban poor.

Urban agriculture is contributing in the social development in number of ways. Firstly, it is providing income sources and additional income for the family, which helps to create some savings for non-food purchases. Secondly, it is providing employment and jobs, which maintain social equity and stability. Thirdly, it is offering employment opportunities for the women. By which women can contribute directly to their family expenditure. This opportunity also enhances status of women and makes them self-dependent. Finally, for the enhancement of personal or individual involvement in agriculture people get small time to waste which also reduces quarrel, clash and social riot.

3.4 Problems and constraints of urban agriculture

Urbanization means the growth of urban population size and conversion of their occupation from agriculture to non-agriculture activities. Basically, people think that there is no scope of presence of agricultural activities in the city area. Urban agriculture is also found in almost all developed cities in the world. Global estimates show that approximately one third of urban families engage in agriculture, and one-third of urban land is used for agriculture (UNDP, 1996). The Food and Agriculture Organisation (FAO) of the United Nations estimates that 800 million urban residents are involved in commercial or subsistence agriculture in or around cities (FAO, 1999). In developing countries, it is estimated that urban agriculture covers 50% or more of urban land. In the United State, metropolitan areas contain 33% or 696,000 of the estimated 2 million farms in 1991. Approximately 25% of all households are involved in urban agriculture. New York City has over 1000 community gardens; Boston 400; and San Francisco 100. Philadelphia's 'Green' program, which spread to Canada, has an impressive record in urban agriculture. Montreal has 10,000 allotments; Toronto has nearly the same number. Vancouver's 'City Farmer' program has been running for 20 years (Sommers & Smit, 1994). Nonetheless, Rajshahi City development authority and planners are unknown or not interested to include urban agriculture in the policy options in spite of recognizing presence and necessity of agriculture in the urban system. This is one of the vital issues, which confront urban agriculture to the people. The following issues are commonly recognized in the Rajshahi City:

3.4.1 Land and spaces

Nature of land or spaces regulates the productivity of goods and cropping pattern. Scarcity of land or spaces is great problem in the city built up area. Land values are high in the built up or semi-built up area. The conversion of agricultural land to settlement and business or manufacturing always offers

better return, which lead scarcity of land or spaces. Urban poor in the city get very narrower spaces to cultivate. The rich people are not aware enough to use their homestead, balcony or rooftop. Very few of them do farm only some ornamental items on their rooftop. Poor people, especially the female members of a family cultivate some vegetables on their small hut's rooftop in indigenous way. They also rear livestock in very small scale and in subsistent level. In the city area, huge institutional lands are remaining as fallow or vacant land. But, it is remaining unused for a long time because of poor land use policy and lack of knowledge on community farming system.

3.4.2 Marketing

In the developed city, skilled farmers are very rare. But, in the city area like Rajshahi City of Bangladesh, huge skilled farmers and labor are available. But, the labors are generally poorly paid and farmers get poor return from the middleman, as they deserve to survive. Due to the perishable nature of many products, farmers sell quickly to the middleman instead of preserving or selling in the market themselves. Middlemen or city sellers earn more than the farmers do proportionately. That is why, appropriate storage, transportation, packing and marketing facilities are important.

3.4.3 Environment

Environmental threats are importantly concern to urban agriculture. Rapacious and reckless use of agrochemical are always contradictory to sustainable agricultural production. This may be resulted in environmental pollution and heavy residual toxicity, which is harmful to soil, human and animal.

3.4.4 Government Institutions

Urban agriculture gets very few supports from the governments, sometime less than rural agriculture. There is a lack of consideration among government institutions and authorities involved in urban development. Since there is a lack of information or data about urban agriculture, there is a need to undertake more research on this type of activities. In Bangladesh, only Departments of Geography & Environment of Dhaka University and Rajshahi University have done several small-scale researches on urban agriculture. The other universities or research centers like Urban and Regional Planning of Bangladesh University of Engineering and Technology, Jahangir Nagar University and Khulna University are engaged in urban planning research particularly on land use pattern and urban environmental management. There is no specific theme of research as urban agriculture in the noted institutions so far. This type of research is also facing limitations for data management system of city authority. The Rajshahi City Authority is unable to develop agricultural technologies as well as provide agricultural extension services properly. Small farmers can not get loan from Social Safety Net Programs significantly. Agricultural inputs and seeds are very costly and sometime unavailable to the farmers. Irrigation facilities are remarkably developed, but farmers face shortage of water in the summer. Training and skill development activities are not up to the mark so far.

4. Conclusions and recommendation

The traditional concept of agriculture implies agricultural commodities being produced by the agrarian society within a rural set-up and these commodities move towards urban centres to meet the food demands of the urban people along with the rural ones. But with the accelerated rate of urban growth, a large number of urban populations have to be fed every year. To resolve this problem, cities around the globe have adopted agriculture as a part of their conventional urban life, which is called urban agriculture (Mayeed and Choudhury, 1996). Urban and peri-urban agriculture is increasingly being seen as an important component of urban development, and urban environmental management. It is an alternative source of employment, household incomes, nutrition and food security among many low-income urban dwellers (Sawio and Spies, 1999).

Agriculture is still present in almost 18 % area of Rajshahi City and people are residing in the city having agriculture as primary or secondary professional activity. The fringe or periphery area of this city experiences extensive farming activities, particularly vegetable farming. It is clear that in addition to ensuring food security and income opportunities, urban agriculture can also contribute to supply of quality and safe foods, preservation of food biodiversity, environmental enhancement, better utilization of urban vacant or idle spaces and social life improvements.

Awareness among policy makers on the potential and significance of urban agriculture is very few. Farmers are also poorly organized and do not have participation in city planning process. To improve this situation, the study formulate some recommendations to further development of urban agriculture, which are:

Government Responsibilities

Government should formulate proper land use plans at national and municipal level by giving emphasis to the preservation of agricultural land within or urban periphery in a longer-term basis. The role of government would be:

- Establish an interdepartmental committee on urban food production and consumption;
- Create national urban agriculture programs;
- Integrate urban agriculture in the city planning and development policies;
- Organize meeting and seminar on urban agriculture to raise awareness among planners, administrators and non-government organizations;
- Create data base on urban agriculture at national and municipal level; and
- Facilitate the provision of appropriate technology and extension services-training, credit, marketing board, inputs and seeds supply, irrigation, cold storage, transportation etc.

Access to land and utilization of spaces

Policy issues should be geared towards preservation of certain portion of spaces or land for the agriculture in the city area. A plan should be encouraged to make utilized different types of fallow or idle spaces or land.

Environmental Consciousness

Due to its proximity to urban centre, urban agriculture should pay particular attention to its impact on the environment. Appropriate resource management and monitoring should be undertake in order to minimise, if not entirely eliminate, any negative environmental and health effects of urban agriculture (APO, 2002). Farmers should be educated on the health-related problems associated with farming activities to increase precautionary measure (Anosike, Odunuga and Fasoka, 2005).

Education and research

Education and research should be promoted by government and non-government organizations to create database of urban agriculture and to create opportunities for further research.

Farmer Organisation

Public awareness campaigns should be initiated on the relevance of urban agriculture for urban food security, employment and income generating activities (Anosike, Odunuga and Fasoka, 2005). The farmers should be organised to keep their right and make their livelihood sustainable. The contribution of the farmers to urban economic, social and environmental development also needs to be recognised and circulated.

At last, it is mentionable here that political support, financial support and further research are necessary in enhancing the contribution of urban agriculture to sustainable urban development. It should be included in urban development polices such as city development policy, land use policy, health policy, environmental policy and social development policy. Virtually, with effective planning, urban agriculture can develop and blossom into its full potential and contribute to the economy of Rajshahi City of Bangladesh.

References

- Ali, Mubarik, Bon, H. and Moustier, Paule. (2005), "Promoting the Multifunctionality of Urban and Periurban Agriculture in Hanoi" *Urban Agriculture Magazine*. No. 15. Pp. 11-13.
- Anosike, V., Odunnuga, S. and Fasona, M. (2005), "Multifunctional Land Use in a Small Urban Agricultural Community in Lagos" *Urban Agriculture Magazine*. No. 15. Pp. 40-41.

- APO (Asian Productivity Organization). (2002) *Urban Fringe Agriculture*. APO. Tokyo, Japan.
- Baumgartner, B. and H. Belevi, (2001). *A Systematic Overview of Urban Agriculture in Developing Countries*. Web Page Information: www.sandec.ch/UrbanAgriculture/documents/general/syst_overv_on_ua_in_dc_report_san092001.pdf
- Drescher, A. W., Jacobi, P. and Amend, J. (2000). "Urban Food Security Urban Agriculture, A Response to Crisis?". *Urban Agriculture Magazine*. Volume 1, Number 1. pp. 8-10.
- FAO (Food and Agricultural Organization), (1999), *Issues in Urban Agriculture*. Web Page Information FAO: <http://www.fao.org/ag/magazine/9901sp2.htm>.
- Fleury, A. and Ba, Awe. (2005), "Multifunctionality and Sustainability of Urban Agriculture", *Urban Agriculture Magazine*. No. 15. pp. 4-6.
- Mayeed, M. and N. Y. Choudhury.(1996). "Agriculture in Urban Context: A Case Study of Dhaka City" *Oriental Geographer*. Vol. 40. Pp. 22-35.
- Mougeot, L. J. A. (2000), "Urban Agriculture: Definition, Presence, Potentials and Risks", In: Bakker, N. et al. (eds). 2000. *Growing Cities, Growing Food: Urban Agriculture on the Policy Agenda*. German Foundation of International Development. Feldafing, Germany.
- Rana, M. M. P. (2005) 'Development of Urban Agriculture: A Case Study of Rajshahi Metropolitan Area', Unpublished M. Phil. Dissertation. Department of Geography & Environmental Studies, Rajshahi University, Bangladesh.
- RDA (Rajshahi Development Authority). (2003), *Structure Plan, Master Plan and Detailed Area Development Plan for Rajshahi Metropolitan City*, Ministry of Housing and Public Works, Government of the People's Republic of Bangladesh.
- Rumi, S.R.A and Shaikh.A.H. (2000), *Nagar Krishi: Rajshahi Shahorer Akti Shomikkha* (Urban Agriculture: A Study of Rajshahi City). In: Khan, et al. 2000. *Bangladesher Bhugol: Nirbacito Provondhahmala* (Geography of Bangladesh: Selected Articles). Department of Geography and Environmental Studies, University of Rajshahi. Bangladesh.
- Sawio, C. J. and Spies, L. (1999), Towards the Establishment of a Development and Research /Training Network on Urban Agriculture for East and Southern Africa. Paper presented at the ISBRA M-FAO Workshop on Urban and Peri-urban Agriculture, Accra, 2-6 August.

Sommers, P. and Smit, J., (1994), Promoting Urban Agriculture: A Strategy Framework for Planners in North America, Europe and Asia. CFP Report 9. The Urban Agriculture Network.

Van Den Berg, L. M. (2000), "Urban Agriculture as the Combination of two 'impossible' through Sustainable Trends", Paper of IGU-Commission on Sustainable Rural Systems. Pusan Conference, Korea, August 8-13.

UNDP (United Nations Development Programs), (1996) "Urban Agriculture: Food, Jobs and Sustainable Cities" Publication Series for Habitat II, Volume One, UNDP, New York.

THE PATTERNS OF URBAN SERVICES DELIVERY SYSTEM AND THE ENVIRONMENTAL MANAGEMENT IN KHULNA CITY

Md. Mujibor Rahman*
Farhana Afroj**

Abstract: The rapid increase of urban population in Bangladesh creating the problems of slum and squatter settlements. It has made a bother allege on the already over utilized civic facilities and twisted a state of disequilibrium in the urban environment. The living conditions as well as the environment in slums are miserable because of the lack of different indispensable services necessary for decent living in the urban area. The study was conducted in the Rupsha slum of Khulna City and the selected services for this study were water supply, sanitation, drainage, and solid waste management and health facilities. The present study finds out the condition or the accessibility of the selected basic services of the slum dwellers. It observed that 90% of the people deprived from health facilities, 80% from solid waste management, 52% sanitation 40% from drainage and 35% from water supply. This study also reveals the problems of the slum dwellers for the access to these selected basic services with addition to their level of satisfaction. It finds out that as the local authority KCC is responsible to provide adequate services to the urbanities and also provide maintenance of such services. The present study tries to elaborate the management options for improving these urban services delivery for environmental management.

Introduction

In Bangladesh the major urban areas are highly congested due to the high density of population, where all the utilities are either insufficient or absent population. The condition of slum dweller the country is very poor in terms of basic needs and services. The urban poor should consider as an integral part of the city like other social groups and classes. These poor people live in the slums and squatters settlements. They do not have minimum access to basic urban services needed for their living. According to the definition of the urban poor by the World Bank there are 12.45 million urban poor and 6.97 million urban hard-core poor in Bangladesh,

*Dr. Md. Mujibor Rahman, Assistant Professor, Environmental Science Discipline, Khulna University, Khulna

** Lecturer, Environmental Science Discipline, Khulna University, Khulna.

who lived in slum squatter settlements (Islam, 1998). The word slum which first appeared in Vaux's Flash Dictionary in 1812 was derived from slumbers, which mean a sleepy unknown back alley. Slum meant 'wet mire' where working class housing was built during British Industrial revolution in order to be near the factories (Howlader et al., 1993). These were uncontrolled settlements and lacked basic services and only poor people lived in this place. According to the definition of slum by an Expert Group of the United Nations, a slum is an area that combines to various extents the following characteristics namely; (i) inadequate access to safe water; (ii) inadequate access to sanitation and other infrastructure; (iii) poor structural quality of housing; (iv) overcrowding; and (v) insecure residential status (Islam, 1998). Khulna is one of the metropolitan cities of Bangladesh. It is an industrial based city. Large numbers of industrial laborers are lived in the city area. Most of them live in the slum area. It is one of the reasons responsible for growing slums. By the continuous process of urbanization, a numbers slums are taking place across the cities with overcrowding, deterioration of environmental conditions and aggravating social problems from heavy concentration of population. The proliferation of slums is thus one of the most visible consequences of urbanization all over the world.

Slum population has largely increased in Bangladesh over the last three decades along with the growth and expansion of cities and towns. When growth of urban population takes place at a rapid rate most cities and towns are unable to cope with the changing situation because of their internal resources constraints and management limitations. Rapid urbanization, caused largely by heavy influx of migrants from rural areas, has exerted severe pressure on public services in the metropolitan city of Khulna with which the expansion of infrastructure and basic urban services could not cope. This situation coupled with the destitute economic condition of poor migrants has given rise to the formation coupled with the destitute economic condition of poor migrants has given rise to the formation large numbers of slum, where services inadequacies have been compounded and multiplied on a massive scale, resulting in a hazardous environmental condition (Desai and Devdas, 1998).

Khulna is one of the metropolitan cities of Bangladesh. It is an industrial based city. Large numbers of industrial labourers are lived in the city area. Most of them live in the slum area. It is one of the reasons responsible for growing slums. By the continuous process of urbanization, more and more slums are taking place across the cities with overcrowding, deterioration of environmental conditions and aggravating social problems from heavy concentration of population. The proliferation of slums is thus one of the most visible consequences of urbanization all over the world. The characteristics of urban slums are as i) Urban slums are the settlement or areas of poor or bad housing. Poor or bad housing means the housing, which has inadequate light, air, toilet and bathing, which are in bad repair, dump and that do not afford opportunity for family privacy; ii) highly crowded room. (Three or more adults per room); iii) poor sewerage or drainage conditions; iv) inadequate water supply; v) irregular or no garbage disposal facilities; vi) little or no paved roads; vii) insufficient or no street lighting; viii) no access to gas facility and ix) the land is overcrowded and leaving no space for recreational use.

Islam (1992) said in his book *Paribesh Prosongo, Bangladesh Paribesh* (Environment and the Environment of Bangladesh) that urban poor mainly live in slum area and due to poverty, they degrade the surrounding environment and they bounded to live in polluted environment. He discussed about willingness and

capability to protect the environment. But he didn't focus about the services that are provided by responsible authority. Nazrul Islam, 1996 in his book *THE URBAN POOR IN BANGLADESH* discussed about the relation between urbanization and the magnitude of urban poverty in Bangladesh with spatial discussion on the urban Poor's access to different service facilities and housing. Kazi Ataul Haque and A.K.M. Khorshed (March 1987) illustrated in their book "Low Cost Housing in Bangladesh" about the alternative solution and techniques for low cost housing development in Bangladesh with a perspective to facilitate the lower income grope of people. Rahman (1992) focused in his study *Environment and Development in Bangladesh* (vol.1) about the magnitude of the impact on environment and poor to each other. Moreover he had a broad discussion on environmental education and awareness of the urban poor on the national and government level. But he didn't focus especially on the slums and the slum dwellers. In the Report Card on Services Delivered by the Chittagong City Corporation, Reported by Democracywatch: the City Corporation is a hybrid category, which come in between the government and the private sector and could either have best of both the world, or completely the opposite. It is this possibility, which makes the city corporation an interesting public institution. It would be worthwhile to explore what are the cycling needs for public services as felt by not only the citizens living within the confines of a city corporation but by the nation as a whole which such a city serves. Here slum areas services are not separately focused. The article "Bangladesh Saharanchaler Basti Unnoyan Samassha" (The problems of Bosti development in urban sector of Bangladesh) discussed the statistical and fact finding information of overall Bangladesh. The introductory summary of Local Government Engineering Department (LGED) activities on different slums of Bangladesh are also discussed here. Prof Monirul Islam Khan, a sociologist of Dhaka University warns "Unplanned and hasty eviction of slums will escalate vagrancies, criminal activities and social chaos". The centre for urban studies conducted on the living style of the urban poor in Bangladesh with special reference to mothers and children. This study was an investigation into the physical environment of the urban poor. But the study didn't focus about the condition of the services that are provided by the responsible authority. All these published books, reports and researches are focused about the problems of the poor, their environmental condition and also discussed about the physical services, social welfare services and educational services. They do not discuss about the problems of the basic services of the slum dwellers and also the respective organizational activities. But this study reveals about the condition of the some selected basic services and their problems and also the level of satisfaction of the slum dwellers. And the services are to be selected based of responsible organizations delivered services. In this context this study is fully exceptional.

Objectives: The objectives of the study are:

- (i) To explore the conditions and the problems of selected services in the study area provided by Khulna City Corporation (KCC);
- (ii) To measure the level of satisfaction of the study area dwellers in terms of scaling of services provided; and
- (iii) To suggest some management options for improving the quality of services of KCC in the study area.

Methodology

Slums are unexpected but very frequent features existing in our urban areas. At present Khulna has 170 slums in KCC area and around 1,40,234 people are living in those slums (BBS, 2004). From several published articles and own observation, it has been observed that those people living in the slums are deprived from the availability of the services provided by KCC. The identification of the services among the services was supposed to get, the qualitative aspects of the services were having the satisfaction or by comments regarding these services by the slum dwellers etc. events conceptualize this study. The considered services were water supply, sanitation, solid waste disposal, and drainage and health facilities. The deplorable conditions of the services of the slum not only affect the slum itself, but also injure the adjacent areas. Besides, if the conditions of these services were deplorable, various types of diseases occurred through out the slum areas and their living condition also dilapidated. By considering the above reason these services were select as for study. Urban delivery services in the slum area are a much-talked issue of present time that seeks effective attention. Some studies have been conducted on this issue in the country. But most of them have considered the issue of capital city Dhaka and its peripheral areas as the capital city surely has due importance from various points of view. As Khulna is one of the divisional city of the country and also an industrial and large city, this city also needs specific studies on this topic. Considering all these importance Khulna city has been chosen for the study. The sample area (Rupsha slum) of the present study has been selected on the basis of size, location, livelihood pattern and other essential characteristics which are essential aspects for the study. So Rupsha slum is selected for this study as it is one of the largest and oldest slums in KCC. The knowledge gathered from the reconnaissance survey also helped to select the sampling unit. The household head of the Rupsha slum collaborated with the KCC officials were selected for the primary sources of information for better improvement of urban services and also for identifying the existing condition of the basic services. In these techniques used for primary data collection using systematic random sample technique. The random selection would avoid the biasness and ensure the equal probability of any respondent from anywhere in the selected slum. After performing the reconnaissance visit a clear and structured questionnaire has been prepared.

Data analysis

The slum dwellers are the lower class people of the city and they live within the unhygienic condition (Islam, 1992) and the informal sectors of the city mostly hold by them. They are also the major portions of city people and KCC provide municipal services for their urbanities. The conditions of the services that are consumed by the slum dwellers are really dilapidated. KCC authority is the responsible organization for providing municipal services for their dwellers (CUS, 2000). Slums have the legal ownership of land and they are also the urbanities of Khulna city. KCC is the local authority for the urban dwellers to provide municipal services. The requirement as well as maintenance also provide by the KCC authority within their jurisdiction. For these services they are getting holding tax as well as water tax. As this is the Governmental organization so government also financially support them. KCC provides so many services for the urbanities and they do the maintenance of such services.

Consumption pattern of the slum dwellers

Slum dwellers are enjoying municipal services that are provided by the KCC authority. The main Municipal services includes water supply, sanitation, drainage, solid waste management, health facilities, educational facilities, public toilet, street light, road maintenance, mosquito control, graveyard, community service, park. But some basic services like water supply, sanitation, and drainage are the door to door service. The land of slum is legal but their houses are not legal so they do not get door to door service. But they should have access to all services that are provided by the KCC authority. From the household survey it was found that slum dwellers have better access to some services like sanitation facilities, water supply and mosquito control while on the other hand they have no access to some services like health facilities and solid waste management facilities. But the KCC authority provides such services for their urbanities. So the reason may be lack of awareness or any other. In case of basic services like water supply, sanitation, drainage, solid waste management the percentage are respectively 65%, 48%, 60%, and 20% (Table 1). The slum dwellers have very poor access to some services provided by KCC. According to field survey these services are health facilities, educational facilities, street light, mosquito control, road maintenance etc.

Table 1: Existing services consumed by the slum dwellers provided by KCC authority

Types of services	Access to services (in percentage)	
	Yes	No
Water supply	65	35
Sanitation	48	52
Drainage	60	40
Solid waste management	20	80
Educational facilities	25	75
Health facilities	10	90
Public toilet	20	80
Street light	35	65
Road maintenance	50	50
Mosquito control	20	80
Graveyard	15	85

Source: Field survey, 2005.

The Table 1 shows that the slum dwellers of the study area have good access to some services and limited access to some services provided by the KCC authority. From the above Table 1 it has been found that the slum dwellers have limited access to solid waste management, educational facilities, health facilities, street light and road maintenance, and 80%, 75%, 90%, 65% and 50% respectively.

Condition of water supply facilities

The existing condition of water supply is inadequate for the rapidly growing urban population. Most of the diseases, which are to be found to the slum dwellers, were water born. Many of them do not get sufficient water for different purpose, on the other hand, they also waste tube well water when they get. Slum dwellers have no access to the piped water supply. Usually they get shallow tube well water. KCC is the responsible authority for the water supply in this city. KCC provide piped water supply and shallow and deep tube- wells in the city. Piped water supply is generally provided from house to house and a few roadside taps for the common public use (KCC). Usually they get tube-well water and also they have to depend upon pond or river water.

Slum dwellers mainly use deep and shallow tube well for their drinking purpose that are delivered by the KCC authority. Under the Slum Improvement Project (SIP) program 40 deep tube wells, 60 shallow tube wells were given in the study area by KCC from the duration of 1992 to 1996, but many of them do not exist at present. The existing sources of water supply are not sufficient for the rapidly growing population of the slum. A long line for water collection is a daily phenomenon of this slum. People get 85% drinking water from the deep tube well and 15% people get their drinking water from the shallow tube well. The slum dwellers of the Rupsha slum mainly use deep and shallow tube well water for their cooking purpose. Some household members use river or pond water for meeting their cooking needs. It has been found that 25% family uses deep tube well water for their cooking purpose whereas maximum 60% family uses shallow tube well water for meeting the need of cooking sectors and only 15% family uses other sources among the surveyed households. The slum dwellers of the Rupsha slum mainly uses deep and shallow tube well water for their bathing and washing purposes. Some household members use river or pond water for meeting their cooking needs. It has been found that 23% family uses deep tube well water for their bathing and washing purposes whereas maximum 59% family uses shallow tube well water for meeting the need of cooking sectors and only 18% family uses other sources (river water) among the surveyed households in the study area.

Most of the slum dwellers are dependent on tube-well water. But all families do not have equal access to the tube-well water. This is mainly due to the difference in the distance of the tube-wells from their individual houses. Usually women of slums collect water from the tube-wells. As the sources are over populated most of the time they have to wait long time to collect a jar of water. As a result families near the sources have better access to the tube-well water. By survey in the study area it was found that about fifty household use only 01 tube well. About 6% families among the surveyed families have to go below 100 feet for collecting water for using in different purposes, again 6% go 101 to 200 feet, 17% go 351 to 500 feet and 19% families go above 500 feet from their houses for collecting necessary water. But most of the sources around the slums are unhygienic. Slum people use the same water sources for drinking, cooking, washing and bathing purpose. Kitchen wastes are very common near the water sources around slums. The long duration of water source will increase the satisfaction level and vice versa. It has been found that slum dwellers always get water from shallow tube well and deep tube well (within slum area) in the study area and they get water from river source when necessary for using in different purposes. The deep tube well outside of slum area cannot supply water to the slum dwellers always. In this case the slum dwellers collect drinking water from the outside deep tube wells in the certain time of day. Tap and pipe water is absent in the slum.

Table 2: Condition of the maintenance by KCC authority of sources water supply

Sources of water supply	Maintenance by KCC (in percentage)		
	As required	Long term delay	KCC didn't care
Shallow tube-well	8	68	24
Deep tube-well	4	55	41
Tap	--	--	--
Pipe	--	--	--

Source: Field survey, 2005.

The Table 2 shows the maintenance of the sources of water supply by the KCC authority of the study areas. For tube well (both shallow and deep) long term delay is the main phenomenon. For shallow tube well about 68% family gave their opinion that KCC authority delay long-term maintenance. For deep tube well 55% family gave their opinion that KCC authority delay long-term maintenance. KCC also didn't care for maintenance of the sources of water.

Satisfaction level of the users

Satisfaction level is categorized here as high, medium and low. The satisfaction level in the study area mainly depends on two factors. First factor is the volume of water they get from the sources and the second factor is the distance of the sources. About 25% respondents among the surveyed respondents are highly satisfied with the water supply condition in the Rupsha slum where as the medium satisfaction level is 20%. The above also shows that maximum 55% respondent's satisfaction levels for water supply condition are low. The most important reason beyond this low satisfaction level is the presence of salinity in the drinking water in the deep tube wells, which are situated within the slum area.

Problems of the slum dwellers in access to water supply

In the study area the accessibility level of safe drinking water is poor. A very few number of shallow and deep tube-wells are unevenly distributed in and around the area; More than 50 families use one tube-well for drinking water. Piped water supply and tap water supply is absent in the study area. As a result a part of the slum peoples have not easy access to the safe source to collect drinking water. Deep tube-well is not present in every alley of Rupsha slum. As a result some portion of the household have to collect drinking water from the outside of the slum area which is about one kilometer far away from their house and take time, cost and labour. Water source location is an important phenomenon to the living condition or the slum dwellers. Sometime the slum people dispose their kitchen waste by the side of the tube-wells. As a result the water sources lost the healthy environment. The people use these sources and fall into different water born diseases. About 40% respondents think that the existing drinking water in the slum is not safe for drinking because of the salinity intrusion in the ground water level. This is the main problem in the context of drinking purpose in the Rupsha slum. For this reason a large portion of the families of the study area collect drinking water from a long distance (about 1 or 2 km) by van rickshaw from Rupsha Bus stand. The other major problems in access to water supply condition by the slum dwellers includes lack of maintenance of tube well by the authority 14%, financial inaptitude to avail the services 20%, unhygienic environment in the surrounding area of the sources 8%.

Condition of the sanitation facilities

Proper sanitation can control many excreta-related diseases. However, to improve health conditions through improved sanitation, it is necessary to have a clear understanding of the diseases that are prevalent in absence of proper sanitation and their transmission routes. These diseases are excreta-related and are caused by microorganisms such as viruses, bacteria, protozoa and helminthes or worms (Ahmed *et al.*, 2003). In the Rupsha Slum 50 community latrines were built by KCC from the year 1993 till today. Many of them are shattered for the lack of proper maintenance. It was found that 20-30 family share only 3 or 4 latrines. KCC as well as some NGO

built community latrines in the Rupsha slum in different time period. About 60% of the family use community sanitary latrine, 27% uses kutchra latrine and 7% use river side open latrine and remaining 6% uses open space for defecation. Though the number of community sanitary latrine users are high but the amount of this type of latrine are not adequate. As a result a large proportion of households share only one community sanitary latrine and the condition of these latrines are not satisfactory.

Satisfaction level of the users

Slum dwellers of the study area are not really satisfied with the present sanitation facilities. The satisfaction level in the study area mainly depends on two factors. First factor is the type of the latrine they get from and the second factor is the distance of the sources. It has been found that 55% respondent among the surveyed persons are highly satisfied with the existing sanitation facilities in the study area. The satisfaction levels of some respondents are medium 25% and low 20% in the study area.

Problems of the slum dwellers in access to sanitation facilities

In the study area the accessibility level of sanitation facilities is moderate. The number of sanitation latrine exist in the slum are not adequate in the context of the total household member; More than 50 families use only one sanitary latrine. As a result a part of the slum peoples have not easy access to the sanitation facilities. So some portion of the slum dwellers uses riverside for their sanitation needs which is unhygienic and threats to their health; the surrounding space of every sanitary latrine in the slum area is mostly dirty and unhygienic. They dispose waste attached with the sources. Sometime the slum people dispose their kitchen waste by the side of the latrine. As a result the sanitary latrine lost the healthy environment. The people use these sources and fall into different types of diseases; and the location of the sanitary latrine is not in appropriate situation. As a result some slum dwellers have to face some difficulties for long distance from their houses and also have to wait for the inadequate number of sanitary latrine. Various important reasons, which are acting as responsible factor for not available, the sanitation services according to the slum dwellers in the Rupsha. It has been found that 60% respondents among the surveyed respondents think that financial ineptitude to avail the service is the main cause for not available the proper sanitation facilities where as 20% respondents think that institutional difficulties are the main problem. Among the various reasons some other problem includes illegal status of the tenant 10% and others.

Condition of drainage facilities

Drainage condition in the slum of the study area is miserable. Unavailability of sufficient drainage in the desirable distance forces the people of slums to dispose wastewater and sometimes-solid waste here and there around the houses. Thus insufficient drainage causes the poor sanitation condition in the area. Lack of proper maintenance of the existing drainage system and over and above disposal of solid wastes into the drains, inadequate drain sections, natural siltation, and absence of outlets, indefinite drainage outlets and drainage paths are accounted for the prime causes of blocking in drainage system and water logging. In addition, seasonal tidal effect and flat topography of land are also causing water logging. For the consequences of such drainage condition slum dwellers faces tremendous environmental hazards and fallen into so many diseases. There are three types of

drains in terms of width and depth in the study area. First, the drains beside main roads have 4-5 feet width and the concrete slab covers 4 feet depth and this type of drain. Second, there are some drains, whose width is 2-3 feet and depth is about 3 feet, beside the access road and most of this drain are open. Third, other type of drains has width of 8-14 inches and depth of 1 feet and this type of drain are fully open. Most of the slum dwellers have access to the drains of third category but this is not sufficient for them.

The different types and number of drains existing in the study area, which was revealed by the field survey. It has been found that 20% slum dwellers have no access even to the smallest drains for the distance of the drains from their house. About 32% families have easy access to the small drains in the area. The rest 20% families can use the second category drains which have 2-3 feet width and about 3 feet depth with. Also about 28% families use the first category drain for the little distance from their houses in the study area. According to KCC source, the total length of various types of existing drains is about 381 km in the KCC area and about 68% of the households have no planned drainage facilities while only 32% have some sort of drainage facilities. Some families where the drains are not in close proximity dispose water and solid waste in front or back attached to their houses. In this way they create unhygienic environment for living in the slum. The slum dwellers are more or less uneducated and unaware about the cleanliness and health care. So they keep doing the same for long.

Satisfaction level of the users

The slum dwellers do not get enough drainage facilities as they need for the improper maintenance of the few existing drainage facilities in the study area and also the existing facilities are not in good condition. Satisfaction level is categorized here as high, medium and low. Slum dwellers satisfaction level in the study area mainly depends on the condition of the existing facilities and their maintenance. It has been found that 50% respondents are highly satisfied with the drainage facilities where as 30% and 20% respondents satisfaction level are medium and low respectively.

Problems of the slum dwellers in access to drainage facilities

Inadequate drainage is a common character in the slums of Bangladesh. Usually the situation is the absence or low standard of drainage for storm and surface water in the slums. In the study area the pointed drainage problems are; Very often slum dwellers dispose waste in drains closed to their house. So the flow of water is hampered in the slum area. The authority does not maintain the cleaning of these drains regularly or according to the need. For that water logging occur very often in the area. Especially during rainy season water logging is a common picture in and around the slums of the study area. Sometimes heavy rainfall creates water logging inside the houses for the absence of sufficient drainage facilities in the slum area. Most of the families of slums have very little access to drainage facilities. Some families have the accessibility to some drains having width of 8-14 inch. Some families dispose different types of waste in the drains, which create obstacle for the smooth flow of water through these drains. The houses of the slum are not arranged well. Most of the houses have no direct access to any drain. Sometimes it is found that little house is enjoying the direct access to drainage facilities because of the spatial existence beside the outlet drains. As a result most of the families of the slum through waste water here and there attached to their houses that creates noisy and

wet environment in slum. All narrow drains are open drains. Different type of waste disposed by the slum dwellers in the drains is open to the insects. Thus it is dangerous for health of the slum dwellers. There is no provision for the regular cleaning of the drains in the slum areas in the city. Therefore the waste disposed in the drains may overflow sometimes. It causes environmental pollution as well as the health hazard. It has been found that about 29% people thought that narrow drain is the main problem in access to drainage facilities. Other prominent problems are the solid waste disposal off into the drain 25%, water logging 15%, not clean regularly or as necessary 25%, and polythene holds 6% respectively. For solving the problems related with KCC does not play a vital role because the drainage condition in the slum area is negligible. Though the numbers of drainage in the study area are insufficient, the proper maintenance and regular cleaning can eliminate so many hazards easily.

Role of KCC authority for solving the drainage problem

Khulna City Corporation is the responsible authority for monitoring and solving the different problems related with all urban services provided in the slum area. Here the roles of KCC authority for solving drainage problems are categorized as good, fair and bad. These categorizations mainly depend on the respondents' own feelings. About 25% respondents among the surveyed persons think that the roles of KCC for solving drainage problems are good. The KCC role for solving drainage problems are fair 25% and bad 50% where good has 25%, fair is 25% and bad is 50%, which is maximum value.

Condition of the solid waste management

Disposal of solid waste is a real problem for the residents of the city as well as slum dwellers due to its unsatisfactory management system. About 29% of the households in the KCC area dispose off the solid wastes into the dustbin provided by KCC and the remaining 71% have no any fixed place for waste disposal facilities and the daily collection efficiency is only 23% of the waste generated in the KCC area (KDA Master Plan, vol.11). So the picture of solid waste management by the KCC authority is vulnerable and in slum areas it is more prominent. There are so many problems encountered by the slum dwellers for solid waste disposal as well as management by the KCC authority. Slum dwellers have poor access to solid waste disposal because there are few dustbins beside the slum areas and these dustbins are far away from their house but they produce solid waste every day. Very often most of the slum dwellers dispose off their solid waste near their house drain i.e. not in the dustbin and here and there. It has been found that only about 12% of the households dispose off their garbage in dustbins whereas 39% of the households throw waste into nearby drain and 15% of the households throw indiscriminately.

It has also been found from the results of household's survey that after disposal of waste, cleaning of this is not frequent or as necessary. Only 5% households gave their opinion about regular cleaning. But the KCC authority has the regular cleaning schedule of their dustbin. It also has been found that maximum 85% families among the surveyed respondents in the study area think that the duration of cleaning of the community bins is not frequent which indicates the poor access to this facility in the study area.

Satisfaction level of the users

Satisfaction level is categorized here as high, medium and low. Slum dwellers satisfaction level in the study area mainly depends on the condition of the existing facilities, cleaning, number of required dustbins and their maintenance. About 40% households are highly satisfied with waste disposal facilities though there are no good facilities in their area for waste disposal. The reason for this highest percentage is their unawareness about the necessity of this facility.

Problems of the slum dwellers in access to solid waste disposal

Disposal of solid waste is a real problem for the city dwellers and for the slum dwellers it is more prominent due to its unsatisfactory management system. The present number of sweepers, dustbins, trucks and handcarts are insufficient for the present needs of slum dwellers. Accumulation of large amount of uncollected wastes produces strong offensive odour, and pollutes the air seriously. It also acts as a breeding ground for mosquitoes, flies, and other insects. Moreover, it helps to produce and spread of pathogenic microorganisms in the surrounding environment. The leachates from these degrading wastes can pollute the ground and surface water and can change the water quality. The present methods of collection and disposal of solid wastes are very inefficient in the study area and the condition of solid waste management with addition to its impact in the surroundings is really deplorable. Some NGOs' recently working in few of the areas for proper solid waste management system. The condition and performance of these non-governmental organizations are better than the legal authority (KCC) in some context. The present design of communal bin is not satisfactory, as it is open, which allows entry of rainwater and results leachate. Birds and other rodents spread the refuse, and scavengers can easily scatter the wastes. As a result, in the study area unhygienic and in sanitary condition prevail around the bins. The real phenomenon of the slum dwellers problems to access solid waste disposal. About 35% of the households have not enough dustbins to dispose off their waste, so they dispose off their waste into the nearby road and drain or here and there beside their houses. Dustbins are not cleaned, as required 20% is the prominent problem that is encountered by the slum dwellers. Besides negligence of the KCC authority 7% also the prominent one.

Health facilities

Health is one of most important basic need of the human life. Only ensuring better health can give guarantee of prosperous nation. Therefore, it is important to give priority on health sector for any country. The health condition slum children are also a critical issue. One of the objectives of SIP (Slum Improvement Project) was to develop the nutrition and health conditions of children and women that reflect the importance of slum dwellers health. The condition of slum dwellers of the country is very poor in terms of basic needs such as food, cloth, shelter, education and health (Howlader et al., 1993). Disease causation not only depends on environmental condition but also socioeconomic conditions of the human beings. The socio economic conditions of the study area not in a satisfaction level as well as environmental and living conditions of slum. This causes continuous flow different diseases causation among different age groups of slum dwellers of the study area illustrates the percentage distribution of the slum dwellers that reported to be suffered during last six months from the time of survey in the study area. Among them major share of slum dwellers are suffering from ARI (Acute Respiratory

Infection). Around 32% slum dwellers were suffering from ARI. Second major disease is DD (Diarrhoeal Diseases) and this was 26%, Fever and cough attacked 18% slum dwellers of the study area and this fever was mostly viral fever. 4% were suffering from measles, 10% were suffering from skin disease and 10% found to be free of diseases. It could be interpreted that diarrhoea, fever and ARI were very frequent among slum dwellers. This was because of unhygienic condition of slum, poor housing condition and for low level of income and education level. From field, it has also been observed that children of the study area repeatedly suffer from fever and cough, diarrhoea and measles.

Health service facilities are basic need for human beings. Slum dwellers must have access to the highest possible standards of health and nutrition, not only for physical growth and well being but in order to develop in every other way as well (Bartlett, 1999). In the study area, it was found that households' heads have different choices for any medical treatment for children. About 30% of respondents chose doctor, 25% chose dispensary, 25% chose health centre and 17% chose hospital and only 3% chose clinic due to expensive cost for any medical treatment. From the field survey it has been observed that there are four dispensary, two health centres, and four doctors including Homeopath within 1 km from the study area. Their private clinic situated within 5 km from the study area and there are non-govt hospital surrounding the study area.

Management option for the improvement of the services

Municipal institution including City Corporation occupies an important place in the overall system of administration and Governance in Bangladesh. This role of the municipal institution is mainly two types. Firstly, as key local government bodies for urban areas of the country and secondly, as agencies rendering important public services and facilities to the urban population. As local government bodies constitute under law and function as autonomous self-government units and agencies of public service, they shoulder the responsibilities for providing a wide range of civic services to the people of the urban areas (Rahman, 2002). KCC has an Ordinance entitled "The Khulna Municipal Corporation Ordinance, 1984". KCC perform its activities according to the Ordinance. In KCC ordinance, functions of the provided services are stated but for study all the functions are not important. The current trend is to develop management options tailored to local needs and capacity, with an equation between local authorities, private sector and communities. These options are described in various recent publications, and in many countries experience is being built. Many improvement projects around the world are private public partnerships. These range from government agencies that use private contractors for construction through to government agencies which act in regulatory roles with all services being provided usually on a contract basis, by private groups. Furthermore, few government agencies are able to develop successfully the detailed work required for community organization and mobilization. The NGO sector can play a vital role in this. Interestingly these management options are being tested in many small towns, but could prove very valuable for meeting the challenges of big agglomerations where water producing utilities are required to enter into partnership with different private and semi private smaller providers. KCC is the responsible authority to provide municipal services to its dwellers. According to the KCC ordinance it is mentioned that KCC provide services to dwellers and they have also the provision of maintenance of these services. Water supply is one of the most important basic needs of the people

in any locality with addition to in the slum area. Various types of serious, infectious and viral diseases are closely related with water supply situation. Among all the diseases of human being about 90% are water borne diseases. So for the improving the urban services delivery it is very much necessary to ensure the environmental management of water supply situation in the study area. It has been found that the exist 14 deep tube well and 28 shallow tube well in the study area and about 85 households can use only 1 deep tube well and 43 households can use only one shallow tube well. By field survey it has been found that the demand of the slum dwellers are 30 deep tube wells and 60 shallow tube well. If the help of legal authority can fill this demand then about 40 households will use one deep tube well and 20 households will use one shallow tube well. It has been found that there exist about 42 tube wells (both shallow and deep) and about 28 households can use only one tube well in average by this existing tube well. The demands of slum dwellers are 90 tube wells by which only 13 households can use one tube well. From this study some specific problems of the slum dwellers in the context of the water supply situation are identified by questionnaire survey which will help to make the management plan for this slum.

Management options for the improving the water supply situation

About 85% slum dwellers collect drinking water from deep tube well and 15% collect from the shallow tube well. About 25% slum dwellers use deep tube well water for cooking purpose and 60% use shallow tube well water for their cooking purposes and 15% uses other sources for meeting this need. The number of tube wells must be increased and evenly distributed in and around the slum area for reducing the suffering of the slum dwellers in the study area. The facility of pipe water and tap water should be introduced in the slum area, which will make the easy access to the safe source to collect drinking water for some portion of dwellers. Deep tube well must be set up in the every alley of study area, which will reduce the sufferings of some dwellers of the study area for collecting drinking water. Though there exist a large number of deep tube wells in the study area, the drinking water of this deep tube well is not safe for drinking because of its high salinity. In this situation the legal authority (KCC) can take initiative consulting with the specialist of this sector for remove this problem, which will increase the efficiency of environmental management of this sector. The location and surrounding space of the water sources must be suitable to ensure the healthy and hygienic environment and space for bathing and washing also should be separate. About 14% slum dwellers think that lack of maintenance of the authority is one of the main problems relating with water supply condition. So the authority must be sincere with their duty for reducing the sufferings of the slum dwellers, which will act as the indicator of environmental management. Finally the slum dwellers have to be aware about the problems, mitigation, and their duty for which both the government and non-government organization can work for the welfare of the slum dwellers.

Management options for improving drainage problem

Water logging is closely related with drainage problem. In the study area it has been found that main problem of drainage sector is waste disposal into the drain by the slum dwellers for which flow of water is hampered in the slum area. For the improvement of this problem there should be initiate awareness programme, increasing the width of drains and increasing the number of community bins in the

study area. In a nutshell the drainage facilities should be sufficient in the slum area, which reduces water logging inside the houses. 32% family has access to the 1 foot width 1 foot depth drains and 20% family have no access to any kind of drain. In this situation more drains should provide with the evenly distribution in the slum area. KCC have to play the vital role for improving the drainage problem. Though the numbers of drainage in the study area are insufficient, the proper maintenance and regular cleaning can eliminate so many hazards easily. The authority has some limitations like resource constraints to solve the entire problem in the whole city. In this case the community organization and non-governmental organizations can also take some initiatives for solving the drainage problem and for improving the drainage condition easily.

Management options for solid waste management

The numbers of community bins in the study area are negligible with comparison to the producing solid wastes daily. It is identified that 21% slum dwellers dispose their wastes indiscriminate, 56% slum dwellers throw there producing wastes into the drain. So for improving this scenario the number of community bin should be set up in proper distance from the households with addition to increase the awareness programme in the study area. The slum dwellers are not satisfied with the existing solid waste management, as there is no regular cleaning of existing some community bins. As a result the satisfaction level of the slum dwellers are very low for this service. For improving this condition the legal authority should be sincere and careful about their duty and should clean the existing bin regularly. The authority has some limitations like resource constraints, financial problems, institutional difficulties etc to solve the entire problem in the whole city. In this case the slum dwellers can make community organizations by themselves to take some positive initiative and some non-governmental organization should also play the significant role for improving the garbage disposal problem in the Rupsha slum. About 25% slum dwellers think that existing dustbins are located in long distance and 13% thinks that they are not aware about this service. From these data it is clear that the number of dustbin have to increase in suitable distance from the houses of slum dwellers and the awareness programme by government and non government organizations have to increase.

Management options for improving the sanitation facilities

The number of sanitary latrine must be increase to ensure the easy access to the sanitation facilities by the slum dwellers. The distance between the existing latrine and the tube wells have to minimize to reduce the sufferings of the dwellers. Dirty environment in the surrounding space of existing sanitary latrine is unhygienic. So the surrounding environment should be clean regularly to maintain a healthy environment for better management of sanitation facilities. The sanitary latrine should not be located very close with the kitchen in the study area. Because sometimes the slum people dispose their kitchen waste by the side of the latrines. As a result the sanitary latrine lost the healthy environment. In a nutshell the location of the sanitary latrine should be in appropriate situation. The authority has some limitations like resource constraints, financial problems, institutional difficulties etc to solve the entire problem in the whole city. In this case the slum dwellers can make community organizations by themselves to take some positive initiative and some non-governmental organization should also play the significant role for improving the sanitation facilities in the Rupsha slum. Suitability of sanitation system is also very sensitive to the level

of water supply. For instance, on site, dry pit latrine system would not be appropriate with yard tap or multiple tap in house piped water supply system. On the other hand, water borne sewerage system is not a feasible option with bucket carried or hand pump water supply. Choice of a sanitation system is also dependent on population density, on site systems being more appropriate for low-density rural settings and off site systems for high-density urban centres (Ahmed et al., 2003)

Management options for improving health facilities

It is need to create a data base about slum dwellers health of the study area in respect of child birth, death, diseases frequently encountered by slum dwellers, existing supporting health facilities etc. If the condition of water supply and drainage system were improved then it would help to promote health condition of slum dwellers by having safe drinking water for avoiding different types of diseases. Proper drainage could help to overcome unhygienic condition of slum. Health centres need to provide adequate medicine at least cost among slum dwellers as well as instructions among mothers regarding infectious disease to prevent it. Urban local government can play role as coordinator among different NGO's working in the study area in different fields of child health, maternal health, health advocacy etc. because coordination of services will allow scarce resource to be used where they are most needed and avoid duplication. Urban local government needs to vitalize its health centres in the study area by increasing manpower or field level health worker and their responsibility would be vested in monitoring EPI dropouts as well as increase their services in terms of providing necessary medicine, first aid, ORS etc. Quarterly or monthly medical check could be done for slum dwellers by health centres situated in the study area for eliminating diseases such as hookworms and diarrhoeal disease. Health awareness among slum dwellers could be built by publishing lift lets, posters etc. for personal cleanliness, disposing solid waste in proper manner, using sanitary toilets, washing hands after defecation etc. To resist malnutrition nutrition centre could be setup by NGO's or GO's and they would be responsible for providing nutrition education among mothers, keeping record as well as providing preventive measures. As slum dwellers are low-income people it is essential to provide health facilities among all slum dwellers at least cost by government. Improving health facilities is closely related with the income level of the families. From this perspective even support for job training of the parents, microenterprise could be promoted in the study area as health interventions by GO's and NGO's.

Public perception in urban service improvement

It has been found that 85% slum dwellers among the surveyed respondents are ready to contribute in the urban services improvement project if any improvement project initiate by govt. or private organization. About 5% dwellers will contribute by money and 3% will contribute by any other way like giving time for monitoring purpose. It has been found that 60% respondents think that the role of KCC in delivering urban services in the study area is bad. Others comments are good 25% and fair 15% respectively. The satisfaction categories are high 25%, moderate 20% and low 55%. It is found that understand that highest 70% slum dwellers are highly satisfied with the role of ward commissioner in the study area in different urban services delivery.

Conclusion

The proliferation of slums appears to be, at least at present, an unavoidable part of urbanization in Bangladesh. Slum dwellers, recently arrived migrants, and the very poor are all parts of the city's population, and as such, they require infrastructure and services just like other inhabitants. At the same time, they are regarded as a potential human resource for the development of the city; a resource that requires some attention both for social and economic development, and for necessary infrastructure development. The absence of basic support services saps the strength of the urban poor and denies society the full contribution they could make. Problems with slums and squatters are the common phenomenon not only in Khulna City but also in other urban areas of Bangladesh. For the last few decades the growth of urban population is extremely high. This is due to high migration rate of rural to urban areas as well as the natural increase of population. The major cities of the country contain large number of slums and squatter settlements where the large portions of urban population are living. Slum dwellers have the legal ownership of land but these urban people are deprived of urban basic services. KCC is the local authority for the delivering of municipal services to its dwellers. It has an ordinance, which describes the procedure to perform their activities. KCC provide services to all the people of their jurisdiction. Though, KCC has resource constraints but the maintenance of the provided services and distribution of services and facilities also in negligible condition. The slum dwellers do not get pure and sufficient drinking water. Narrow and open drains with the poor water supply and dispose of wastes here and there cause different infectious diseases in the slums. But slum dwellers have contribution towards the city. They are very important for the development of a city, as they are the largest part of the city population. Development of the slum dwellers can bring the improvement in the overall city environment.

References

- Ahmed, M.F., Mujibur, R. (2003), "Water supply and Sanitation: Rural and low income urban communities". *ITN-Bangladesh*, Dhaka, Bangladesh, pp. 95-115.
- Bartlett, S. (1999), *Cities for children*. London, Oxford University Press, pp. 35-115.
- Bangladesh Bureau of Statistics (2004), *Census of Slum Areas and Floating Population*. Vol. 1, Dhaka, Government of Bangladesh,
- Centre for Urban Studies, (2000), *Slums and Squatters in Dhaka City*. Dhaka, pp. 15-50.
- (1992), *Environment of Bangladesh*, Dhaka, Bangladesh.
- Desai, A.R., Devadas, S. (1998), *Slums and urbanization*, Bombay, Popular Prakashan Private Ltd. pp. 85-135.
- Howlader, A. H., Majumder, A.K. (1993), *Determinants of Maternal and Child Health in Urban Slums*. ENHR 1, Bangladesh, pp. 35-75.
- Islam, A. (1992), *Paribesh Prosongo-Bangladesh Paribesh*, Dhaka, Bangla Academy, pp. 110-35.
- Islam, N. (1998), *Review of Research ON Urban Poverty and the Urban Poor in Bangladesh*, Dhaka: Centre for Urban Studies pp. 15-65.
- Islam, N. (1996), *The Urban Poor in Bangladesh*, Dhaka, Centre for Urban Studies, pp. 25-110.
- Khulna Development Authority (1998), *Preparation of Structure Plan, Master Plan and Detail Area Plan for Khulna City. Interim Report*, Aqua-Sheltech Consortium, Vol-IV. Khulna, pp. 65-105,
- LGED, (1998), *Slum Improvement Project(SIP)*; Khulna, Khulna City Corporation, pp. 05-75.

MEDICAL NEGLIGENCE IN BANGLADESH : A QUEST FOR LEGAL REMEDY

Asma Bint Shafiq*

Abstract: In Bangladesh though the incident of medical negligence frequently occurs, the steps taken against it are very few. One of the major factors behind it is that negligence is a subject of the law of torts, which has not yet been developed here. Lacks of awareness among the people about the terminology of medical negligence, cumbersome and dilatory process of the court, inactivity of disciplinary committee of physicians (BMDC) also create hindrance in taking action against it. Hence the wrong committed by the doctors goes unpunished and the victims are deprived from remedies. This paper will make an attempt to find out the ways as to how these problems can be solved and the remedy can be provided to the victims of medical negligence. The adoption of a new law like the Consumer Protection Act may be suggested here. The medical regulatory body (BMDC) is expected to play an active role in respect of negligence. The solution of the problem of implementing law of medical negligence would have been easier, if the people were conscious about it. The human rights and legal aid NGOs, media and above all civil society may play dominant role in this regard.

1. Introduction

Disease has been one of humanity's greatest enemies. Only during the last 100 years medicine has developed weapons to fight disease effectively. Vaccines, better drugs and surgical procedures, new instruments, and understanding of sanitation and nutrition have had a huge impact on human well being.¹ But with the immense strides in technology, health care has emerged as a profitable sector. The doctors get to spend less and less time with their patients. Owing to lack of time of the doctors to communicate adequately to the patients, the sufferings of the patients coming to the doctors instead of being mitigated began to be increased; consequently the patients-dissatisfied is on the rise.² Causing damage to a patient by a doctor in this way is called negligence. In western world the laws relating to negligence is very strong; the patients enjoy the right to fair treatment-as it is tried in court.³ Though rare the doctors in the USA have been put to jail for criminal negligence leading to death of a

*Lecturer, Department of Law, Premier University, Chittagong.

¹ Microsoft ® Encarta ® 2006. © 1993-2005 Microsoft Corporation.

² Bag R. K. *Law of Medical Negligence and Compensation*, 1st Edition, Eastern Law House Private Limited. Calcutta (1996), Preface, p. 7.

³ Sultana Razia, "Medical Malpractice", *The Daily Star*, Dhaka, April 19, 2005.

patient in the recent years.⁴ Inspired by the decisions of English and American courts, medical jurisprudence is rapidly developing in India. But Bangladesh is far behind from this practice. The incidents of medical negligence occur here frequently, but the steps taken in this regard are very few. The main reason of it is that the people are not familiar with the terminology of medical negligence. Negligence is mainly a subject of the law of tort, which has not yet been developed in Bangladesh. As a result the disgruntled patients fail to have resort to legal proceedings to overcome the situation. Apart from this the slow and cumbersome process of the court discourages them to go through this process.

Every person is under an obligation not to do something, which is likely to injure others. Failure to perform the obligation gives rise to an action for negligence. As stated by Alderson B. in *Blyth V. Birmingham Water work Co*⁵; negligence is the omission to do something which a reasonable man, guided upon those considerations which ordinarily regulate the conduct of human affairs, would do or doing something which a prudent and reasonable man would not do. When the term 'professional' is used with negligence it imposes some responsibility upon the person possessing professional skill, which is distinguished from the duty owed, by an ordinary person towards the other. Medical negligence comes within the category of professional negligence. It occurs when a medical practitioner fails to perform his duty towards the patient properly. The object of this paper is to find out the ways as to how remedy can be provided to the victims of medical negligence. Whether the existing laws contain any provision in this regard should also be explained. It will also make an attempt to determine whether the relieves, given by the laws, are adequate or not.

To ascertain these purposes this paper will try to give an idea on medical negligence, how the liability of a medical practitioner in an action for negligence is to be determined. In this connection the doctor-patient relationship should be explained. This relationship gives rise to the existence of duty of care. This paper would elaborate the concept of duty of care, under the principles of neighbourhood, reasonable foresight, and proximity. Breach of duty of care, standard of care and damage thereby caused to the patient impose liability upon a medical practitioner, so these concepts require special consideration. The proof of negligence is a difficult task, upon which this paper will put emphasis. As mentioned earlier, medical negligence is a subject of law of torts, which has not been developed in Bangladesh, so the victims have to proceed through general law of the land. The Penal Code contains, though not specifically on medical negligence, some provisions on negligence. The victims generally proceed for relief under these provisions. The paper will try to highlight the legal framework on medical negligence in Bangladesh. A victim may bring an action before an association namely the Bangladesh Medical and Dental Council instead of going to the cumbersome process of court. The role of this body in enforcing the rights of a person suffering from medical negligence should be analyzed and the present situation of medical negligence and actions taken against it should be pointed out. Again the doctors cannot be held liable for all injuries caused by them. Some defences are available to them, which will be discussed in the paper. The enforcement of the rights of victims of medical negligence under these provisions of the general laws appears to be insufficient due to some problems. This paper will

⁴ Ibid

⁵ (1856) 11 Ex. 781: 156 E. R. 1047.

make an attempt to find out these problems and their probable solutions. Some suggestions are recommended which are expected to give better protection to the sufferers of medical negligence.

It is to be mentioned here that medicine is not restricted to physicians. A wide variety of health care practitioners work in this exciting field. By far the largest professional group is nurses. Registered nurses help physicians during examinations, treatment, and surgery. Anesthetists administer anesthesia to patients during surgery. Licensed Dentists diagnose, treat, and help prevent diseases of the teeth, gums, and other tissues in the mouth and jaws.⁶ Medical negligence may, therefore be caused by the breach of duties on the part of such persons which causes damage to the patients. This paper will mainly concentrate on the negligence of physicians.

2. What is Medical Negligence?

Negligence, under the law of torts, is a term used to designate a failure to exercise due care, resulting in injury to another, and for which an action for damages may be brought. Medical negligence may be defined as want of reasonable degree of care and skill or wilful negligence on the part of a medical practitioner in the treatment of patient with whom a relation of professional attendant is established so as to lead to his bodily injury or permanent disability or loss of life.⁷ It typically involves the negligence of a physician while diagnosing or treating a patient. Failure or delay in diagnosis, making a wrong diagnosis due to absence of skill or care, failure to attend the patient in time, to delegate the duty of treating or operating upon a patient to another doctor without the consent of the patient, failure to give proper instruction, failure to obtain the consent of the patient, etc. are termed as medical negligence.⁸ Like other types of negligence, medical negligence consists of three ingredients:

- (1) The existence of a duty of care, which is owed by the defendant to the complainant;
- (2) The failure to attain that standard of care, prescribed by the law, thereby committing a breach of such duty;
- (3) Damage which is both causally connected with such breach and recognized by the law, has been occasioned to the complainant.

2.1. Existence of Duty of Care

A doctor, when consulted by a patient owes him the following duties:

- i) A duty of care in deciding whether to undertake the case;
- ii) A duty of care in deciding what treatment to give;
- iii) A duty of care in administration of the treatment.

A breach of any of the above mentioned duties gives rise to a right of action for negligence to the patient.⁹ However the doctor cannot be said to have acted negligently unless and until he owes a duty of care towards the patient. Once a doctor- patient relationship is established, the law imposes a duty of care upon the doctor. A doctor does not have a duty to treat everyone who comes to him for

⁶ Microsoft ® Encarta ® 2006. © 1993-2005 Microsoft Corporation.

⁷ *N. Arunachal Vadivel v. Dr. N. Gopalakrishna*, (1962) CPJ 764, Tamil Nadu SCDRC.

⁸ Dr. Reddy Narayan K. S. *The Essentials of Forensic Medicine and Toxicology*, Sugna Devi, Hyderabad, India (1992) p. 30.

⁹ Dr. Bangia R. K. *The Law of Torts*, 13th Edition, Allahabad Law Agency, Faridabad (Haryana), (1997) p. 261.

treatment. He has the discretion either to accept to treat or refuse. In such a case he owes no duty of care, as he does not have any relationship with the patient.

2.1.1. Doctor-Patient Relationship

The relationship between the doctor and patient is mostly contractual which may be either express or implied. Consent for treatment on payment of fees on the part of a patient can be treated as an implied contract with the doctor who by undertaking treatment on acceptance of fees, impliedly promises to exercise proper care and skill.¹⁰ Generally the contract between a doctor and patient is implied. Express contract is mainly observed in surgical operation, where either the patient or his relative signs a bond declaring that they are fully aware of the risks involved in the surgery and voluntarily undertaking the same.

A doctor may in some cases be held liable for negligence in the absence of his relationship with the patient. Because of the nature of his professional responsibility a doctor is under an obligation to save a person whose life is in danger even though no relationship exists between the two. If a doctor, for example, refuses to treat a patient who has been seriously injured in an accident, he will be held liable in the case of death or other irreparable injury caused to him due to the failure to provide immediate treatment.¹¹ In the case of emergency a doctor cannot escape his liability simply by saying that he owes no duty of care to the victim, as there is no doctor-patient relationship. In fact, every doctor, at the governmental hospital or otherwise has a professional obligation to extend his services with due expertise for protecting life.¹² These cases are, however, clearly restricted to situations where there is a danger to the life of the person. It can be inferred from this that in other circumstances the doctor does not owe a duty. The liability, which arises independent of contract, is known as tortious liability. The court faces some difficulties in determining the existence of duty of care in such cases.

2.1.2. Concepts Used to Determine the Existence of a Duty

To solve the problems of determining the liability of physicians in the absence of contract, some tests have been determined by the court in the decisions of various cases. The neighbour principle, reasonable foresight, and proximity play a vital role in this regard.

2.1.2.1. Neighbour Principle

The general principle forming the basis of duty to take care enunciated by Lord Atkin in *Donoghue v. Stevenson*¹³ is known as neighbour test expanding the scope of tortious liability. The circumstances explained by Lord Atkin for deducing the existence of duty to take care are: "...You must take reasonable care to avoid acts or omissions which you can reasonably foresee would be likely to injure your neighbour, who, then, in law, is my neighbour? The answer seems to be – persons who are so

¹⁰ *Everett v. Griffith* (1920) 3 KB 163.

¹¹ Dr. Rao Joga V. S. "Doctor-Patient Relationship, Medical Negligence, Liability Arising out of Tort Law, Criminal Law and Contract Law" A paper presented in a workshop on "Medical Negligence and Legal Remedy" Organised by Public Interest Litigation Training Project on 27th and 28th August, Dhaka (1999), p.1

¹² *Parmanand Kataria V. Union of India*, AIR (1989) SC. 2039 at 2043.

¹³ (1932) AC. 562 147 LT.

closely and directly affected by my act that I ought reasonably to have them in contemplation as being so affected when I am directing my mind to the acts or omissions which are called in question." This 'neighbour test' may be invoked where there is no contractual duty of care owed to the patients in privity of contract with the physicians. The application of this test however requires the existence of two concepts, namely principles of foresee ability and proximity.

(A) Reasonable Foresight

The neighbour test of Lord Atkin has established the general concept of reasonable foresight as the criterion of negligence. Thus every reasonable man has a duty to take care to avoid foreseeable harm to his neighbour.¹⁴ Whether the defendant owes a duty to the plaintiff or not depends on reasonable foresee ability of the injury to the plaintiff. If at the time of the act or omission the defendant could reasonably foresee injury to the plaintiff he owes a duty to prevent that injury and failure to do that makes him liable.¹⁵ The injury, which could not have been foreseen, cannot make a physician liable for negligence. A patient may suddenly react adversely to Penicillin even if his medical history does not reflect the same. Here doctor should not be held liable for the unpredictable reactions of the human body. It would be sufficient that the doctor has taken reasonable care in studying the patient's past medical records etc.¹⁶

(B) Proximity

In order to hold a physician liable for negligence the negligent act must be the direct and proximate cause of the damage. It must be shown that of all the possible reasons for the injury the breach of duty of the doctor was the most probable cause. It is not sufficient to show that the breach of duty is one of the probable causes.¹⁷ Hence if the possible causes of injury are the negligence of a third party, an accident or breach of duty of care of the doctor, then it must be established that the breach of duty of care of the doctor was the most probable cause of the injury.¹⁸ Thus, where the plaintiff is so closely connected with the defendant that, the latter can reasonably foresee the injury or damage which might be caused to the former due to his failure to do a particular act, then the existence of duty of care is recognized.

2.2. Breach of Duty of Care

Liability of a doctor does not arise in all cases where the patient is injured by the act of the doctor. He is liable only if he has committed a breach of duty in the process. The doctor is said to be in breach of a duty when his conduct is below the reasonable standard, which is required by law in a particular situation. The reasonable degree of care is known as standard of care.

2.2.1. Standard of Care

¹⁴ Bag R. K. *Law of Medical Negligence and Compensation*, Op. cit, p.13.

¹⁵ Dr. Bangia R. K. *The Law of Torts*, Op. cit, p. 49.

¹⁶ Damayanti S. "What is Medical Negligence? What are the Standard of Care Principles" A paper presented in a workshop on "Medical Negligence and Legal Remedy" Organised by Public Interest Litigation Training Project of BLAST on 27th and 28th August, Dhaka (1999) p.44.

¹⁷ *Wilsher v. Essex Area Health Authority* (1988) All E. R. 871.

¹⁸ Dr. Rao Joga V. S. (1999) " Doctor-Patient Relationship, Medical Negligence, Liability Arising out of Tort Law, Criminal Law and Contract Law" Op. cit, p.7

To say that a conduct is careless or negligent is to evaluate it, and it can only be evaluated in the light of some norms or standard, which the person making the evaluation has in mind. The courts in many countries have adopted a legal measure, or standard of care, to which the defendant's conduct must conform, if he is to escape liability from negligence.¹⁹ The law does not require the highest possible standard but the care required is that of a reasonable man. Hence the duty owed by a doctor toward his patient is to bring to his task a reasonable degree of skill and knowledge and to exercise a reasonable degree of care.²⁰ Reasonable degree of care and skill means that degree of care and competence, which an ordinary competent member of profession who professes to have those skills would exercise in the circumstances in question.²¹ It is noteworthy to mention here that the degree of care is variable and depends on the circumstances. It is used to refer to what actually amount to reasonableness in a given situation. But the standard of care is a constant and remains the same in all cases.²² Thus though the same standard of care is expected from a generalist and a specialist, the degree of care, which is expected from a specialist, would be different. In other words both are expected to take reasonable care but what amounts to reasonable care as regards the specialist differ from what amounts to reasonable care for the generalist. In fact the law expects the specialist to exercise the ordinary skill of his specialty, and not of any ordinary doctor.²³ A doctor is therefore, liable for negligence when he fails to exercise a reasonable degree of care and skill, not otherwise. He does not have to ensure that every patient who comes to him is cured. He has to only ensure that he makes a reasonable attempt to cure the patient.

2.3 Damage

Negligence is not actionable per se. So, the patient has to prove some damage occasioned to him, which is both causally connected with such breach and recognized by the law. If he proves that the doctor was negligent, but fails to establish that any loss or injury caused thereby, then he will not be entitled to claim any compensation.²⁴

3. Proof of Negligence

As a matter of proof, the burden of establishing a prima facie case lies upon the plaintiff. In order to show the breach of duty, the plaintiff would first show what is considered as reasonable in the light of the facts of the case and then the conduct of the doctor was below that degree.²⁵ Thus the liability of the doctor arises only when the plaintiff is able to discharge the burden of him of proving negligence. But in some cases the doctor may be held liable in the absence of explanation on his part as to

¹⁹ James S. Philip, *General Principles of the Law of Torts*, Butterworth and Co. (Publishers) LTD. London, (1978) p. 188.

²⁰ *Laxman v. Trimbak* AIR (1969) SC 128 at p. 131.

²¹ Dr. Rao Joga V. S.(1999) " Doctor-Patient Relationship, Medical Negligence, Liability Arising out of Tort Law, Criminal Law and Contract Law" Op. cit, p.3.

²² Ibid.

²³ Ibid, pp.3, 4.

²⁴ *Sidhray Dhadha v. State of Rajasthan* AIR (1994) Raj 68: 1993(1)Raj LW532.

²⁵ Dr. Rao Joga V. S.(1999) " Doctor-Patient Relationship, Medical Negligence, Liability Arising out of Tort Law, Criminal Law and Contract Law" Op. cit, p. 6.

how the injury would have occurred, without breach of his duty. This principle is known as *res ipsa loquitur* which means that the thing speaks for itself.

3.1. Res Ipsa Loquitur

Where the injury is caused by something which is in the doctor's or defendant's control, in circumstances from which it can reasonably be inferred that the accident would not have occurred, if the defendant had used proper care, then in the absence of explanation by the defendant the plaintiff may succeed. For instance, a swab left over in the abdomen of a patient, burns from application of hot water bottle or from X-ray therapy, prescribing an overdose of medicine producing ill-effects, giving poisonous medicine carelessly etc.²⁶ are the circumstances where the principle may be applied. Two conditions are therefore, necessary for the application of the principle:

- (a) Complete control rests upon with the doctor.
- (b) It is the general experience of mankind that the accident in question does not happen without negligence.²⁷

When the principle of *res ipsa loquitur* is applied, the burden is on the doctor to explain how the incident could have occurred without negligence. In the absence of any such explanation, liability of doctor arises. Where the negligence of a doctor is proved, the court may order the doctor to pay compensation to the injured patient or to re-investigate his injury, if possible. The steps to be taken in this way are to be regulated by the law of torts. But this law is underdeveloped in Bangladesh and the tendency to file civil suit for the recovery of pecuniary compensation, in the case of damage caused by medical negligence or any other types of negligence is rarely observed.²⁸ As there is no codified law on the law of torts, which specifically defines medical negligence and remedies for it, the victims have to resort to the provisions of general law of the land covering the cases of negligence.

4. Legal Framework on Medical Negligence in Bangladesh

Medical negligence constitutes criminal offence as well as civil wrong at the same time. The victim can file a criminal case for medical negligence under various sections of the Penal Code, even though it contains no specific provision on medical negligence.²⁹ Again a victim is at liberty to sue the doctor in a civil court for compensation under the law of torts. From this aspect medical negligence is a civil wrong as well.

4.1. Liabilities Arising out of Criminal Law

In its various provisions, the Penal Code deals with negligence, within which medical negligence may be brought. A person committing negligence may be held liable

²⁶ Dr. Reddy Narayan K. S. *The Essentials of Forensic Medicine and Toxicology*, Op. cit, p. 32.

²⁷ Dr. Rao Joga V. S. (1999) "Doctor-Patient Relationship, Medical Negligence, Liability Arising out of Tort Law, Criminal Law and Contract Law" op. cit, p. 7.

²⁸ Shobnom Sohana, "Dactari Abohela Shonkranto Bangladesher Air" (Laws Relating to Medical Negligence in Bangladesh). In Shahin Akhter (ed) "Dactari Aboheld" (Medical Negligence) Ain O Shalish Kendro, Dhaka, (2001), p. 47.

²⁹ Sections 118, 176, 177, 182, 191-195, 197, 201, 203, 304A, 336, 337, 338, 319, 320 of the Penal Code 1860.

criminally in such cases. Section 304 A of the Penal Code 1860 provides, "Whoever causes the death of any person by doing any rash or negligent act not amounting to culpable homicide shall be punished with imprisonment of either description for a term which may extend to five years or with fine or both." In order to hold a person liable under this section it must be proved that he has done the act either rashly or negligently. In India a Homeopathic practitioner was held liable under this section. In *Juggankhan v. State*³⁰ a homeopathic practitioner, administered to a patient suffering from guinea worm, 24 drops of stramonium and a leaf of dhatura without studying its effect, the patient died of poisoning. The accused was held guilty.

The provisions on negligence can also be found in sections 336, 337 and 338. The person accused under these sections for committing rash or negligent act may be ordered to pay fine or be imprisoned for causing hurt or grievous hurt or interference with personal safety of any individual. The tenure of imprisonment and amount of fine will vary in accordance with the seriousness of the consequences of the rash or negligent act. Negligence can be understood from the above discussion. A rash act means hazarding a dangerous and wanton act with the knowledge that it is dangerous or wanton and that it may cause injury but without any intention to cause injury or knowledge that it will probably be caused. The criminality in such a case lies in running the risk of doing the act with recklessness or indifference as to the consequences.³¹

An action independent from negligence may also be brought against a doctor under sections 319 and 320 when his conduct causes hurt or grievous hurt to a patient. The common incident of medical negligence as observed is that in most of the cases it assumes any kind of hurt, which is, describes as grievous by section 320.³² In such cases, the acts of the doctor may be termed as gross misconduct and exemplary punishment should be inflicted.

4.2. Liabilities Arising out of Other Laws Relating to Medicine

The laws relating to medicine are mainly concerned with the qualifications of physicians. They contain the provisions prescribing as to who can conduct a particular act like surgery, or treatment and what would be the consequence if a person having no such qualification performs the said act, or the person does not act up to the marks, though he possesses the required quality. But these laws are silent on the matters of determination of liability. The principles of duty of care, breach of duty and damage caused thereby are absent here. The liability arising out of these laws may be discussed in the following ways:

4.2.1. The Medical and Dental Council Act, 1980

The Bangladesh Medical and Dental Council (BMDC) established under the above Act (Act No.16) maintains a register of medical practitioners possessing the required

³⁰ AIR (1965) SC. 831.

³¹ *Rashidullah v. The State* 21 DLR (1969) p. 709.

³² Section 320 of the Penal Code mentions the name of some hurt which are designed as grievous hurt, such as emasculation, permanent privation of the sight of either eye, permanent privation of the hearing of either ear, privation of any member or joint, destruction or permanent impairing of the powers of any member or joint, permanent disfiguration of the head or face, fracture or dislocation of bone or tooth, any hurt which endangers life or which causes the sufferer to be during the space of twenty days in severe bodily pain or unable to follow his ordinary pursuits.

qualification.³³ This Council consists of representatives of all sectors in health including a legal practitioner nominated by the Chief Justice.³⁴ The Council not only maintains a register of medical practitioners but also give them instructions on their professional life. The BMDC can take an action against a doctor in the cases of gross negligence or professional negligence. Without going to the rigid and costly process of the ordinary courts the victims of medical negligence may bring a written complaint before the BMDC.

Any person who is aggrieved by medical negligence may file a written complaint to the BMDC. He has also to submit the evidence, if any, along with the complaint. On receipt of the complaint, the Council will give notice to the concerned doctor to show cause. He will be asked to give his own explanation about the complaint within fifteen days. The explanation made by the doctor will be sent to the disciplinary committee. Thereafter the committee will investigate the matter. At this stage the complainant and the accused doctor will be given an opportunity of being heard. The disciplinary committee may even call upon a hospital authority or medical centre to give documents, if it is necessary. The committee will submit its report to the BMDC. The council has the authority to remove the name of any registered practitioner altogether or for a specified period from the registrar who has been found to be guilty of infamous conduct in any professional respect.³⁵ A medical practitioner or dentist whose name has been removed from the register in this way cannot practice or hold himself out as practicing, the allopathic system of medicine or dentistry.

4.2.2. The Eye Surgery (Restriction) Ordinance, 1960

This Ordinance intended to prevent surgery on the eye by persons other than registered medical practitioners. Section 3(1) of the said Ordinance provides that any person, not being a registered medical practitioner, who performs eye surgery upon another, whether with or without latter's consent, shall be punishable with imprisonment for a term which may extend to one year or with fine which may extend to one thousand taka.

4.2.3. The Allopathic System (Prevention of Misuse) Ordinance, 1962

This Ordinance contains provisions to prevent the misuse of the allopathic system of medicine and to provide for matters connected therewith. It says that no person other than a registered medical practitioner can perform surgical operation.³⁶ Such a practitioner or person authorized in this behalf by the Government can give the prescription of any antibiotic or dangerous drugs under this Ordinance. Whoever contravenes this requirement shall be punishable with imprisonment which may extend to one year or with fine not exceeding two thousand taka or both.³⁷

³³ Section 20 of the Act.

³⁴ Shown Hossain Tanim, "Chikithshokder Oshodachorn O BMDC" (Medical Malpractice and BMDC) In Shahin Akhter (ed) "Dactari Aboheld" (Medical Negligence) Ain O Shalish Kendro, Dhaka (2001) p. 43.

³⁵ Section 28 of the Bangladesh Medical and Dental Council Act 1980.

³⁶ Under Section 2 of the Act registered medical practitioner means a practitioner registered under the Bangladesh Medical and Dental Council Act, 1980.

³⁷ Farooque Mohiuddin, Hasan Rizwana, *Law Regulating Oshodachorn O BMDC* (Medical Malpractice and BMDC) In Shahin Akhter (ed) "Dactari Aboheld" (Medical Negligence) Ain O Shalish Kendro, Dhaka (2001) p. 43.

³⁷ Section 28 of the Bangladesh Medical and Dental Council Act 1980.

4.2.4. The Bangladesh Unani and Ayurvedic Practitioners Ordinance, 1983

This Ordinance is to provide for the regulation of the qualifications and registrations of practitioners of unani and ayurvedic system of medicine. There exists a board like the BMDC namely the Bangladesh Board of Unani and Ayurvedic system of medicine, for carrying out the purposes of the Ordinance.³⁸ In order to continue practice in unani and ayurvedic system of medicine a person has to be registered as a practitioner under this Ordinance, and he has to show professional efficiency in his dealing with the patients. If a professional has been found to be guilty of cognizable offence or misconduct which in the opinion of the Board discloses moral turpitude such as to render him unfit to practice his profession, the Board may direct his name shall be removed from the registered.³⁹ If the registered practitioner contravenes the provisions of this Ordinance which requires him to be abided by the Code of Ethics for unani and ayurvedic practitioner framed by the Board and approved by the government shall be punishable with imprisonment for a term which may extend to one year or with fine which may extend to one thousand taka or with both.⁴⁰ A person having not being registered under this Ordinance shall be subjected to the same punishment, if he practices or hold himself out, whether directly or by implications the unani and ayurvedic system of medicine.⁴¹

4.2.5. The Bangladesh Homeopathic Practitioners Ordinance, 1983

The regulation of the qualifications and registration of practitioners of Homeopathic system of medicine are the main concern of this Ordinance. Its provisions are almost same to the above-mentioned Ordinance. The Bangladesh Board of Homeopathic System of Medicine can cancel the registration of a practitioner who is found to be guilty of any cognizable offence or professional misconduct.⁴² If a registered practitioner does anything contrary to the Code of Ethics for homeopathic practitioner shall be liable to punishment with imprisonment for a term, which may extend to one year or with fine, which may extend to taka one thousand or with both.⁴³

4.2.6. The Medical Practice and Private Clinics and Laboratories (Regulation) Ordinance, 1982

The commercialization of medicine is one of the most important factors leading to negligence. The treatment of patients at the government hospital is free of charge, so that the patients fail to get full concentration of the physicians who are busy with private practices at their chambers and clinics. The number of private clinics as business institutions is increasing day by day which in most of the cases are not properly equipped. The life of the patients often feels at risk for want of some emergency machine and drugs. The clinics though bound to provide these requirements sometimes are found to be ignorant of them, which is a clear violation of duty of care. This Ordinance intends to check this situation. It regulates medical

³⁷ Under Section 2 of the Act registered medical practitioner means a practitioner registered under the Bangladesh Medical and Dental Council *Environment in Bangladesh*, 2nd Edition, Bangladesh Environmental Lawyers Association (BELA), Dhaka, (2004), pp. 63-64.

³⁸ Section 3, The Bangladesh Unani and Ayurvedic Practitioners Ordinance, 1983.

³⁹ Section 25 Ibid.

⁴⁰ Section 31 Ibid.

⁴¹ Section 32 Ibid.

⁴² Section 28 The Bangladesh Homeopathic Practitioners Ordinance, 1983.

⁴³ Section 36 Ibid.

practice and functioning of private clinics and laboratories. It requires a doctor's chamber to be maintained in hygienically sound conditions with necessary facilities for the examination of patients. If on inspection made by the Director General (DG) for Health or any officer authorized by him, a registered practitioner is found to contravene this requirement he may recommend to the government to debar him from carrying on private medical practice.⁴⁴

This Ordinance contains conditions to be fulfilled by a clinic to get license. These are proper accommodation with hygienic environment for the patients at least eighty square feet of floor space for each patients, an air conditioned operation theatre, adequate supply of life saving and essential medicines, at least one medical practitioner, two nurses for every ten beds round the clock, specialists for operation, treatment and supervision of patients.⁴⁵ If on inspection made by the DG or any officer in this behalf, a private clinic is found to lack such requirement; its cancellation may be recommended.⁴⁶ Section 13 prescribes punishment of such doctors and clinics. It says that if any registered medical practitioner contravenes any provision of this Ordinance, he shall be punishable with fine, which may extend to five thousand taka. In the case of owner of a private clinic, the punishment of the same offence is imprisonment for a term which may extend to six months, or with fine which may extend to five thousand taka, or with both, and the court, while convicting such owner, may order for forfeiture of all or any of the movable property in the clinic.⁴⁷

5. Consent of Patients

A doctor is required as a part of his duty of care to his patient, to explain what he intends to do and to disclose all such information as would be relevant and necessary, for the patient to make a decision. Such information refer to the doctor's duty to advise the patient of the advantages and disadvantages of undergoing the treatment proposed and more particularly to advise the patients of the risks involved.⁴⁸ A medical practitioner will be held liable, if he conducts the treatment in the absence of such treatment. In *Reibl v. Hughes*⁴⁹ a neuro surgeon formed the opinion that his patient required surgery in order to clear blocked artery and to prevent a stroke in a later part of life. The patient was kept in complete ignorance of the high risks involved in the operation. The patient was paralyzed for stroke suffered during surgery. The surgeon was held negligent for his failure to obtain proper consent from the patient after giving full information of the risks involved in the operation.

The express consent is not required in all cases. It is generally taken in the case of surgery where the patient or his relative signs an agreement declaring that the surgeon or hospital authority will not bear any responsibility for the injury or death caused by the operation. But this type of agreement does not allow the surgeon or hospital authority to escape the liability in all cases. If the operation appears to have

⁴⁴ Section 11 The Medical Practice and Private Clinics and Laboratories (Regulation) Ordinance, 1982.

⁴⁵ Section 9 Ibid.

⁴⁶ Section 11 Ibid.

⁴⁷ Section 13 Ibid.

⁴⁸ Bag R. K., *Law of Medical Negligence and Compensation*, op. cit, P. 91.

⁴⁹ (1977) 89 DLR (3d) 112, out CA reserved (1980) 114 C.L.R. (3 J) 1 SC. Canada.

been conducted negligently, then they can be held liable. In other words if the injury is caused inspite of taking all reasonable care, then the injury will be excused. In most of the cases the consent is implied from the circumstances. A patient approaching a medical practitioner for treatment impliedly gives his consent for medical procedures undertaken by the said doctor.⁵⁰

6. Defenses Available to Doctors

A doctor is not necessarily liable in all cases where a patient in his case has suffered an injury. It might be caused even though the doctor has taken all reasonable care on his part towards the patient. In such cases he can claim exemption from liability. The law recognizes some defenses for doctors which, when present, will prevent an injury caused by the doctors, from being negligent. General practice, error in judgment, and misadventure are recognized as grounds of defense.

6.1. General Practice

If a doctor conforms to the general practice and injury still occurs, he may not be liable, as he had taken reasonable care.⁵¹ As it has been mentioned earlier, general practice is used to determine the degree of care in a given circumstance. Thus reasonableness is the standard and the general practice is the degree of care required.⁵²

6.2. Error of Judgment

Sometimes the decision taken by a doctor as regards the treatment of a patient appears to be wrong, even though he had taken due care by conducting the required tests. Such cases will be treated, as mere error of judgment and the doctor would not be held liable for the injuries caused thereby. It would be important to note that an error of judgment to be excused in law must necessarily be an honest one.⁵³ In *Hoglin v. Brown*⁵⁴ there were signs of fibroid tumour in a thirty-year-old woman's uterus. Two pregnancy tests were also conducted but both proved negative. During a subsequent hysterectomy it was found that she was indeed pregnant due to which she miscarried and then sued. The physician was held not liable as the diagnosis was reasonable, and conducted with due care, even though incorrect due to an error of judgment. The pervasive element of human infallibility on the part of medical practitioners, and complexities and uncertainties of human body have created basis for excluding an error of judgment from the arena of medical negligence.

6.3. Misadventure

Misadventure is sometimes described as the inevitable hazards of practice.⁵⁵ The essential difference between an error of judgment and misadventure is that in the

⁵⁰ Bag R. K., *Law of Medical Negligence and Compensation*, op. cit. P. 90.

⁵¹ Rao Joga V. S. Dr. (1999) op. cit, p. 11.

⁵² Ibid. P. 5.

⁵³ Damayanti S. "What is Medical Negligence? What are the Standard of Care Principles" op. cit., p.44.

⁵⁴ 481 p. 2d 458, Wash 1971.

⁵⁵ Mason J. K. and Smith McCall R. A, *Law and medical Ethics*, Butterworths, London (1991) p. 212.

latter the injury to the patient is caused by an unintentional or accidental act.⁵⁶ In the words of Lord Denning, "We should be doing a disservice to the community at large if we were to impose liability on hospitals and doctors for everything that happens to go wrong...We must insist on due care for the patient at every point of time, but we must not condemn as negligence that which is only a misadventure."⁵⁷ The fact of the case was that a patient suffered paralysis due to the crack at anesthesia injection bottle through which other liquid had speed in. Such a crack in the injection bottle had, till now not been found in any other case and it was a hairline crack, which could not be detected by the naked eye.

7. Scenario of Legal Remedy in Bangladesh for Negligence

In Bangladesh there is no law, which specifically deals with negligence. As a result a patient cannot complain for medical negligence before the courts directly. Most of the people do not even have an idea of the existence of BMDC and its role in respect of medical negligence. Because of this, though the incidents of medical negligence are happening now and then, the steps taken by the victims of negligence are very few. The sufferings of the people go unredressed and the doctor who has committed negligence can escape his liability very easily. An attempt can be made to change this situation by applying the provisions of existing law.

7.1. Writ Petition

In spite of the absence of specific laws on negligence effective actions can be taken against the doctor under the constitution and other laws of the country. This was the situation in *Asma's* case⁵⁸ who was a victim of medical negligence. On 9th August 1998 a house wife named Asma got admitted in Dhaka Medical College Hospital for operation of her ovarian tumours. Professor Mrs. Mahmuda Khatun who attended her, cut off Asma's only kidney. A human rights association called 'Adhikar' filed a writ petition before the High Court Division on the ground that the victim's fundamental right to life which has been guaranteed by article 32 of the constitution has been violated. The Court ordered the government and the concerned authority to take immediate steps for her treatment. All steps were taken accordingly and Asma was given a kidney by her mother. Though she had been cured for the time being, was died some times later. In Asma's case prompt and effective action was taken. But the fact is that a writ petition cannot always be filled for medical negligence. The High Court Division can only direct the government or other concerned authority or individual to do something or refrain from doing something, to show cause as to why he has done a negligent act, or to make recommendation in some case. Where a death or any permanent injury has been occurred due to negligence, the aggrieved party has to file civil suit for compensation or criminal case for punishment of the concerned doctor under the civil and criminal law in force in Bangladesh.⁵⁹

⁵⁶ Dr. Reddy Narayan K. S. *The Essentials of Forensic Medicine and Toxicology*, op. cit, p. 31.

⁵⁷ *Roc v. Ministry of Health* (1954) 2 All E. R. 131.

⁵⁸ Shobnom Sohana, "Dactari Abohela Shonkranto Bangladeher Air" op. cit, p. 48.

⁵⁹ Ibid.

7.2. Criminal Cases

In Bangladesh, the cases for medical negligence are generally filed under criminal law. On 20th November 1998 six patient died at Rangpur Medical College Hospital due to the pushing of date expired saline by the duty nurse.⁶⁰ The saline bags contained no date of expiry. But it could be assumed from the levels used on the bags (INSTITUTE OF PUBLIC HEALTH DACCA) that they were manufactured before 16 years of the relevant time. A legal aid non-governmental organization, namely 'Ain O Shalish Kendro' lodged a police case on 21st March 1999 against this incident on the ground that it violated the people's right to life and to get proper treatment. The main reason of filling the case was to prevent the repetition of the same offence in future by taking appropriate legal measures against the concerned authority and the persons who were in duty.⁶¹ But the case still remains at the stage when it was filed.

Another criminal case⁶² was filed on 1st September 1999 to the Chief Metropolitan Magistrate Court, Dhaka by the father of Rubel, who died on account of gross negligence. The case was filed with the legal assistance of Ain O Shalish Kendro under sections 303A/ 338/ 287/ 34 of the Penal Code against Dr. Habibur Rahman of the Holy Family Red Crescent Hospital, Dhaka, Dr. Nizamuddin of Bangabandhu Sheikh Mujib Medical University and nurse Mahfuza Begum.⁶³ On 19th June 1999, while crushing the stones accumulated in the right side kidney of Rubel, Dr. Habibur Rahman cut off the kidney by operation. The doctor being an orthopedic surgeon having no expertise on urology did the operation without consulting or sending the case to any expert on the required subject. Unfortunately the left side kidney of the patient was damaged. He was needed immediate dialysis; but there was no machine for dialysis in the hospital. As the patient condition was deteriorating, he was then sent to Bangabandhu Sheikh Mujib Medical University. His condition was improving due to regular dialysis but soon thereafter Rubel became the victim of medical negligence again and finally died on 26th July 1999, as the doctor while conducting dialysis at night on 25th July fell into sleep and the duty nurse was not found. The case is at the stage of investigation.⁶⁴

Though the number is few, some cases for negligence have been filed in the court. But the relieves given by the courts in such case are rarely found. An important aspect of these cases is that most of the cases on medical negligence have been filed either by human rights or legal aid NGOs. Even where victims or their relatives file cases they do so with the aid of such institutions. Because of the rigid and costly process of the court the common people do not get any interest to bring action for negligence. The ignorance of the large section of people about their rights, which have been violated by medical negligence, is an important factor of leaving negligence unpunished. BMDC, Hospital Authority, DG Health, and Health ministry may take disciplinary actions against medical negligence and the complex process of

⁶⁰ *The Daily Prothom Alo*, Dhaka, 22nd November, 1998.

⁶¹ Das Ashit John "Rangpur Medical College Hospital e Saline er Karone Eki Rate Choe Rogir Mritue" (Six Patient Died at Rangpur Medical College Hospital at the same night due to the pushing of Saline) *Dactari Abahela* op. cit, p. 15.

⁶² Case no. 35(9) 99.

⁶³ Das Ashit John "Rangpur Medical College Hospital e Saline er Karone Eki Rate Choe Rogir Mritue" *Op. cit*, p. 23.

⁶⁴ *Ibid*.

the court can be avoided thereby. But the problem lies here is that these institutions are not as active as they required to.

9. Problems of Implementing Laws on Medical Negligence

Bangladesh faces many difficulties in implementing the rights of the victims of medical negligence. It does not have any national health rules still now. The standard of right to health is generally determined by the rules, which act as an indicator. Where the treatment given by a doctor falls below that standard the patient is said to have been the victim of medical negligence. Other factors, which create hindrance in making complaints against medical negligence, have been discussed as follows:

a) Absence of Law

As the law on negligence is uncoded in the form of statute, generally attempts are made to give relief to the victims under the general laws. But these attempts have not been proved to be effective. Criminal cases are generally filed against it under the provisions of the Penal Code dealing with negligence or other relevant sections in this regard. But it cannot be appreciated as a proper way. Because these provisions are applicable not only in the field of medicine but to other professions also; an accident caused by the negligence of driver can even be brought within these sections. In fact in Bangladesh most of the cases under these sections are filed against driver's negligence. The main problem of proceeding under this section is that they say nothing about the principles as to how duty of care should be determined, what is standard of care and how damage should be proved. These are the subjects of the law of torts. But there is no codified law on this subject in Bangladesh, and this law has not been developed here by judicial decisions. So victims cannot claim remedy under this law from a civil court.

b) Higher Court Fee

To impose penalty upon a guilty doctor is not sufficient to satisfy the victim. He should be paid compensation for the injury caused to him by negligence. It requires a suit to be filed before a civil court, which involves high court fee. So it is very difficult especially for the poor litigants to bear the expenses of such a suit by paying the court fee.

c) Complex Process of the Court

The process of the court is dilatory, complex, and costly. It makes individual safeguards and remedies inaccessible to people. They prefer to take no step in many cases even though they have suffered injury. Because coming before the court to get relieves may cause to them a further pain.

d) Difficulties Regarding Proof of negligence

It is very difficult to prove a case of medical negligence owing to following reasons:

(i) Due to the technicality of medical issues a doctor is required to prove the negligence of another doctor against whom a charge for negligence has been brought.

The doctors generally do not give testimony against his fellow doctor. The court has to face trouble in proving a case because of the non-cooperation of such witnesses.⁶⁵

(ii) Every patient does have a right to know about the steps taken by the doctor for his treatment and the doctor is under an obligation to provide such information. This right of the patient is recognized in all civilized countries. But in Bangladesh the patients are not served with any document containing such information except birth or death certificate and discharge certificate etc. In the absence of the necessary documents, it becomes very difficult to prove a case of negligence.

e) Incompetent Judges and Medical Regulatory Bodies

Because of the technical nature of medical issues, the judges may not be considered as competent persons and to decide what is reasonable and what is not in particular case. A probable solution to this problem is to allocate this function to medical experts and regulatory bodies who are more equipped to handle the subtleties of medicine as a profession.⁶⁶ But in Bangladesh these regulatory bodies do not play such a role, which is generally expected from them.

f) Inactive Medical Regulatory Bodies

Bangladesh Medical and Dental Council is the only authority to regulate and control the professional conduct of the doctor and to take appropriate actions in the case of negligence. But the actions taken by the Council are very few.⁶⁷ The people even do not know about the existence of such a body, where they may complain regarding negligence of doctor. As a result it has become an inactive organization. Another problem is that the BMDC is subject to some limitations while exercising disciplinary function. It cannot always take action against a doctor who has committed negligence. Because its jurisdiction is limited to the doctors who are practicing privately or who are the employees of private clinics. If the doctors act under a hospital authority, the Council has nothing to do with the doctor and the hospital. In such a case Director General of Health or Health Ministry can take action, they rarely exercise their function in this regard.

g) Commercialization of Medicine

There is a growing commercialization of medicine what with quid pro quo deals between physicians and diagnostic center. Private clinics have become a very profitable business and many people who do not have any connection with medicine are the owners of such clinics. These are not well equipped. Low paid junior doctors; untrained nurses, lack of emergency machines etc are the main feature of these clinics. These factors facilitate medical negligence to a large extent. The patients coming to these institutes have to suffer bitterly instead of getting proper treatment.

⁶⁵ Khan Alina, " *Ami Mone Kori Dacterder Dhormoghote Jaber Kono Adhikar Nel*" (I Think the Doctors should not have any Right to Go For Strike) Dactari Abahela, op. cit, p. 41.

⁶⁶ Damayanti S. "What is Medical Negligence? What are the Standard of Care Principles" op. cit, p. 48.

⁶⁷ Shown Hossain Tanim, " *Chikithshokder Oshodachom O BMDC*" Dactari Abahela op. cit, p. 43.

h) Absence of Consumer Protection Law

The costly, slow and complex process of the court discourages the people to have resort to the ordinary courts. It requires a system to be introduced which would enable the victims to have an easy access to justice, which would be more flexible, free of cost and quick in service. A forum established under an Act like Consumer Protection Act can give such a remedy. But unfortunately Bangladesh does not have adopted such a comprehensive Consumer Protection law still now.

i) Lack of Awareness of the People

In Bangladesh most of the people are illiterate, who are totally ignorant of the right to make complaint against medical negligence. Even the educated people are not familiar with this terminology. As a result, the steps taken either by the court or by medical regulatory bodies in this regard are rarely found.

10. Suggestions

Despite the existence of some legislations and medical ethics, proper medical service remains an illusive proposition for the patients in Bangladesh.⁶⁸ To improve this condition, following steps may be taken:

i) Accountability to self-conscience

The great edifice of the medical profession stands on a foundation of ethics, which outlines the duties of a medical practitioner towards his patient.⁶⁹ In fact ethics is a self-imposed code of conduct assumed voluntarily by the medical profession. When he fails to perform this duty properly, he is said to commit negligence. Every doctor has to take oath while entering into profession, where he promises to be abided by so many obligations. It should be towards the patients primarily, then his fellow doctors, teachers and society at large. Whenever a physician does anything contrary to his oath he will be accountable to himself at first. He has to declare at the time of taking oath, "I will endorse my life for the service of humanity; my first consideration will be the health condition of my patient, etc." A doctor should keep in mind these words while giving treatment to his patient and would regulate himself by the code of medical ethics. Commitment to service and adherence to the self-imposed discipline of ethical conduct could be the best check upon medical negligence and the nobility of the profession could have been maintained thereby.

ii) New Codes of Conduct

In the light of new knowledge and considerations of human rights and social justice, doctors, nurses, para medicals and hospital administrators should formulate new laws and practices governing conduct of professional services. These codes of conduct should be subjected to periodic review at the highest level and should be transmitted to every member of every member of the profession with examples and directives. Committees of professionals known for their experience and integrity should monitor and oversee the observance of such norms without fear or favour. If the electoral processes within professional bodies are coming in the way of effective

⁶⁸ Sultana Nishat, "Medical Negligence in Bangladesh: An Introduction" *Law Vision*, Issue: 9 Department of Law, University of Chittagong, Chittagong, (2004-2005), p. 52.

⁶⁹ Damayanti S. "What is Medical Negligence? What are the Standard of Care Principles" *op. cit.* p. 44.

implementation, the medical council should be authorized to constitute disciplinary committees selected on the basis of competence and integrity through transparent and objective procedures. Punishment for erring members should be deterrent and in extreme cases, exemplary. Reports of such actions should be widely publicized to inform the people to be careful of such elements in professional ranks.⁷⁰

iii) Continuing Education

Continuing education in appropriate modules should be made compulsory for every member and more particularly to the so-called specialists. Apart from updating their knowledge and skills, such courses should aim at informing them of the ethical and legal standards and on how to carry on medical practice in conformity with the exceptions of society.⁷¹ The medical councils and associations have to take the initiative and medical colleges in different districts can hold the programmes on a continuing basis.⁷²

iv) Need for New Law

As the existing laws have been proved to be inadequate, in order to regulate the cases of medical negligence a new law should be enacted. The main disadvantage of proceeding under the criminal law is that it does not contain any provision dealing with the concepts of duty of care, standard of care, breach of duty of care etc. These are the fundamental principles determining liability for negligence, which are the subject matter of tort. The proposed law should contain a specific provision on these concepts. Another problem lies with the present system is that neither the doctor nor the hospital authority can be compelled to give to the patients the documents containing the case history along with the recommendations made by the doctor, medicine prescribed, other suggestions given time to time. It is very difficult to prove a case of negligence in the absence of such document. Under the proposed system the doctor or hospital authority would be required to give such document to the patients keeping a copy of the same for their own use.⁷³ The new law should introduce a scheme enabling the victims to get a prompt and effective relief of medical negligence, that is, it should be free from all complexities of the ordinary courts. It would allow the victims to file such a suit without any court fee or at a nominal court fee.

The adoption of a new law like Consumer Protection Act as it exists in many countries may be of use to include the above proposals. With the object of providing better protection of the consumer interests in the background of certain guidelines evolved by the United Nations on the subject in 1985, many countries like India (1986), Pakistan (1995), Nepal (1998), Malaysia (1999), Indonesia (1999) adopted laws on consumer protection. Bangladesh started a process of enacting such a law in 1992. But it has not yet been adopted, though a number of drafts of the proposed law have been made at several times.⁷⁴

⁷⁰ Dr. Menon Madhava R. N. "Medical Negligence Liability: Emerging Trends in Indian Law and Practics." *Law and Medicine*, Vol. 3 Bangalore, India (1997) pp. 14, 15.

⁷¹ Ibid, p. 15.

⁷² Ibid.

⁷³ Ibid.

⁷⁴ *The Daily Prothom Alo*, 10th September 2006.

An alternative and effective system for medical negligence might have been introduced in the Act. In India, for example, victims of medical negligence can go to the consumer courts under the Consumer Protection Act, 1986. This Act contains no specific provision on medical negligence. But in *Indian Medical Association v. V. P. Shanta*⁷⁵ the Supreme Court held that medical services indeed do fall within the consumer protection. In spite of the fierce reaction showed by the doctors, it was brought within the purview of the Act. They doubted about the competency of the consumer courts in deciding on medical issues, which are highly technical and argued that a judge who does not have any medical background could not determine whether in particular case the doctor has administered treatment properly or not.⁷⁶ But their contention was not entertained. Given the failure of the medical councils to keep malpractice in check, given the extreme commercialization of health sector where non medical people venture into the health market, and given the extreme poverty and ignorance of a large section of the people, the National Consumer Forum and the Supreme Court have been persuaded to include the medical profession within the scope of the Consumer Protection Act.⁷⁷ The problems in the health sector of Bangladesh are the same. The proposed Act is therefore, required to include specific provisions on medical negligence, so that it could avoid the difficulties that India faced while including it within the scope of the Consumer Protection Act, 1986. In order to make consumer court's jurisdiction more acceptable medical fraternity should be asked to make suggestions on the matters.⁷⁸

Without going to the costly, dilatory, and complexities of civil litigation the plaintiff may get relief from the consumer forum, which should be more easily accessible, less time consuming, more flexible in procedures and desirable in the context of increasing commercialization of health services.⁷⁹ It is but natural that judges may not be competent enough to decide cases on medical issues, which are highly technical. It may assume from this that it would be better to leave these issues to a regulatory body composed of medical experts. But it cannot be a solution in a country like Bangladesh where the regulatory bodies in most of the department are seemed to be inactive. Apart from this the impartiality of the members of such board may be questioned as the accused himself belong to the same profession. In order to make a balance between the interest of the patient and physicians a forum should be introduced which is free from all shortcomings of the ordinary courts and the medical regulatory bodies. The consumer forum under the Consumer Protection Act should be constructed in this way. Two medical experts nominated by the Bangladesh Medical Association may be inducted in the consumer forum whenever the forum hears serious cases of negligence.⁸⁰

If medical services were treated as like as other services as it has been done in the case of India, then the forum would have no jurisdiction in the cases where

⁷⁵ (1995) 6 SCC 651.

⁷⁶ Damayanti S. "What is Medical Negligence? What are the Standard of Care Principles", op. cit, p. 48.

⁷⁷ Dr. Menon Madhava R. N. op. cit, p. 14.

⁷⁸ Ibid, p. 14.

⁷⁹ Ibid, p. 13.

⁸⁰ Ibid, p. 14.

treatment is given free of cost.⁸¹ As a result the government hospitals upon which most of the people depend could very easily escape their liability. Medical services should therefore, be treated distinctively from other services. In such a case a physician can be held liable for negligence irrespective of the fact whether he practices privately or an employee of a hospital. The right of the patient could be protected more effectively under this rule. The new law should also make provisions for vicarious liability. So that a hospital authority may be held liable for the negligence of doctors who are its employees, senior doctors for that of his junior and the owners of clinic for the negligence of its employees.

v) Active Regulatory Bodies

Adoption of new law on medical negligence cannot be the last word. The regulatory bodies have a critical role to play. They should take exemplary actions against the accused doctor, which would deter other from repeating the same offence. The BMDC, which is concerned with the private practice, should take disciplinary action against a doctor who has committed negligence without fear and favour. The DG Health and Health Ministry are the appropriate authorities in other cases that is, where health service is free of cost. In Health Ministry there must be a special branch to consider the complaint of negligence and an administrative tribunal may be established to settle such disputes.⁸²

vi) Judicial Activism

Article 15 of the constitution of Bangladesh provides that it shall be a fundamental responsibility of the state to attain, through planned economic growth, a constant increase of productive forces and a steady improvement in the material and cultural standard of living of the people with a view to securing to its citizens the provisions of the basic necessities of life, including food, clothing, shelter, education and medical care.⁸³ As the Article dealing with the basic necessities of life is embodied in part II of the constitution as directive principles of state policy it is not judicially enforceable. So the person to whom the right to medical care is denied cannot move to the High Court Division for its enforcement under Article 102 of the constitution. Right to life is a fundamental right guaranteed by part III of the constitution and thereby judicially enforceable.⁸⁴ In straight forwards an attempt use in the form of law suit against Government measures moles the fundamental principles of state policy while mole be maintainable in the court. The right to medical care can be brought within the purview of right to life, which includes the basic necessities of life.⁸⁵ Under Article 18 of the constitution the government is under an obligation to take measures for the

⁸¹ In India medical profession has been brought within the ambit of service under section 2(1) (o) of the Consumer Protection Act 1986. Under this section service means service of any description which is made available to potential users and includes the transport, processing, supply of electrical or other energy, boarding or lodging or both, entertainment, amusement or the purveying of news or other information but does not include the rendering of any service free of charge or under a contract of professional service.

⁸² Shobnom Sohana, (2001) "*Dactari Abohela Shonkranto Bangladeshesh Air*", op. cit, p. 49.

⁸³ Article 15, The Constitution of the Peoples Republic of Bangladesh.

⁸⁴ Article 32 of the constitution provides that no person shall be deprived of life or personal liberty save in accordance with law.

⁸⁵ *Francis Corallie Mullin v. Administrator of Delhi* AIR (1981) SC 746.

improvement of public health. Failure on the part of a government hospital to provide timely medical treatment to a person in need of such treatment results in a violation of his right to life guaranteed under Article 32. Leaving the rigid and complex process the court should proceed with the liberal interpretation of the constitution. The fundamental principles should be a guide to the interpretation of the constitution.⁸⁶ The court through judicial activism can enforce the right to basic necessities and health.

vii) Public Interest Litigation (PIL)

Illiteracy and poverty are two major factors, which refrain the people from seeking relief by judicial process. Being illiterate they do not know about the rights, which have been violated by negligence, and what type of relieves is available for it. The ways of seeking relief by the courts often gives rise to further sufferings, as they involve huge costs, which may not be afforded by the poor people. The active participation of the voluntary associations, legal aid NGOs, and human rights activists may improve the situation. They can file public interest litigation in such a case. Sometimes a prompt action is required to be taken to save the life of a patient whose condition has become deteriorated because of medical negligence. The ordinary civil and criminal process of the court may not be suitable here and a writ petition may be filed in the form of public interest litigation. In Asma's case the High Court Division on the basis of such a litigation filed by a human rights organization named "Adhikar" directed the relevant government authority to take immediate steps for her treatment.⁸⁷ The rights of the victims can be protected more efficiently, if the human rights NGOs come forward to help them who are in a vulnerable position with the instrument of public interest litigation.

viii) Role of Civil Society

The civil society has to play a vital role as regard the implementation of the rights of victims of medical negligence. Courts already face a substantial workload and while they have definite means to compel governmental compliance, they cannot be expected to assume full time role as government watchdogs. Civil society through the media, non-governmental organizations, lawyers and other professionals bear the responsibility of ensuring that constitutional obligations of right to health are met.⁸⁸

ix) Complain Box

In each and every hospital medical center there should be a complain box or complain center. The patients may put their grievances and suggestions to improve the existing situation. The BMDC should consider them seriously and heartily.⁸⁹

x) Awareness Programme

Ignorance of right is one of the main important reasons of the non-implementation of the rights of victim. So they should be made conscience about the rights to which they are entitled, how to check the violation and what is to be done in the case where violation has already been occurred. The non-governmental organization,

⁸⁶ Article 8(2), *The Constitution of the Peoples Republic of Bangladesh*.

⁸⁷ Shobnom Sohana, "Dactari Abohela Shonkranto Bangladesher Air" op. cit, p. 48.

⁸⁸ Dr. Menon Madhava R. N. op. cit, Pp.46, 47.

⁸⁹ Shobnom Sohana, "Dactari Abohela Shonkranto Bangladesher Air" op. cit, p. 49.

human rights activists, media, and the government as well may conduct such awareness programme.

11. Conclusion

Medicine is the science and art of diagnosing, treating, and preventing disease and injury. Its goals are to help people live longer, happier, more active lives with less suffering and disability.⁹⁰ But the goals are not always seemed to have been achieved; rather the people coming for treatment have to go through a further suffering in the cases, where the physicians are found to be in breach of duty, owed towards the patients. Such an incident is known as negligence. Sometimes it becomes so critical that the patients have to sacrifice their valuable lives or to suffer other irreparable injury to any other organs of their body. These incidents are increasing in Bangladesh due to the absence of proper law to enforce the accountability of medical practitioner. Besides this, the lack of awareness among the people about the implementation of rights which have been violated by medical negligence and slow and cumbersome process of the court have worsen the situation. Hence the wrong committed by the doctors go unpunished and the victims deprived from remedies.

To check the unexpected incidents which happen to the patients and their families proper steps should be taken by the state. The Judiciary is the appropriate organ in this regard. Though the number is few, the victims with the association of human rights institution and legal aid organization have filed some cases, but most of them are at the stage of investigation. Once finally settled, giving exemplary punishment for negligence to the medical practitioner and awarding compensation to the victims, the cases would create an opportunity for the people to have resort to legal procedure.

The relieves for negligence are mainly sought under the general law of the land, i.e. constitutional law, and criminal law, etc. The Penal Code contains some provision on negligence, which is used to bring an action for medical negligence. But it is incapable to provide adequate remedy as it lacks the concepts used in determining liability of negligence. In order to overcome the existing situations and to alleviate the sufferings of the victims of medical negligence a system should be introduced, whereby the dilatory and complex process of the civil litigation could be avoided. The institution which is easily accessible, less time consuming and more flexible in procedure should be established. A forum the complaint before which should be free of cost or at a minimum cost, would try the cases of medical negligence in a simple

⁹⁰ Microsoft ® Encarta ® 2006. © 1993-2005 Microsoft Corporation.

and flexible way, the jurisdiction of which should be extended not only to the medical services given on payment but to others also which are free of cost. The forum should consist of at least two or three experts nominated by medical fraternity, when it tries the cases on negligence, and other suggestions may be required from them. The proposed Consumer Protection Act may include a chapter on medicine comprising the above-mentioned suggestions, to avoid the technical problems in future.

There is no doubt that the adoption of law would be beneficial, but it is not easy to pass a law whenever it is required. The process of enacting the law has been started since 1992, but it has not yet come into being. No government belonging to different political parties showed sincerity in passing the Act. To remedy the situation the medical regulatory body (BMDC) should play an active role. Apart from the routine work of giving registration to the physicians it should take exemplary actions against guilty doctors. The steps taken by the Council might be proved to be more convincing in some cases, as it is composed of the physicians unlike judges of the ordinary court, who face no difficulty in proving cases of medical negligence. Another advantage of this system is that it is free of all complexities and costs of the ordinary courts. But the problem lies here is that most of the people do not know about the existence and function of this institution. In order to get advantage of it, the victims should be made aware of it. The human rights and legal aid institutes, non-governmental organization, media and above all civil society may play dominant role in this regard.

The judiciary should not be expected to shut its eyes on the ground that in the absence of appropriate laws in this regard it can do nothing in the case of medical negligence. It should give up the rigid concept and try to protect the rights of the victims in any way it can. The higher judiciary may enforce it through judicial activism.

The adoption and enforcement of law and taking other necessary steps against a guilty doctor may not always satisfy a victim. Because, either monetary compensation or the punishment of the accused cannot be the reparation of an invaluable life which is lost due to negligence. So the doctors should be more careful about their duties and should keep in mind the ethical aspect of their profession. The medical profession is governed by Code of ethics and Etiquette, which says that the principle object of the medical profession is to render service to humanity with respect for the dignity of man. Physicians should merit the confidence of patient entrusted to their

care, rendering to each a full measure of service and devotion.⁹¹ Unquestionably the doctors or the medical practitioners are engaged in a very noble profession dedicated to the cause of suffering humanity. The nobility will be meaningful and be highly honored in the society, when this profession is followed without departure from human values and inherent characteristics of the profession.⁹²

⁹¹ Bag R. K. *Law of Medical Negligence and Compensation*, op. cit, P. 186.

⁹² Abu Bakar Md. Khondaker, *The Weary Way to Justice*, Shahnaz Khondaker and Khondaker Md.Shariful Islam, Rangpur, (1994) p. 41.

PARAMETRIC REGRESSION MODEL AND COVARIATES OF CONTROL TIME OF DIABETES MELLITUS

Mst. Papia Sultana*
M. Abul Basher Mian*

Abstract: On being attacked by a disease, an individual tries to get cured of it. Diabetes is not a curable disease but can be kept in control state. The time required for an individual to reach the control state from the date of diagnosis may be influenced by many covariates. Based on follow up data of 615 diabetes patients various covariates are investigated to influence this control time using an appropriate parametric regression model and it is observed that sex, food habit (rice) and length of suffering time influence the required time to be in control state of the disease significantly.

Keywords: Parametric model, Log likelihood, AIC.

Introduction

Diabetes afflicts a large number of people of all social conditions throughout the world. So it is a major health problem of all the countries of the world including Bangladesh. It is a very complex problem that leads to many difficulties; even the patient may die when not properly handled. In spite of increasing advances in the past several years in almost every field of diabetes research and patient care, the personal and public health problem of diabetes, already of vast proportion, has continuously been increasing day by day. BIRDEM (Bangladesh Institute of Research and Rehabilitation in Diabetics, Endocrine and Metabolic Disorders) reports the same situation. In 1956 it starts with only 39 patients. In 2001 the number of registered patients of BIRDEM is 15188, which is an alarming situation for us. Hence we need more research and more investigation into this disease.

Aim and Objective of the Study

A lot of works has been done so far on diabetes mellitus, both clinical (such as Barth R. et al (1991), Zimmet, P. et al (1983), Mc Keigul, P. M. et al (1989), Walker, W. G. et al (1990), Osei, K. (1990), Johnston, C. (1990), Ajhuja, M. M. S. and Shah, P. (1991), Sayeed (1993) etc.) and statistical (such as Ferdousei and Islam (2000), Khan and Islam (1998), Kabir and Islam (2000), Gulshan and Islam (2000), Sharmin (2000), Mallick and Islam (2000) etc.). Most of the statistical works are done on the transition of state of the disease to non-disease (control) and control to disease based on Markov Chain models followed by the analysis of prognostic factors, popularly known as covariates that might have association with diabetes mellitus. A few studies also have investigated the influence of other diseases on diabetes mellitus. No work so far is observed to investigate the impact of various covariates on control time for diabetes mellitus from the date of diagnosis. We know that when a

* Lecturer, Department of Statistics, University of Rajshahi.

** Dr. M. Abul Basher Mian, Professor of Statistics & Director, IBS, University of Rajshahi.

patient is affected by a disease he (she) tries to get cured of it and the time that the disease takes to be cured from the date of diagnosis may be considered as the lifetime of the disease. That is, the date that a person getting registration as a diabetic patient in a diabetic center may be considered as the starting point of the diseases and when he (she) is in control state of the disease, may be considered as the ending point of the disease. The waiting time to be in the control state is considered as his lifetime of diabetes state and is termed as control time of the disease. Various covariates may influence this control time. So the target of this paper is to investigate which covariates significantly influence the control time of diabetes mellitus and which covariates have most impact on it using model based approach; and for that we need to investigate an appropriate model. These information may help both the patient and diabetic centers to administer the disease.

The Data

In applied research, data plays a vital role. Unless data is reliable, findings based on such data is not acceptable. Reliability of data is related with the mode of collection of data and the accuracy of information collected. If our aim is to acquire knowledge about some unknown things then accuracy of information is more vital than the mode of collecting information. But if we like to infer about some characteristics of a large population based on a small sample information, then mode of collecting data and sampling design become important along with the accuracy of collected information. A brief description of data used in the study is given below. The study is based on the set of follow up data of size 615 diabetic patients registered at different point of time in the Laxmipur Diabetic Center, Laxmipur, Rajshahi, Bangladesh who have come to visit to the center during the period 25 July 2001 to 30 August 2001. Data has been collected from the Center through a set questionnaire by interview method. During the registration at the center a social officer and doctor interview each patient to fill-up the case history sheet of the record (guide) book, which is given to the patient. They also check some clinical test of the patient and record them on the book. Also a follow-up record is maintained on the book from patients at each visit to center after registration for further need. Our data is based on these information recorded on the book; some information like food habit (rice), food habit (vegetable), food habit (sweet) and heredity was collected from the patient directly. Note that no censoring has been used here. We have collected data on 25 points among which 11 points can be considered as covariate which can influence the control time. These covariates are

1. Age = Exact age in the last birthday as was recorded in the patient history.
2. Sex = 1 if male; 0 if female.
3. Marital status = 1 if married; 0 otherwise.
4. Food habit (rice) = 1 if takes rice thrice a day; 0 otherwise.
5. Food habit (vegetable) = 1 if eats enough vegetable; 0 otherwise.
6. Food habit (sweet) = 1 if the patient is fond of sweet or eats more sweet; 0 otherwise.
7. Body Mass Index (BMI) = Exact BMI calculated from height and weight of patient as was recorded in patient book at the time of registration.
8. Blood Pressure (BP) = Exact systolic blood pressure as was recorded in patient book at the time of registration.
9. Blood Glucose Level (BGL) = Exact blood glucose level after 2-hours of 75 gm glucose load as was recorded in the patient book.
10. Heredity = 1 if parents or blood connected relative have/had diabetes; 0, otherwise.
11. Length of suffering (suffering time) = Exact length of suffering in days before registration, as was recorded in the patient book.

Note that all the covariates are as was recorded at the time of registration as a diabetic patient in the center. Main variable is the control time which is taken in days and the first time that the patient come into control state of the disease is taken into consideration.

Methodology

The time required for an individual to reach the control state from the date of diagnosis is a random variable varying from individual to individual and likely to have a probability distribution but not known. Hence, if a probability distribution provides a good fit to the data, it will give more precise estimates of the quantities of interest. However, exponential, Weibull, log normal and log logistic are the most popular distributions used for lifetime data. In this paper these distribution models will be examined in univariate setting and then regression model will be extended introducing covariates to the models. First let me consider the Weibull distribution, which has the survival function

$$S(x) = \exp(-\alpha x^\beta)$$

where $\alpha, \beta > 0$ are scale and shape parameters of the distribution. Taking log transformation of time, the survival function of $Y = \ln X$ is given by

$$S(y) = \exp(-\alpha e^{\beta y})$$

If we redefine the parameters as $\alpha = \exp(-\mu/\sigma)$ and $\sigma = 1/\beta$, then Y follows the form of a log linear model with

$$Y = \ln X = \mu + \sigma W$$

where W follows extreme value distribution with probability density function,

$$f(w) = \exp(w - e^w)$$

and survival function

$$S(w) = \exp(-e^w)$$

Thus the underlying probability density function and survival function for Y are

$$f(y) = (1/\sigma) \exp[(y - \mu)/\sigma - e^{(y-\mu)/\sigma}]$$

and

$$S(y) = \exp[-e^{(y-\mu)/\sigma}]$$

Note that when $\beta = 1$, equivalently $\sigma = 1$, then Weibull distribution reduces to exponential distribution. For the log logistic distribution with the same parameter transformation as Weibull distribution, W follows standard logistic distribution with probability distribution function

$$f(w) = e^w / (1 + e^w)^2$$

and survival function

$$S(w) = 1/(1 + e^w)$$

Similarly, in the log linear model of log normal distribution, W has standard normal distribution. Another model of interest would be the generalized gamma distribution, but the fact is that this model is most commonly used as a tool for picking an appropriate parametric model (e.g. Weibull or log normal) for lifetime data, rarely, as the final parametric model. Hence we have not included this distribution in our analysis. The above linear form for the log time are also used to incorporate

covariates. That is, for a set of covariates $Z = (Z_1, Z_2, \dots, Z_p)'$, the parametric regression model has the form

$$Y = \ln X = \mu + \gamma'Z + \sigma W$$

where γ is the vector of regressor coefficients. In this paper score test, which has the form

$$U = \frac{\hat{\theta} - \theta_0}{\text{se}(\hat{\theta})} \sim N(0,1), \text{ has been used to test individual model parameters.}$$

Selection of an appropriate parametric model is to based on minimum Akaike Information Criterion (AIC). For the parametric models, the AIC is given by

$$AIC = -2 * \log(\text{Likelihood}) + 2(p + k)$$

where p is the number of regressor coefficients and $k = 1$ for exponential model and $k = 2$ for Weibull, log logistic and log normal model. Hence best model will be with the smallest AIC. All analysis has been carried out using computer programm S-Plus.

Results and Discussions

First let us check which distribution model fits good to the control time of diabetes mellitus data in univariate case. Remark that in this case $p = 0$. The result is summarized in table 1.

Table 1: Results of fitting parametric models to control time

Distribution	Log-likelihood	AIC
exponential	-3852.5	7707.0
Weibull	-3688.8	7381.6
log logistic	-3595.2	7194.4
log normal	-3591.1	7186.2

From this table we see that the log normal distribution has smallest AIC and hence, provides the best fit to the control time of diabetes mellitus data. Now we introduce all the covariates to the model and carry out the analysis. The results are summerised in tables 2-5. Note that σ is fixed at 1 for exponential model.

Table 2: Results for parametric regression model with Weibull distribution

parameter	estimate	s.e.	score test statistic	p-value
Intercept	2.836557	0.682258	4.158	0.0000322
suffering time	0.000401	0.000109	3.688	0.0002256
food habit (rice)	0.326641	0.127137	2.569	0.0101934
food habit (vegetable)	0.182315	0.175043	1.042	0.2976235
food habit (sweet)	0.138736	0.130186	1.066	0.2865686
age	-0.000883	0.005943	-0.149	0.8818769
sex	0.440847	0.129682	3.399	0.0006752
marital status	-0.064972	0.513270	-0.127	0.8992697
BP	0.002013	0.002165	0.930	0.3524738
BGL	0.20047	0.013502	1.485	0.1376034
heredity	0.1592	0.1266	1.26	0.209
BMI	0.0359	0.0164	2.19	0.0287
scale	1.51483	0.0431725	11.9248	8.7858e-33
log-likelihood = -3670.1, AIC = 7366.143				

Table 3: Results for parametric regression model with log logistic distribution

parameter	estimate	s.e.	score test statistic	p-value
Intercept	2.41132	0.5956787	4.048	0.0000517
suffering time	0.00033	0.0000809	4.075	0.0000460
food habit (rice)	0.33498	0.1149876	2.913	0.0035777
food habit (vegetable)	0.46327	0.1538534	1.061	0.2885856
food habit (sweet)	0.12056	0.1137445	1.060	0.2891712
age	-0.00608	0.0052710	-1.153	0.2489890
sex	0.26870	0.1198993	2.241	0.0250208
marital status	0.11172	0.4378375	0.255	0.7985895
BP	0.00385	0.0025872	1.488	0.1366427
BGL	0.01615	0.0117347	1.376	0.1687699
heredity	0.1692	0.1147	1.48	0.140
BMI	0.0176	0.0154	1.14	0.255
scale	0.78623	0.0265747	-8.04393	8.70001e-16
log-likelihood = -3579.6, AIC = 7185.243				

Table 4: Results for parametric regression model with log normal distribution

parameter	estimate	s.e.	score test statistic	p-value
Intercept	2.425906	0.6193616	3.9168	0.0000897
suffering time	0.000305	0.0000806	3.7842	0.0001542
food habit (rice)	0.323982	0.1159630	2.7938	0.0052086
food habit (vegetable)	0.204478	0.1578533	1.2954	0.1951936
food habit (sweet)	0.133166	0.1154685	1.1533	0.2487997
age	-0.004516	0.0053153	-0.8496	0.3955490
sex	0.302369	0.1199920	2.5199	0.0117385
marital status	0.025942	0.4663286	0.0556	0.9556370
BP	0.003122	0.0024112	1.2948	0.1953980
BGL	0.017770	0.0120471	1.4750	0.1402087
heredity	0.1595	0.1155	1.38	0.167
BMI	0.0249	0.0154	1.62	0.105
scale	1.3897	0.039607	9.83961	7.60033e-23
log-likelihood = -3576.1, AIC = 7178.290				

From these tables (table # 2-5) again we observe that the parametric regression model with log normal distribution gives the smallest AIC. Since the hypothesis that $\sigma = 1$ is significant for Weibull, log logistic and log normal model, any of these three models can be used to analyse the data and it would not be wise to use exponential distribution. But because of the smallest AIC, the parametric regression model with log normal distribution is the best model to analyse the data. This model suggests that suffering time, food habit (rice) and sex are significant covariates. Also positive sign of parameters of these three covariates indicate that patients with more suffering time (i.e., old diabetes), patients who take rice thrice a day and male patients take more time to control the disease. Also other covariates can be interpreted accordingly using this model, although those do not significantly influence the control time.

Conclusion

In quest of an appropriate probability model for the control time distribution of diabetes mellitus we have examined the four prominent lifetime distribution in univariate case and based on the smallest AIC decision criterion, we found that log normal distribution fits best to data. Later these models have been examined including all covariates and again the parametric regression model for the log normal distribution provides best fit to data. From the estimated value of μ and σ of this model it may be concluded that mean time to reach the control state is 30 days with standard deviation 72.16. Also we have found that male patients significantly take more time to control the disease than female; perhaps the cause is that females are careful about their disease or do adequate physical work at home. Patients with old diabetes also significantly take more time to control it, which is obvious and patients who take rice thrice a day significantly take more time to control the disease than the patient who do not. Another two important covariates for Diabetes are BMI and BGL, and it is observed that patient with higher BMI and BGL take more time to become into control state too, but not significantly. Therefore, according to the analysis of this paper recommendations are

- Awareness about Diabetes should increase among people so that as soon as they face the symptoms of the disease go to the center for a check;
- Male patients of the center should encourage to take care more about their disease;
- All patients should encourage to take less rice or alternative food of rice.

References

- Ahuja, M. M. S., and Shah, P. (1991). Profile of non-insulin dependent diabetes mellitus in India. *International Journal of Diabetes in India*, Vol-II, pp 3-4.
- Barth, R. et al. (1991). Intensive education improves knowledge, compliance and foot problems in type-II diabetes. *Diabetic Med*, 8/2, pp 111-117 (*International Diabetes Monitor*, Vol 3. No. 4).
- Cox, D.R. (1972). Regression Models and Life Tables (with Discussion). *Journal of the Royal Statistical Society*. B34, pp 187-220.
- Cox, D.R. and Snell, E.J. (1968). A General Definition of Residuals (with Discussion). *Journal of the Royal Statistical Society*. B30, pp 248-275.
- Ferdousi and Islam, (2000). A Second Order Markov Chain for Analyzing Covariate Dependence Pattern of Longitudinal Data with an Application to Diabetes Mellitus. *7th National Statistical Conference*, Bangladesh Statistical Association.
- Gulshan and Islam, (2000). An Extension of GEE for Repeated Measures with Polytomous Responses. *7th National Statistical Conference*, Bangladesh Statistical Association.
- Johnston, C. (1990). Islet Function and Insulin Sensitivity in the Non Offspring of Conjugal Type 2 Diabetic Patients. *Diabetes Med*, 7, pp 119-244.
- Kabir and Islam, (2000). Analyzing Heterogeneous Transitions Using GEE for a Two-State Markov Model with an Application to Diabetes Mellitus. *7th National Statistical Conference*, Bangladesh Statistical Association.
- Klein, J.P. and Moeschberger, M.L (2003). *Survival Analysis: Techniques for censored and truncated data*. 2nd edition. Springer.
- Mallick and Islam, (2000). Estimation and Test for Markov Chain Based Logistic Regression Model for Longitudinal Data. *7th National Statistical Conference*, Bangladesh Statistical Association.
- Mc Keigul, P. M. et al (1989). Diabetes, Insulin Resistance and Central Obesity in South Asians and Europeans. *Diad. Med*, 6 suppl 1, pp A41-42.
- Osei, K. (1990). Increased Basal Glucose Production and Utilization in Non diabetic First Degree Relative of Patients with NIDDM. *Diabetes*, 39, pp 597-601.
- Sayed, M. A. (1993). Epidemiological Study of Diabetes Mellitus in Bangladesh. *The 1st Novo Nordisk Diabetes Update Seminar in the Memory of Late Prof. M. Ibrahim*, Dhaka.
- Sharmin, (2000). Assessment of Time Varying Exposure in a Hazards Model. *7th National Statistical Conference*, Bangladesh Statistical Association.
- Walker, W. G. (1990). Prospective study of the impact of hypertension upon kidney function in diabetes mellitus. *Nephron*, 55, suppl 1, pp 21-26 (*International Diabetes Monitor*, Vol. 2, No. 5).
- Zimmet, P. (1983). Prevalence of Diabetes and Impaired Glucose Tolerance in the Biracial (Melanesian and Indian) Population of Fiji: a Rural-Urban Comparison. *Am. J. Epidemiology*, 118, pp 673-167.

Book Review

A. F. Salahuddin Ahmed & Bazlul Mobin Chowdhury, Editors; *Bangladesh : National Culture and Heritage : An Introductory Reader*, Dhaka: Independent University, Bangladesh, 2004, pp. 10+466. (Introduction, 16 Chapters, 4 Maps, 29 Illustrations, Glossary, Index).

The ambitious book has 25 contributors (22 men and 3 women), mostly historians, others being sociologists, philosophers, archaeologists, economists, humanists etc. Most of these authors are internationally reputed senior scholars. The content has an amazing range of coverage: archeology, history, social and cultural tradition, political ideas and institutions, economy, education, social and religious movements, art and architecture, language and literature, music, folklore, religion, and a lot more.

The book presents a splendid array of Bengali heritage items and gives a general and vivid picture of Bangladesh's historical inheritance. It is indeed a storehouse of information and brilliant interpretations. Although written by learned specialists, it generally avoids technical vocabulary and presents complex things in rather plain but elegant language. It is an informative but pleasant reading for students of Bangladesh Studies as well as general readers.

Part I of the volume has eleven chapters of which the first four cover ancient and medieval periods, the emphasis being on society and culture. Shorter geanthropological and political discourses also enrich this part. The nineteenth century has received extensive treatment in following five chapters. The chief concerns here include social, economic, religious as well as political changes. Professor A. F. Salahuddin Ahmed has presented a splendid interpretation of the nineteenth century in three chapters. And he is the only writer throughout the volume who deals with the role of ideas (although only political). Chapters eight and nine are concerned mainly with the twentieth century, emphasis being on politics. Writer Tajul I. Hashmi has done an excellent job in chapter nine which is incisive in analysis and astonishingly objective. Sociologist Bazlul Mobin Chowdhury has contributed an analytical and well-documented piece on social changes in two centuries since the Permanent Settlement (1793).

Part II consists of five chapters (12 through 16) covering religion, art and architecture, Bangla literature, Bengali music and folk culture. Professor A B M Husain has written a brilliant report on the architectural heritage of Bangladesh covering all periods in only 11 pages. This amazingly well-organized and interpretive piece however lacks illustrations. Professor Anisuzzaman's article on Bangladesh language and literature is a lucid, and erudite presentation of the subject. Professor Karunamaya Goswami's article on Bengali music is a gratifying piece which presents an informative and eloquent description of the subject.

However, a number of deficiencies are noticeable in the otherwise rich omnibus. Bengali intellectual heritage has no systematic presentation in the volume. Similarly, Bengali women in history, gender-relation and sex ideal are conspicuous by their absence in the volume. One also can legitimately expect discussion of Bengal's

environmental heritage and the country's rich oral tradition. These are important elements of this country's inheritance from the past. One can only hope that these will be duly incorporated in a future edition of the work. Common hazards of a joint academic venture have duly told upon the quality of the volume. While some of the articles are highly erudite and introspective, others seem to be correspondingly shallow and simplistic. The article on Hinduism is only a little over four pages long and it contains almost nothing about Hindu heritage in Bengal, except some very general talk on the *Durgāpūjā*. The same is also generally true about the two pieces on Buddhism and Christianity.

No uniform system of documentation has been followed in the volume. In most cases a bibliographic/reading/reference list has been provided, footnotes in a few cases, and almost nothing in the cases of at least two articles. Similarly, no general scheme of transliteration has been followed in the volume; that's why the same Bangla letter has been rendered both as *C* and *Ch* (as in *Calit* and *Char*, see Glossary p. 437). Also note the same word written as *Bhagvat Gita* (p.3) and *Bhagavad Gita* (pp.311-13). One more example of non-uniformity in spelling is Plassey (p.115), Palashi (pp. 241-42) and Palasey (p. 338). Absence of diacritical marks in Bangla, Sanskrit and other non-English terms has created confusions in both accent and meaning. Anarchy in spelling is noticed throughout the volume and spelling mistakes have invaded even personal names. Thus, *Bhattashali* has become *Battasali* (p. 21), *Munim* Khan has turned *Mumin* Khan (p. 123), and *Binayak* Sen has changed to *Bainayak* Sen (p.245). There are many more such examples. Grossly wrong dates [such as Sri Chaitanya (1448-1553) (p.3)] and numbers [such as 20 million speakers of Bangla language (p.359)] have infested the text at many places.

Only two articles have been graced with beautiful illustrations that do help our understanding. However, some other articles (e.g. Chaps. 13(a) and 16 as well as the two pieces on Hindu and Buddhist religions) urgently needed such embellishment.

Despite all these, the book's general get-up is excellent. The cover design is extremely imaginative and all the more appropriate. Quality paper, brilliant printing, and nice binding are all nothing but satisfactory. The glossary is rich, but incomplete. The index is even more amazing, but still not really comprehensive.

As a pioneer work on heritage, the volume is a remarkable achievement on the part of its makers, despite the few drawbacks pointed out in this review. One can legitimately hope that the book will find the popularity due to it and an early second edition will present a much refined version of it.

Priti Kumar Mitra

Professor of History

IBS, Rajshahi Universi

আইবিএস প্রকাশনা

পত্রিকা ও গ্রন্থ (বাংলায়)

আইবিএস জার্নাল (বাংলা), ১৪০০:১-১৪১২-১৩

ঐতিহ্য-সংস্কৃতি-সাহিত্য (সেমিনার : ৩), সম্পাদক : এম.এস. কোরেশী (১৯৭৯)

বন্ধিমচন্দ্র ও আমরা (সেমিনার : ৬), আমানুল্লাহ আহমদ (১৯৮৫)

বাঙালীর আত্মপরিচয় (সেমিনার : ৭), সম্পাদক : এস.এ. আকন্দ (১৯৯১)

বাংলা সাহিত্যের ইতিহাস রচনার সমস্যা (সেমিনার : ৯), সম্পাদক : এম.এস. কোরেশী (১৯৭৯)

বাংলার ইতিহাস (মোগল আমল), ১ম খণ্ড, আবদুল করিম (১৯৯২)

Journals and Books (in English)

The Journal of the Institute of Bangladesh Studies, Vols. I-XXIX (1976-2006)

Reflections on Bengal Renaissance (Seminar Volume 1), edited by David Kopf & S. Joarder (1977)

Studies in Modern Bengal (Seminar Volume 2), edited by S.A.Akanda (1984)

The New Province of Eastern Bengal and Assam (1905-1911)
by M.K.U.Molla (1981)

Provincial Autonomy in Bengal (1937-1943) by Enayetur Rahim (1981)

The District of Rajshahi : Its Past and Present (Seminar Volume 4),
edited by S.A.Akanda (1984)

Tribal Cultures in Bangladesh (Seminar Volume 5), edited by M.S. Qureshi (1984)

Rural Poverty and Development Strategies in Bangladesh (Seminar Volume 8)
edited by S.A.Akanda & M. Aminul Islam (1991)

History of Bengal : Mughal Period, Vols. 1 & 2 by Abdul Karim (1991, 1995)

The Institute of Bangladesh Studies : An Introduction (2004)

The Journal of the Institute of Bangladesh Studies : An Up-to-date Index
by M. Shahjahan Rarhi (1993)

Research Resources of IBS : Abstracts of PhD Theses
Compiled by M. Shahjahan Rarhi (2002)

Orderly and Humane Migration : An Emerging Development Paradigm
edited by Priti Kumar Mitra & Jakir Hossain (2004)

CONTENTS OF VOL. 29, 2006

Electronic Means in Tourism: Applicability and Challenges for Bangladesh Muhammad Ismail Hossain & Nasrin Akter	7
Major Problems and Prospects of Mongla Seaport Tasnim Siddiqua & Md. Nasif Ahsan	25
Legal Environment For Developing Sound Labour Relations in Bangladesh : A Case Study of the Public Sector Industries Md. Omar Ali & Reza Hasan Mahmud	47
Tobacco Use and Smoking in Bangladesh: Regulatory Approaches and Control Provisions in Bangladesh Zulfiquar Ahmed	61
Legislative Barriers to Press Freedom in Bangladesh and Canada: A Critical Overview Abul Mansur Ahmed	77
Committee System in Bangladesh Parliament (1972-2001) Rakiba Yasmin & Kafil Uddin Ahmed	87
Evaluation of Credit Policy – A Case Study of Some Private Sector Textile Mills in Bangladesh Begum Ismat Ara Huq & Mohammad Main Uddin	101
Pineapple Marketing in Bangladesh: Problems and Prospects Md. Aynul Haque & S. M. Khalilur Rahman	113
Situation of Women among the Ethnic Minorities: An Anthropological Study of Oraon Community in Northern Bangladesh Tahmina Naznin, Syed Ajijur Rahman & Khandaker Mursheda Farhana	123
Dowry System and It's Correlates Mst. Papia Sultana	129
Learners' Culture in the Contents of ELT Materials : Arguments and Practicability Mohammad Emdadul Huda	137
Education, Occupation and Income Mobility: Evidence from a Micro Survey Md. Mostafizur Rahman & Samad Abedin	149
Environmental Impacts of Coal Fired Power Plant: A Case Study on Barapukuria, Dinajpur Abul Kalam Azad & Ms. Jolly Sultana	165
Financial Sector Reform in Nationalised Commercial Banks' Performance: An Evaluation Rukshana Begum	173
Industrialization in Pre-Liberation Bangladesh Indrajit Kundu	187
Causes of Persistent Rural Poverty in Bangladesh : An Analysis of Facts and Theories Md. Rezaul Karim	201