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Editor

Dr Ashima Sharma Borah

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PRINCIPAL'S COLUMN

It gives me immense pleasure that the Editorial Board of the Teachers' Journal 'Genesis' has put their entire effort to publish the IVth Volume of the said journal on the occasion of Silver Jubilee of K C Das Commerce College. 'Genesis' is a journal where my teacher friends try to focus their research work, particularly the young research scholars irrespective of their concerned discipline.

A well brought out research journal is a good yardstick to estimate the intellectual vibrancy and creative potentiality of the institution. I hope this issue of 'Genesis' will bring new hope and inspiration in the academic arena.

Dr Hitesh Deka

From the desk of the Editor

It is indeed a privilege to shoulder the responsibility of editing the research journal 'Genesis', but at the same time I find it to be a challenging job for me.

The main objective of publishing 'Genesis' is to give focus to the research work undertaken by the teachers of the college, also to encourage the upcoming research, to get their work due recognition. We decided to accept papers from the teachers irrespective of their Subject Specialization. A Specialized research paper would be left unread by the large section of readers. Even then few of the technical type articles are included to suit the relevancy of the journal.

I am thankful to the authors for their contribution, to the editorial board for their help in editing. And particularly I offer my thanks to Dr. Hitesh Deka, Principal of the College, without his co-operation and encouragement this work would have been next to impossible. I also thank Shri Hiranya Kumar Sarma, former Field Adviser, NCERT for taking the pain of translating the article of Dr. Dipak Barman particularly.

At the end I apologize for deleting and making correction in the articles, whenever it was necessary, thus exercising duly or unduly the editor's privilege.

Dr Ashima Sharma Borah

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ASSURING QUALITY IN CONTEMPORARY HIGHER EDUCATION

Dr. Swabera Islam*

Economics and Literacy

Literacy rates are considered to be to be a crucial measure of a region's human capital. This claim is made on the grounds that literate people can be trained less expensively than illiterate people. Literate people generally have a higher socio-economic status and enjoy better health and employment prospects. Policy makers also argue that literacy increases job opportunities and access to higher education. In addition to the potential for literacy to increase wealth, wealth may promote literacy, through cultural norms and easier access to schools and tutoring services.

The definition of literacy today will consider how well adults can use printed and written information to function in society, to achieve their goals, and to develop their knowledge and potential. As society becomes more technologically advanced, the quantity and types of written materials are growing. Adults are expected to use information from these materials in new and more complex ways and to maintain and enhance their literacy skills through lifelong learning activities. Literacy skills are critical not only for the personal achievement of individuals, but also for the social and economic development of each nation.

A population's literacy skills has a bearing on how well a country performs economically. The world we live in today is vastly different from that of a generation ago. Technological

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change has transformed the way in which work is done; competition in many industries is global in nature These changes have, in turn, brought rising skill requirements. Countries that are successful in endowing their populations with strong skills are usually in a better position to meet the economic challenges of operating in a globalized information economy.

Education in general and higher education in particular is now accepted as an instrument for the socio-economic development of a country and this is true in the case of both developed and developing nations. There is an unprecedented demand for and a great diversification in higher education, as well as an increased awareness of its vital importance for socio-cultural and economic development, and for building the future, for which the younger generations will need to be equipped with new skills, knowledge and ideals. Higher education includes 'all types of studies, training or training for research at the post-secondary level, provided by universities or other educational establishments that are approved as institutions of higher education by the competent State authorities'. Everywhere higher education is faced with great challenges and difficulties related to financing, equity of conditions at access into and during the course of studies, improved staff development, skills-based training, enhancement and preservation of quality in teaching, research and services, relevance of programmes and the employability of graduates and those with higher degrees. At the same time, higher education is being challenged by new opportunities relating to technologies that are improving the ways in which knowledge can be produced, managed, disseminated, accessed and controlled. Equitable access to these technologies should be ensured at all levels of education systems. Moreover, owing to the scope and pace of change, society has become increasingly knowledge-based so that higher learning and research now act as essential components of cultural, socio-economic and

environmentally sustainable development of individuals, communities and nations.

Quality of Higher Education in India

Among many, the most important problem that the higher education system in India is confronted with is the poor and deteriorating quality. One can look at the quality of the graduates universities and colleges produce, the values they acquire,their empolyablity, and earnings associated with their education. The labour market performance of the graduates, generally referred to as the external efficiency of education, is often taken as an important indictor of the quality of the education they have received. In India and other developing countries, the rates of return to higher education are sizeable. But they indicate only a partial dimension of the quality of education, and cannot capture many other dimensions, particularly the values the graduates have acquired. Quality of output of higher education depends, upon the quality and quantity of a variety of inputs, such as physical infrastructure and teachers.

In India, there exists a good number of universities and other institutions of higher education of excellence, but at the same time there also exists a large number of institutions of substandard quality. Therefore, although the total quantum of output of our higher education institutions is one of the largest in the world, when this quantum is adjusted for quality, and in case of even indicators of quantity, India does not rank well when compared with many developed and even developing economies. For example, India has a huge number of scientists and engineers, and ranks third in the world. But the myth of the third largest stock of scientific and technical manpower in the world stands exploded if one carefully examines the quality of the manpower (Jandhyala B. G. Tilak, 1997). The stock is not adequate to match the requirements of the economy. For example, for every one thousand population, there were only 7 scientists/engineers in India in 1999, while in many other

countries the corresponding figure is 10-30 times higher. The stock of manpower consists of first graduates (in sciences and engineering). Post graduates are few; and doctorates are fewer. This reflects the 'quality of the science and technology manpower India has. The research output of our higher education system measured in terms of easily measurable indicators, of say number of products, processes, design prototypes developed, or publications and citations, does not compare very favourably with many other developed and even developing countries.

Higher Education and Sustainable Development

The concept of sustainable development appeared when economic growth was given ecological objectives such as prevention and reduction of pollution in order to preserve the environment. Sustainable development allows a long term utilization of environmental resources for social and economic development while at the same time, attempts to maintain the quality of the environment. Sustainable development offers a solution to eradicate poverty by creating jobs, ensuring food, water, housing, medical and social assistance. Higher and technical educationis considered to be the most significant means to achieve these objectives.

The education imparted by universities in India continued to be stereotyped till NAAC, evoked the desire among higher education institutes to reform the system. Curricular innovations, improvement of teaching and learning and other quality assurance strategies, are now being widely attempted by educational institutes.

Education is perhaps the single most important means for empowerment and for a sustained improvement in well-being. Improvements in educational attainments are accompanied by improvement in health and longevity of the population and the country's economic growth. Education reinforces the socio-economic dynamics of society towards equality and promotes a

social order conducive to an egalitarian ethos. In short, education is the best social investment. This is the significance of quality higher education.

The twenty-first century is the century of knowledge. New technologies backed by proper public policies will lead to healthier lives, greater social freedoms, increased knowledge and greater productivity. Distributive justice would become an achievable goal. Technology networks are expanding people's horizons and creating potential to achieve quicker progress. Scientific or technological innovation has relevance and value to our people if it provides effective, affordable and sustainable solutions to the problems of underdevelopment, poverty, illiteracy, hunger and safe drinking water. Amartya Sen describes them as the great 'unfreedoms'; and his thesis on 'Development as Freedom' is based on that premise. Even though every year three lakh professionals, four lakh post-graduates, and more than one thousand doctorates are added to the country's reservoir of human resources, yet the 'unfreedoms', which are at the vestiges of poverty continue to hold us in bondage. Sustainable development is a basic human right. Unless this target is reached with the potent tool of education, the purpose of higher education would remain unfulfilled.

Without adequate higher education and research institutions providing a critical mass of skilled and educated people, no country can ensure genuine endogenous and sustainable development.

Quality and Governance Structures

Throughout history, education has been locked in a triangle defined by balancing quality, accessibility and cost. We need to create wide accessibility to quality education at low cost. When you increase accessibility or cut costs, quality usually goes down. Conversely, most ways of improving quality is to restrict access or increase costs. We have to strike a

balance here with technological innovations. Change-resistant governance structures and rigid management practices of the university and affiliated college system are the real barriers to any innovation.

Our higher education system has to equip itself for higher enrolment in the coming years. In this context, our affiliating system as its exists now is outdated and can only be described as a severe hindrance to quality and growth.

How can there be full development, much less sustainable development if more than half the population comprising women, children and the other marginalized sections remain illiterate and thus unempowered? The Constitutional provisions guaranteeing equality of status and opportunity together with those for affirmative action furnish the tool to correct the imbalance, provided they are used effectively. Mere reservation quotas have failed to provide the solution. This relates to the sphere of good governance.

A supportive as well as a flexible governance structure is an imperative condition for a sustained qualitative education system.

Quality and Institutional Autonomy

Another aspect of education in relation to development and maintaining quality is the question of autonomy. The most important aspect of academic autonomy is autonomy for the teacher. In fact the teaching profession is the most autonomous profession one can imagine. But in the affiliated system the college teacher does not enjoy any academic autonomy. Academic autonomy involves deciding the course content, evaluation of students and imparting information that one knows is the right one. Repeated examinations/continuous assessment are an integral part of the teaching process. However if the teacher is not directly part of the examination system and if he is alienated from such vital academic functions, as is

happening in our affiliating system, how can quality be assured ?

In general, the autonomous colleges, autonomous institutions and other National Centres of excellence sustain quality performance in all areas. Along with their better capability, the autonomy raises them to a higher level of efficiency in operations. The criticism from some corners that college autonomy may lead to deterioration of quality and standards has been proved to be unfounded in the light of the achievements of the vast majority of the autonomous colleges. College autonomy is a challenge to the teacher. It is a teacher-empowering, learner-centric system. Seen in combination with accountability by way of quality assurance and accreditation, college autonomy is the most desired thing in the complex collegiate education system in the country. The premier institutions like IITs, IIMs and several deemed universities are totally autonomous systems with 100-200 teachers and 1500-2500 students. The teachers who teach in the class room in these institutions are directly responsible and accountable for the entire process of curriculum design, policy making, admission, teaching, evaluation, placement, extension and overall administration. If such a system is possible in institutions of this kind with UG and PG courses and research, why cannot colleges with about the same number of students and teachers in the conventional streams of arts, sciences, humanities and commerce also practise these autonomous procedures? The governance structures existing in the large affiliating universities in the country are essentially the same as those designed several decades ago when these universities were having just a few thousand students and a few hundred teachers. Now in the affiliation system we deal with lakhs of students, hundreds of affiliated colleges and tens of thousands of teachers. A decentralized academic administration by way of making colleges autonomous by changing the Acts, Statutes and governance patterns of universities is essential for promoting the independent initiatives of teachers and individual

institutions. Several colleges of engineering and institutes of higher technical education in the country have adopted autonomy for the purpose of availing themselves of international and multinational projects for infrastructure and academic development. This should be possible for the colleges of arts, sciences and commerce also which are in no way second in importance or relevance, if meaningful approaches are adopted.

Recent studies on education and its relation to sustainable development have revealed that in India, 89% of the undergraduate students are in colleges. 66% of the postgraduate students are in colleges, 85% of the teaching faculty work in colleges, but there are no positions of Professor in affiliated colleges although teachers are equally qualified as those at a university. This is a discouraging, debilitating attitude that cannot promote quality. Why can't we have independent autonomous institutions that impart quality education in this country in liberal arts, sciences and commerce? The United Kingdom with a population of only 6 crores has nearly 154 universities and 331 colleges that are autonomous and offer degrees. The US, with a quarter of India's population has as many as 3264 universities. India must increase the number of degree conferring colleges and make them autonomous.

Nurturing Global Competetiveness among Students

In the context of globalization and liberalization , students should be able to search for job opportunities not only locally but also globally. It is therefore essential to cultivate among them skills, competencies and values that are of acceptable quality and standards at national and international levels. The institution should identify global competencies and inter-cultural values and develop these in their students through courses and activities. Partnering with overseas and Indian education institutions may help in training and developing students. For becoming internationally competitive, it will be essential to educate students to be innovative, creative and

entrepreneurial. Partnership and collaboration with industries may help in linking with the world of work, which is fast changing under the impact of globalization and modern technologies.

In his lecture, on *"Sustaining Quality in Flexible Higher Education"*, delivered at the University of Madras, on 1st October, 2004, Arun Nigavekar said, "However one may rightly ask whether we have a flexible system of higher education as yet and, therefore, logically question the relevance of talking about sustaining quality within it. The concept of flexible higher education is a twenty first century gift to higher education. It is given on the condition that we do not miss out on the race that we have to run with others who are better equipped than us. We will therefore, have to go in a fast track mode not only for the creation of a process for making judgement on quality in the flexible system of higher education that we should pave the way for ushering in, but also for creating an environment for sustenance of quality within it. Thus sustaining of quality in flexible higher education, in a way, becomes a continuous process. It is very much there in our exercises in higher education."

ICT Revolution : Borderless Education

Higher education has undergone a rapid change in the last decade of the 20th century. This is mainly because the convergence of information, communication and broadcasting technologies has led to an explosion of information and knowledge. The geographical boundaries have now disappeared. Education has now become borderless: one can learn anywhere, in any place, any time. This has added a new dimension to higher education. The twenty-first century has brought with it new dimensions for developing as well as emerging nations. The developed countries have already made enormous investments for creating and spreading knowledge. Augumented facility for flow of information and for well-developed educational structures have given them greater

Advantages

Equity and Access to Information

There is a demand for equity in access to information. Creation of information flow network would bring equity in access to information. Of course, this would need a higher volume of investments.

It is not only the access to education that is important but, in addition, it is the quality of education that has become the prime focus in the 21st century. And every student expects to receive "good" education wherever he or she is physically situated. This leads us to discuss the nexus between education and economy ,an ability to understand and work with people and problems. These are the skills that business leaders most want.

Why is Assessment and Accredition of an Institute Necessary

The awareness of the fact that 'knowledge is a key resource to global competitiveness' and the establishment of the NAAC by the UGC in 1994 has motivated various Higher Educational Institutions in the North East and in other parts of the country to go for assessment and accreditation. Quality refers to the attainment of standards of resourcing and provision in the higher education sector, and the achievements or outputs of an institution or system. Quality embraces all the major functions of higher education : teaching and academic programs, research and scholarship, staffing, students, infrastructure and the academic environment. The concept of accountability is closely allied with quality— no system of higher education can fulfill its mission unless it demands the highest quality of itself. Continuous and permanent assessment is necessary to reach this objective. Simultaneously, it is to be ensured that great care is exercised when making quality assessments, as it involves matters of judgment, academic values and cultural understanding.

The issue of quality cannot be dissociated from the quest for excellence and the need to establish evaluation criteria. In order to assess local institutions with a global perspective, reviewing institutions against international quality benchmarks should gain precedence. Such criteria must however be adapted to take into account the diversity of situations, and the academic culture in our own country. The need to develop a culture of evaluation is inseparable from the concept of quality, itself intimately bound up with the successful democratization of the higher education system. Standard quality assessment practice involves the comparison between observed and intended outcomes of (programs and institutions) and continuous analysis of the sources of dysfunction. Both internal self evaluation and external review are vital components of any well-developed quality assurance system.

Assessment and evaluation are intended as means to demonstrate institutional effectiveness, foster institutional improvement, and demonstrate accountability. Quality should be a continuous and ongoing process. It should not be considered as a one time activity for accreditation alone. Because of the market-driven approach, in all spheres of life, the issue of quality in education has become very important to everyone and as such rankings of educational institutions have become important. Quality is often considered to be a standard or norm with which to compare two similar things in order to assess the worth of the thing compared. It is a 'bench-mark' arrived at after reckoning the best features of the things compared.

Quality is context and need-specific. Rural institutions may require a set of skills which may not be indispensable for urban institutions. Similarly teaching may be considered more important in an undergraduate college and research may take precedence over teaching in a university. Identical bench-marks may not be compatible for rating performers in context diversity. This does not mean that the degree of excellence in performance in different contexts can be different. For instance, a student of agriculture interested in researching into wheat

cropping needs a set of skills and competencies which are not the same in the case of a researcher in paddy cropping. Nevertheless the degree of efficiency they manifest in sustaining and improving the quality of the product as well as the impact of the outcome cannot differ for purposes of standardising performance for judgement.

The process of economic growth, growing incomes and the desire for learning has lead to a phenomenal growth in the number of both colleges and universities. Today in India, we have about three hundred (300) universities and more than 16885colleges catering to the needs of some 2 crore students. The programme of mass education and quantitative growth of institutions of higher learning have hit hard the quality of higher education. The Education Policy of 1985-86 voiced this alarm and as a sequel to that the UGC established the National Assessment and Accreditation Council in 1994 which was mandated to assess and accreditate the colleges and universities in the country. Quality assurance processes helps to enhance the quality of higher education at the national, regional or international. Assessment by NAAC is voluntary. Since the inception of the Council some 140 universities and 3492 colleges (April, 2007) have offered for assessment. (So far as the colleges are concerned this is slightly more than 20% and the possibility of completing the task in the next 10 years seems quite impossible.)

The initial assessment is valid for 5 years and as the things stand today some of the colleges are already due for re-assessment and with the present pace this also seems difficult.

NAAC has significantly contributed to the growth and governance of educational institutions during the last fourteen years. It has amply stressed the need for imparting quality education. Quality assurance is an evolving mechanism throughout the world. Quality assurance is to be done by fine tuning the experience of discovering our strengths and sustained improvement by eradicating weaknesses. Our strength lies in our heritage, talent and our well-acknowledged research work. Evolving indicators of quality to facilitate academic mobility is

one of the most important regional and international dimensions of quality assurance.

Quality Assurance is gaining substantial impetus all over the world, which is at different levels of maturity and capacity, in various countries. There is an overall agreement for the necessity of effective and efficient quality assurance mechanism in higher education institutes. Quality assurance is the responsibility of everyone in an educational institution, though the management at the top decides on the policies and priorities. Assuring quality should be a continuous and ongoing process. Assessment is the performance evaluation of the institution and/or its units, based on certain established criteria.

In this 'changing world' , factors such as the growth in student numbers, new student groups, global pressures of regionalization and internationalization, mobility of students, pressures on resources, technology-based and blended learning, tension between research and teaching, increased diversity of higher education institutions, affect the way in which quality is defined and in which quality assurance processes are conducted.

Quality is often thought of with western models in mind and we tend to replicate them without critically assessing their suitability to the localized and diverse contexts. In the name of quality, for instance, we shut out many—perhaps, equally competent, and even better men and women other than those who make it to professional and other courses of study—by applying the invariant norm of scores obtained at one final terminal examination. It is not the fault of the bulk of students who are denied admission since they failed to qualify against odds— mainly ,absence of infrastructure,competent learning assistance and counselling. Such odds do not prevail in developed economies where quality may be judged in the way it is done without possibility of error. The point emphasised here is that bench-marking for quality assessment should take into account context-specific handicaps in developing economies. The handicaps themselves must be removed before universalizing standards of quality. However, quality should never be compromised.

Quality in higher education is a holistic concept. Thanks t NAAC and the for the awakening it has brought about amon more than a thousand higher institutions of learning in ou country which have reset their goals, diversified curricula an improved methods of teaching and learning after the first roun of institutional assessments made.

There has been an extensive revision of curricula whic has resulted in a wide range of core, elective and vocationa options now made available to learners. Institutional assessmen has worked. The result has been the need for maimtainin quality with values of self-assessment and self-governance i higher education. ❐

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GEOGRAPHICAL BOUNDARY OF KAMRUP — A GLIMPSE

Dr. Dipak Barman*

We are attempting to project the geographical, historical and ethnicity angle of Kamrup. This is our area of study.

Whenever the word 'Kamrup' comes to our mind, we tend to remember the ancient Kamrup. This Kamrup is mentioned as Pragjyotish in our age-old epic Ramayana and Mahabharata. In this regard Sir Edward Gait was of the opinion as follows—

> *In the Hindu epics and in Pauranik and Tantrik literature there are numerous references to ancient Assam, which is known as Pragjyotisha in the Mahābhārat and as Kāmrūpa in Purāns and Tantras.*[1]

The geographical expansion of Pragjyotisha or for that matter Kamrup has been mentioned in Kalika Purana as down under.

> *বহুৰোকা নাম নদী কৰতোৱা প্ৰদক্ষিণে।*
> *উত্তৰশ্ৰাৱণী চাস্তে তৎপূৰ্ব্বং কামৰূপকম।*[2]

Wherever Uttar Shravani in the name of Bahuroka has been flowing around the land mass is called Kamrup.

According to Yogini Tantra to the west up to Kortowa and Dikrai, to north Kanjagiri (Kanchanjangha), to the east pilgrim centre Dikkhu river and to the south the meeting point of Brahmaputra and Lakhya rivers was known as Kamrup. This has been mentioned in all religions scriptures. It was triangular width was thirty hundred yoyana.

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করতোয়াং সমাশ্রিত্য যাবদ্দিক্করবাসিনীং।
উত্তরস্যাং কঞ্জগিরিঃ করতোয়াতু পশ্চিমে।।
তীর্থশ্রেষ্ঠা দিক্ষুনদী পূর্ব্বস্যাং গিরিকন্যকে।
দক্ষিণে ব্রহ্মপুত্রস্য লাক্ষায়াঃ সংগমাবধি।।
কামরূপ ইতিখ্যাতঃ সর্বশাস্ত্রেষু নিশ্চিতঃ।।.....
ত্রিংশদ্‌যোজন বিস্তীর্ণং দীর্ঘেণ শতযোজনং।
কামরূপং বিজানীহি ত্রিকোণাকারমুত্তমং।।[3]

As mentioned in Yogini Tantra the expanded Kamrup ha been quoted by Sir Edward Gait as under.

According to the same work the country was divided into four portions, viz, Kampith from the Karatoya to the Sankosh, Ratnapith from the Sankosh to the Rupahi, Suvarnapith from the Rupahi to the Bharali, and Soumarpith from the Bharali to the Dikrang.[4]

The writings of Chinese traveller Hu En Chang give u ideas about the geographical boundaries of Kamrup. That apar it also described shape and size of its people, their educatio and their different vocations. Around 643 A.D. the Chines traveller Hu En Chang came to Kamrup during the reign o Kumar Bhaskar Barman. In this travelogue named Si-yu-ki h mentioned an invaluable note about Kamrup during hi extensive sojourn of India. He wrote that adding the four side of the boundary of Kamrup comes to 1700 miles and the are of its capital Pragjyotishpur was 6 miles. It had law land an very fertile and regularly used for cultivation. The people o Kamrup were fond of jackfruit and coconut cultivation and it yield was encouraging. There was arrangement of drainag from the rivers for irrigation around the city of Guwahati. Th climate is healthy. There is no tortuous summer nor chillin winter. The behaviour of its people is simple and sacred. The are short-sized and their complexion is brown. Their languag is little different from rest of India. Their power o memorization is very strong and interested in acquirin

education. They are worshipers of Gods and Goddess and there are numerous temples of these Gods and Goddess in the state. The influence of Buddhism is almost nil here. Although there are very few Buddhist in the state, they worship secretly. Towards the eastern side of Kamrup elephants are available in plenty. Primarily elephants were used in war.

The Chinese traveller wrote about king Bhaskar Barman as very learned and his subjects were inspired by the king and devoted to learning. Moreover, many able bodied persons used to come to Kamrup for education and for different vocations. In spite of his note being a Buddhist, the king had ample regard for the Buddhist monks.[5]

As described in Purana the Kamakhya Temple was established in the middle of the state. The extended area around this temple was hundred yoyana. At a later stage 'Yogini Tantra' was written which describes the boundary of Kamrup as Dikhou river to the east, Kortowa river to the west, Kanjagiri mountain to the north and the meeting point of Laksha and Brahmaputra river to the south. It is obvious from these facts that even at later stage not only Kamrup extended to whole of Assam Valley but also it included east Bengal, a part of Bhutan, Khasi and Garo hills and the northern part of Sylhet. Now as it seems, it is crystal clear that the ancient Kamrup or for that mater Pragjyotish was much bigger than many kingdoms mentioned in Mahabharata and than sixteen Mahajanapadas during Gautam Buddha. In support of this disclosures a quote by Kanaklal Barua is very relevant.

> *According to the Puranic accounts the temple of Kāmākshyā was in the centre of the kingdom which extended in all directions for one hundred yojanas. According to the Yogini Tantra, which is clearly a much later work, Kāmarūpa was bounded on the east by the Dikhoo river, on the west by the Karatoyā river, on the north by the mountain Kunjagiri and on*

the South by the confluence of the Lākshyā and the Brahmaputra. It would appear from these accounts also that, even at a later period, the Kingdom included not only the whole of the Assam Valley but also parts of northern and eastern Bengal, part of Bhutan, the Khasi and Garo Hills and the northern Portion of the disctrict of Sylhet. In any case it is clear that Pragjyotisha or ancient Kāmarūpa was a much larger Kingdom than most of the other Kingdoms mentioned in the Mahābharata and most of the sixteen Mahājanapadas existing during the time of Gautama Buddha.[6]

In course of time the geographical boundaries of Kamrup have changed. In an article titled 'Asom' Lakshminath Bezbarua wrote this—

দ্বাদশ শতিকাৰ মাজৰপৰা পঞ্চদশ শতিকাৰ মাজলৈকে পঞ্চম যুগ। এই যুগত বিশাল কামৰূপ ৰাজ্য ভাগি-ছিগি ডোখৰ ডোখৰ হৈ কেইবাখনো সৰু সৰু ৰাজ্যত পৰিণত হ'ল আৰু পুৰণি প্ৰবল কামৰূপৰ গৌৰৱ সূৰ্য্য চিৰকাললৈ অস্ত গ'ল।[7]

In due course the name of Kamrup becomes Asom. During the British rule Asom was divided into some districts. In the context of creation of Brahmaputra Valley the historian Sir Edward Gait wrote :

At this period the British portion of the valley was divided into four Districts viz., Goalpara, Kamrup, Darrang, including Bishnath, and Nowgong.[8]

The boundaries of the then Kamrup was Bhutan to the north, mountain range of Meghalaya to the south, Nowgaon and Darrang district to the east and Goalpara district to the west. Its area is 9863 square K. M. and its is statuted in 25" 43' north latitude and 25" 50' north latitude and 90" 39' east longitude and 92"11' east longitude.[9]

The river Brahmaputra has been flowing from eastern to western direction through the district of Kamrup. This river has divided the district into two parts, such as, Northern and Southern. The prime rivers of northern Kamrup such as, Barnadi, Puthimari, Baralia, Ghagra, Pagladiya, Tihu, Kaldia, Pahumara, Palla, Beki and Manas have been flowing from east to west.[10] In addition to these there are small rivers like Buhradia, Nakhanda, Karekhowa etc. in northern part of the district. The important rivers in the southern part of the district are Digaru, Kulchi and Boko.[11] The important fishing habitat in the district are Diparbil, Satdala, Kapla, Chanddubi and Borbila.

Out of the total area of Kamrup district 2332 square K.M. is forest area and it is 23.68% of the district.[12]

Population : The average population of Kamrup district every ten years :

Sl. No.	Year	Total Population
1	1872	561,681
2	1881	644,960
3	1891	634,249
4	1901	590,010
5	1911	669,648
6	1921	762,671
7	1931	976,746
8	1941	1,264,200
9	1951	1,490,392
10	1961	2,062,572
11	1971	2,858,183
12	1981	

The census has not taken place in 1981.[13] In 1983 Kamrup was divided into three districts namely—Kamrup, Nalbari and Barpeta. The population of these three districts are given below :

Sl. No.	Year	Total Population
1	1991	Kamrup—2000071
2	1991	Nalbari—1016390
3	1991	Barpeta—1385657
4	2001	Kamrup—2522324
5	2001	Nalbari—1148824
6	2001	Barpeta—1647201 [14]

Education

The year 1991 onwards the number of educated people are as follows :

Year	Total Population	Number of Educated Person
1991	Kamrup—2000071	1074975
1991	Nalbari—1016390	463162
1991	Barpeta—1385657	471886
2001	Kamrup—2522324	1608191
2001	Nalbari—1148824	567925
2001	Barpeta—1647201	752682[14]

Vocation :

The primary vocation of the people of Kamrup is agriculture. Although to a certain extent the benefit of irrigation and other modern methods have reached the agriculturists but some have still been cultivating with age-old traditional methods. The agricultural products include paddy, mustard

jute, vegetables, arecannut and pan leaves, coconut etc. Some people engage themselves in various business and contract works. There are also potters, goldsmith, bell-metalist. There are also old businessmen dealing with fish, wood, cane and bamboo.

Presently various small and large-scale industries have come up in this area of the state. Large-scale industries like oil-refinery, plastic industry and iron-based industries have been established. In addition to these various products like soap, polystar fibre, dresses made out of pat and muga, mustard-oil, bell-metal utensile, ivory products, cane and bamboo based products are being produced in the state.

Conclusion

The name of Pragjyotisha as mentioned in both the epic Ramayana and Mahabharat and the word Kamrup which portrayed a very large land mass has been torn into pieces in course of time. The present Kamrup in merely a district having contracted boundaries. The people living during the time early Kamrup were not the same people living in today's Kamrup. They were known as Assamese people during those ancient times. The patriotism was in their blood. The sources available in history clearly reflects this mind-set. The description of Man-Moran war in history gives us a distinct knowledge about the patriotism of Assamese soldiers. To add to this their devotion to divine and the rituals, folk lore, folk literature were so many praiseworthy traits were the noted characteristics of Assamese people. The Ramayana written by Madhab Kandali which was the earliest epic written in regional language in whole of India has elaborated these mind-set of Assamese people of ancient Kamrup. There is a vast gap between today's culture of Assamese people and the culture of epic era. The culture as we look to the past was original whereas the culture we witness today is an ominous mixture of different traits and taste. The

globalisation has its positive impact on our culture and driven our youngster to a so-called liberal western culture. In short literature, culture, fine arts have become the victim of transition between ages. The work of art is surrounded by the darkness of non-conviction.

The social values have been non-entity. Even to live a life of security is in the grip of uncertainty. The born-aristocrate Assamese people are yet to realise the dignity of labour. They have become labour-alergic. The whole of Assamese tribe is in a great crisis of losing their identity in respect of language, culture and what not. The ethnic factor has come to the surface and divided the once glorious Assamese society into number of caste, clan, tribe, community etc. At this hour of crises there is no Sankardev in our midst to save these people from destruction.

Could we just dream of day when artists, writers treat this sorry state of affairs and depict them fearfully in their arts and literature their target should necessity be to altert the mind set of Assamese people and if they succeed the new sun in the horizon is not far off. Let also there be an attempt to revive the old value and culture which once identified the existence of Assamese people. This is the only attempt, as I feel, can restore the image of glorious past of Assam and its people. □

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APPLICATION OF STATISTICS IN RESEARCH WORK

Ms Runjun Phookun*

Introduction

Statistics refers to numerical data, i.e., facts and figures pertaining to any investigation. In wider sense it refers to the subject or discipline Statistics which includes the theory and techniques used for collecting, presenting, analysis and drawing inferences from the numerical data. According to Croxton and Cowden – "Statistics may be defined as a science of collection, presentation, analysis and interpretation of numerical data." This definition seems to be the best as it is simple and clearly states the four stages in a statistical investigation. So, Statistics is not a subfield of Mathematics but it is a distinct field that uses mathematics.

Throughout the ages people have been using Statistics in some form or the other. The modern study of Statistics started in the early 20th century. At this time a young chemist and mathematician named William Gosset worked for the Guiness brewery in Dublin, Ireland. There he created new statistical techniques to help brew consistently good beer.

Statistics is now finding wide application in almost all sciences – social as well as physical – such as Biology, Medical Science, Engineering, Astronomy, Education, Economics, Business Management etc. Most areas of study use some statistics either to explain their results or to predict future outcomes. Statistical data and statistical methods are

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indispensable in research work. For instance experiment about crop yields depending on different types of fertilizers and on different types of soil etc. are studied with the help of Statistics to devise ways of increasing the yield. In the field of medicine and health programme, statistical methods are used to know the effectiveness of new medicines and methods of treatment. Market researches extensively depend upon statistical methods in drawing conclusions. One can say with confidence that there can be hardly any research finding without Statistics

How to apply Statistics in research work ?

In applying Statistics to a scientific, industrial or social problem or research, one begins with a population or universe to be studied. This might be a population of people in a country or of goods manufactured by a particular factory during a given period.

Methods of collecting data

Information on a population can be collected in two ways – **Census method** (Complete enumeration) or **Sample method.** In census method data are collected from each and every item of the population under study. In sample method, rather than compiling data about an entire population one usually studies a representative part of the population. If the sample is a representative one then inferences and conclusions made from the sample can be extended to the population as a whole. In our every day life we have been using sampling theory without realizing about it. For e.g., while cooking rice we examine two or three grains of rice to know whether the rice is properly cooked or not. Similarly a person while purchasing a sack of potatoes does not inspect each and every potato but inspects a few before buying the sack.

Types of data

Data can be classified into different types depending upon the source. The source of data may be **primary** or **secondary**.

The data, which are collected by the investigator or on his behalf for the first time for a specific purpose, is called *primary data*. When information is taken from available records or published materials or data already available it is termed as *secondary data*.

Sampling methods

Usually the census method is not adopted for collection of data as it is not practicable. Some commonly known and frequently used types of sampling are **Simple random sampling** and **Stratified random sampling**.

Simple random sampling is the technique in which a sample is so drawn that each and every unit of the population has an equal and independent chance of being included in the sample.

Stratified random sampling is used when the population is heterogeneous with respect to the characteristic under study. In stratified random sampling the population is stratified or divided into different groups or strata according to some relevant characteristics. Each stratum is homogeneous and a sample is selected from each stratum at random. Stratified random sampling ensures greater accuracy than simple random sampling.

Some basic definitions, which need to be known before drawing statistical inferences, are :

(i) Parameter

(ii) Statistic

(iii) Sampling distribution and

(iv) Standard error.

Parameter & Statistic : The word parameter is used to indicate various statistical measures like mean, standard deviation, correlation etc. in the population or universe whereas statistic refers to the statistical measures relating to the sample

The parameter being a population value is a constant but the statistic varies from sample to sample. In practice parameter value are not known and the estimates based on the sample values i.e., statistic are usually used.

Sampling distribution : If a number of independent random samples of a definite size are selected from a given population and some statistic, like mean, standard deviation etc. are calculated from each sample, a series of values will be obtained. These values obtained from different samples can be put in the form of a frequency distribution, which is called the *sampling distribution of the statistic.*

Standard error : The standard deviation of the sampling distribution of a statistic is known as its *standard error*, abbreviated as S.E. It plays a very important role in testing of hypothesis because the test statistic for the statistic 't' is framed as follows –

$$Z = \frac{t - E(t)}{S.E.(t)}$$ which tends to normal distribution for large sample.

Statistical inference

The pattern in the data may be modeled in a way that accounts for randomness and uncertainty in the observations, and then used to draw inferences about the population being studied. This is called *statistical inference.*

Statistical inference is divided into two heads –

(i) Estimation theory

(ii) Testing of hypothesis.

(i) **Estimation theory :** Estimation of population parameters like mean, variance etc. from the corresponding sample statistic is one of the very important problems of statistical inference.

(ii) **Testing of hypothesis :** Hypothesis is an assumption which may or may not be true about a population parameter which is tested on the basis of the sample.

Laying down of hypothesis

To verify any assumption, which is based on sample study, data is collected and the difference between the sample value and the population value is estimated. If there is no difference or if the difference is very small then the hypothesized value is correct. Generally two hypotheses must be constructed, and if one hypothesis is correct, the other one is rejected. The two hypotheses are –

(i) Null hypothesis and

(ii) Alternative hypothesis

(i) **Null hypothesis :** The hypothesis reveals that the value of sample and the value of population under study do not show any difference. It means that the true difference between the mean of sample and the mean of population is nil. The least difference found is unimportant or due to sampling error. Such hypothesis which usually denotes hypothesis of no difference is called *null hypothesis* and is denoted by H_0. According to Prof. R.A. Fisher null hypothesis is the hypothesis which is tested for possible rejection under the assumption that it is true. For e.g., the average height of students of a college is 155 cm, then null hypothesis is H_0: $\mu = 155$, where μ = population mean.

(ii) **Alternative hypothesis :** Any hypothesis which is complementary to null hypothesis is called an *alternative hypothesis* and is usually denoted by H_1. Thus rejection of null hypothesis (H_0) leads to acceptance of alternative hypothesis (H_1). For e.g., if the average height of students of a college is 155 cm then alternative hypothesis is

H_1: μ ? 155 cm (gives two tailed test)

Or H_1: $\mu > 155$ cm (gives one tailed test)

H_1: $\mu < 155$ cm (gives one tailed test)

When two hypotheses are set up, the acceptance or rejection of a null hypothesis is based on a sample study, which leads to any one of the two possible wrong conclusions i.e.

(i) Rejecting H_0, when H_0 is true is Type I error and is denoted by α.

(ii) Accepting H_0, when H_1 is true is Type II error and is denoted by β.

This can be expressed in the following table :

	Decision from sample	
	Accept H_0	Reject H_0
H_0 true	Correct	Wrong Type I error (α)
H_0 false (H_1 true)	Wrong Type II error (β)	Correct

To come to a decision whether to accept or reject the null hypothesis it is necessary to know about Level of significance, Critical region and Critical value.

Level of significance

In any study, committing an error of Type I is a more serious offence than committing a Type II error. Hence the permissible probability of committing Type I error is fixed at α (normally 5% or 1%) and the probability of Type II error is minimized accordingly. This pre-specified probability of Type I error i.e., α is called the *level of significance of the test.*

Critical region

The whole sample space is divided into two regions – Acceptance region and Rejection region. A region in the sample space which amounts to rejection of null hypothesis (H_0) is termed as *critical region* or *region of rejection.*

Critical value or significant value :

The value of test statistic which separates the critical or rejection region and the acceptance region is called the critical value or significant value.

The test statistic under the null hypothesis is given by –

$$Z = \frac{t - E(t)}{S.E.(t)}$$

Making a decision

Finally we come to a conclusion either to accept or reject the null hypothesis. The decision is on the basis of computed value of test statistic (Z) whether it lies in the acceptance region or rejection region. If the computed value of the test statistic is less than the critical value, the computed value of the test statistic falls in the acceptance region and the null hypothesis is accepted. If the computed value of the test statistic is greater than the critical value, the computed value of the statistic falls in the rejection region and the null hypothesis is rejected.

In other words, the computed value of Z is compared with the significant value (tabulated value) Z_α at the given level of significance 'α'.

If $|Z| < Z_\alpha$ i.e., if the calculated value of Z (in modulus value) is less than Z_α we say it is not significant. By this it is meant that the difference t – E(t) is just due to fluctuations of sampling and the sample data do not provide sufficient evidence against the null hypothesis, which may therefore be accepted.

If $|Z| > Z_\alpha$, i.e., the computed value of test statistic is greater than the critical or significant value, then we say it is significant and the null hypothesis is rejected at the level of significance a.

Test of significance for large and small samples

If sample size is greater than 30 i.e., if $n > 30$, then these samples may be regarded as large samples. If the sample size is less than 30, i.e., if $n < 30$, then these samples may be regarded as small samples.

There is difference between large and small samples in using the test of significance, because the assumptions we make for the two samples are not the same. The assumptions made for large samples are –

1. The random sampling distribution of statistics is approximately normal.
2. Sampling values are sufficiently close to the population value and can be used for the calculation of standard error of estimate.

As a rule, the methods and the theory of small samples are applicable to large samples, but the methods and the theory of large samples are not applicable to small samples.

For large samples i.e., $n > 30$, almost all the distributions e.g., Binomial, Poisson, Negative Binomial etc. are very closely approximated by Normal distribution. Thus in this case we apply *Normal test.*

For small samples i.e., $n < 30$, we use Student's t - test

Statistical techniques

Some well known statistical tests and procedures for research observations are –

- Measures of Central Tendency and Measures of Dispersion
- Student's t – test
- Chi-square test
- Analysis of variance
- Correlation
- Pearson's product-moment correlation coefficient
- Spearman's Rank correlation coefficient
- Regression analysis
- Factor analysis.

Conclusion

Different statistics are thrown at us every day. Some such as those given during T.V. sporting events are just fun facts. Others can affect how we live our lives. To make the right decisions in our lives we need to understand what the statistics are telling us. Statistics plays a very important role in research work as we have to deal with collection, presentation, analysis and interpretation of data. But if statistics is not properly used or misused, can produce serious errors. These errors may affect social policy, medical practice and reliability of structures such as bridges and nuclear power plants.

Thus it is important for us to study and understand statistics because we encounter the use of statistics in our everyday life and in most of our areas of study. So, in order to make intelligent choices we have to be able to interpret statistical results. □

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PROGRESS, PROBLEMS AND PROSPECTS OF URBAN CO-OPERATIVE BANKS —A CASE STUDY OF THE CO-OPERATIVE CITY BANK LTD.

Pallavi Kakati*

Introduction

Co-operative Banks are organised and managed on the principle of co-operation, self-help and mutual help. They function with the rule of "one member, one vote", function on "no profit no loss" basis. Co-operative bank as a principle, do not pursue the goal of profit maximization.

Co-operative banks perform all the main banking functions of deposit mobilization, supply of credit and provision of remittance facilities. Co-operative banks do banking business mainly in the agricultural and rural sector. However, UCBs, State Co-operative Banks (SCBs) and Central Co operative Banks (CCBs) operate in semi urban, urban and metropolitan areas. The urban and non-agricultural business of these banks has grown over the years. The co-operative banks demonstrate a shift from the rural to the urban whereas the commercial banks, from urban to rural.

In the organised sector of the Indian Money Market, co-operative and commercial banks are parallel financial institutions. Both render almost identical banking functions of deposit mobilization, provision of remittance facilities and advancing of loans. Nevertheless, both institutions are distinct in nature, scope and operations.

Co-operative Credit Societies established in the urban areas are referred as Urban Co-operative Banks (UCBs). In

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most states however, no precise definition of an urban co-operative bank is statutorily followed. The RBI calls the Urban Co-operative Banks as the Primary Co-operative Banks (PCBs). The first Urban Co-operative Bank in India was established in Baroda in February 1889. At present there are seven (7) UCBs in Assam out of which 4 concentrates in Guwahati.

The UCBs play an important role in meeting the growing credit needs of urban and semi urban areas. They constitute an important element in the banking structure. UCBs mobilize savings from the middle and lower income groups and purvey credit to small borrowers, including weaker sections of the society. The urban co-operative banking sector display a high degree of heterogeneity in terms of deposits/asset base, areas of operation and nature of business. In view of this importance, it is imperative that the sector emerges as a sound and healthy network of jointly owned democratically controlled and professionally managed institutions.

Unfortunately, all is not well with these Urban Co-operative Banks. There has been a mushrooming growth of the number of banks and also the incidence of failure. Several UCBs have gone into liquidation, straining a large number of depositors. UCBs are generally blessed with committed clientele as long as their financial needs are met. The moment they get bigger, they are forced to scout for a bigger lender. The loss of UCBs nurtured accounts thus becomes a readymade gain for another big bank in the public or private sector. Canvassing for new customers becomes a challenging proposition.

Technology to the extent of branch level computerization is appreciated by UCBs but is not enough to take on new challenges. The vendors more often than not get frustrated with the approval process and the result is going in for small vendors with limited functionality Keeping in view the weak financial position of the UCBs, the study aims to suggest a series of measures directed towards strengthening of the UCBs.

The Co-operative City bank Ltd.

The Co-operative City Bank Ltd. (CCBL) has had a laborious yet non-stop journey since 1981. The bank was born on 4-11-1981. The RBI gave the license for the bank on 11th September 1981. Prior to that, the registration of the bank was completed on 23rd September 1980 with the Registrar of Co-operative Societies, Assam.

At present, the bank has its Head Office at UN Bezbaruah Road, Silpukhuri with four (4) branches at Silpukhuri, Ulubari, Noonmati and Ganeshguri.

Although the bank has four branches, there has been a demand from a section of the shareholders to open new branches at strategic locations.

Methodology Adopted

The study is based on the data collected from primary as well as secondary sources to accomplish the purpose of various objectives of the study.

The primary data have been collected from the executives of The Co-operative City Bank Ltd., through personal interviews. The secondary data are collected from the Annual Reports, other published reports, journals, publications of RBI, Action Plans of branches etc. Various Committee Reports and recommendations will also be the basis for secondary collections. Moreover, a direct field survey will be done and the opinion of the Bank's customers will be collected. For this purpose, a questionnaire will be prepared for collecting relevant data and information from them. The questionnaire consists of two parts- Part I consisting of questions sought for the background information of the respondents under study and Part II consisting of questions purposed to have an idea on the attitude of the respondents, their values and beliefs towards the bank and its functioning etc. After collecting all the relevant facts and figures, an analysis was made to arrive at the objectives for which the study is undertaken.

The **limitations** of the study are as follows :

Since the data are obtained from more than one source, there may be some discrepancies between one source and another about the same variable. There may be slight discrepancy between the sum of constituent items and the totals because of rounding off. During the conduct of field survey, some members of the respondents refused to give information out of fear of creating severe ties with the Bank. Some of the respondents had the tendency to conceal their information, particularly regarding their borrowing part for their false prestige and pride.

The study concentrates only on the analysis of quantitative financial data. The qualitative aspects of progress of banking in India have not been analysed. The emerging trends in the qualitative aspects of banking as customer service, job satisfaction, reduction in inequalities and regional disparities and moral of the bank employees and the general public etc. have not been taken into consideration.

In spite of the above-mentioned limitations, efforts have been made to minimize the errors in the study. It is highly beyond the capacity of an individual to make a thorough investigation covering hundred percent area. However, a number of items at random should possess the characteristics of a large group. 50 questionnaires were canvassed and the information so obtained has been presented.

The respondents surveyed were 50 in number. Most of them belonged to the Guwahati Branch, it being the largest branch among the four branches. About 60% of the beneficiaries surveyed were male members, mostly from the age group of 41-50 years. The rest were females mostly from the age group of 51-60 years. There were no respondents either male or female from the age group of 61 years and above. This indicates lesser number of senior citizens as beneficiaries of the bank.

THE ANALYSIS

Table : 1

STATEMENT SHOWING DETAILS OF 50 SAMPLE BENEFICIARIES IN STUDY

PARTICULARS	NO. OF RE-SPONDENTS	PERCENT-AGE
A) Source of Income :		
Govt. employee	14	28
Private sector employee	06	12
Self employed Businessman	28	56
Agricultural Activist	—	—
Professional (Medicine)	02	04
	50	**100**
B) Range of Income :		
Less than Rs. 24,000 pa	—	—
Rs. 24,001 to Rs. 60,000 pa	01	02
Rs. 60,001 to Rs. 1,20,000 pa	06	12
Rs. 1,20,001 to Rs. 2,40,000 pa	28	56
Rs. 2,40,000 pa and above	15	30
	50	**100**
C) No. of Family Members :		
2 members	04	08
3 members	15	30
4 members	27	54
5 and above members	04	08
	50	**100**

PARTICULARS	NO. OF RE-SPONDENTS	PERCENTAGE
D) Has been a customer since :		
Less than a year	03	06
1 to 3 years	10	20
3 to 7 years	23	46
7 to 10 years	12	24
10 years and above	02	04
	50	**100**
E) Scheme of obtaining Loan		
Personal Loan	07	14
Vehicle Loan	06	12
Business Loan (Cash Credit)	24	48
Home Loan	04	08
Furniture Loan	05	10
Agricultural Allied Loan	—	—
Others	—	—
No Loan	04	08
	50	**100**

Source : Self computed data.

The study reveals that mostly the customers of the bank are from the business community. Of the sample surveyed, 56% belonged to the self-employed business group. The bank being situated in the urban area, there were no takers from the agricultural community. There were less respondents from the private sector may be because they are mainly influenced by the flexible schemes introduced by the private sector banks. The government employees are mainly from the older age group who liked to traditionally stick to more conventional banks such as The Co-operative City Bank Ltd.

Majority of the respondents surveyed were from the group whose monthly income ranged from Rs. 10,000 to Rs. 20,000 pm. Another chunk of the sample belonged to the higher income group having a monthly income of more than Rs.

20,000. This tells us that people from the middle and high-income groups are aware of the benefits of savings. The study also brings to light the general tendency of the young generation to invest in more profitable investments instead of following the traditional method of saving in a bank. The table gives a general trend that the highly educated class of the society likes to stick to very small families with one or two members. On the other hand, families with large number of members were also found in the survey. These were mainly joint families with extended members. The survey reveals that most of the respondents joined the banks as customers in the last 3 to 7 years. On the part of the bank, it was successful in procuring more customers since the last few years due to marketing and advertisement. Of the 50 respondents, 46 (92%) were borrowers of the bank. Table 2 highlights the maximum takers of loans as the business class, i.e. maximum loans were cash credits. The other respondents were evenly distributed as personal, vehicle, furniture or home borrowers. The survey has also given a fact that there are certain respondents who were hesitant to disclose the true facts regarding their loans. The actual number of loans availed by them remained concealed maybe in order to gain future benefit of availing further loans.

TABLE 2
STATEMENT SHOWING DETAILS OF 46 SAMPLE BORROWERS

PARTICULARS	NO. OF RESPONDENTS	PERCENT-AGE
A) Amount of Borrowing :		
Less than Rs. 50,000	04	8.70
Rs. 50,000 to Rs. 1 lac	08	17.39
Rs. 1 lac Rs. 3 lacs	31	67.39
Rs. 3 lacs to Rs. 5 lacs	02	4.35
Rs. 5 lacs and above	01	2.17
	46	**100**

PARTICULARS	NO. OF RESPONDENTS	PERCENTAGE
B) Term of Borrowing :		
1 Year	30	65.22
1-3 Years	06	13.04
3-5 Years	10	21.74
5 Years above	—	—
	46	**100**
C) Repayment of Loan :		
Prompt	37	80.43
Satisfactory	07	15.22
Irregular	02	4.35
Defaulter	—	—
	46	**100**

Nearly 92% of the samples were the borrowers of the bank, a majority having a loan of Rs. 1 to 3 lakhs. Most of them in this range included the business loans taken by the self-employed businessman. Relative to the number of respondents, there were hardly any takers of loans above 3 lakhs. The heavy loans mainly included the vehicle loans.

Regarding the term of the loan, all the business loans were given a period of one year for repayment. However, according to the characteristics of cash credit, the borrowers had the flexibility of renewing their credit every year. Some of the respondents also opted for a period of five years due to the heavy amount of borrowing. However, when enquired about their status on repayment of loan, more than 80% of the respondent considered themselves to be prompt in payment. All the salaries respondents declared themselves to be prompt in repayment. The borrowers with a satisfactory or irregular remark were from the business class. The reason for their

default was cited either as inadequacy of income or as higher family consumption.

Though the respondents claimed their loan repayment as satisfactory, from the Branch Managers point of view, the recovery of loans was not satisfactory. Factors responsible for poor recovery of loans were cited as

- Misutilisation of credit and
- Inability to maintain the assets by the borrowers.

In case of failure to pay the loan installments in certain months, there was the flexibility to pay it off together in the subsequent month. There are no queries from the bank management regarding the lapse of installment for 2-3 months at a stretch. However, after 3 to 4 months a telephonic reminder is given. At subsequent intervals, a written reminder is also given. It is however not considered an NPA till the maturity of the loan.

There is usually prompt sanctioning of the loans. However, there has been a delay in case of six respondents. The major cause of delay was due to the unnecessary queries by the bank officials. The queries were in the form of submission of different documents required for the loan. Also the fact that more documents and information are required for business loans could be established.

The bank requires around 50% to 60% as security against a loan. This mortgage can be in the form of insurance policies, fixed deposits, national savings certificates or other generally accepted securities. The bank usually tries to convince its customers to open fixed deposit account with their bank, which can be taken as a contribution towards the margin money or mortgage. The study reveals that more than 50% of the loans had been sufficient for the borrowers. However, for some of the respondents, the loan amount was not sufficient to meet their schemes. This was mainly in case of business loans. Among the

borrowers, the gross income of 22 (44%) respondents has increased. The loan procured by these respondents was under income generating schemes. i.e. the business loans. The proper utilization of the loans has led to an increase in the income of the borrowers.

TABLE 3

TABLE SHOWING THE DETAILS OF THE 50 BENEFICIARIES REGARDING THEIR OPINION ON THE BANK

PARTICULARS	NO. OF RESPONDENTS	PERCENTAGE
A) Opinion on services of the Bank :		
Excellent	02	04
Very Good	05	10
Good	31	62
Satisfactory	11	22
Poor	01	02
	50	**100**
B) Opinion regarding bank loans :		
Period of repayment to be extended	32	64
Loan should be adequate and timely	18	36
Procedure should be simplified	41	82
Others (Mortgage margin to be reduced)	02	04
	50	

PARTICULARS	NO. OF RESPONDENTS	100 PERCENTAGE
C) Facilities available with the bank:		
Locker facility	43	86
Loan facility	01	02
Others	—	—
Can't say	07	14
	50	**100**
D) Satisfied with the facilities	12	24
Dissatisfied with the facilities	38	76
	50	**100**
E) Period for clearing local cheques :		
2 days	33	66
More than 2 days	05	10
Can't say	12	24
	50	**100**
F) Period for clearing outstation cheque:		
15 days	07	14
More than 15 days	12	24
Can't say	31	62
	50	**100**

The beneficiary so concerned had problems regarding sanctioning of his loan. The services of the bank are otherwise prompt. The general tendency of a person queried is to give a general answer. Hence, maximum respondents rated the bank as good.

The respondents are generally aware of the facilities provided by the bank. The respondents are not satisfied with only locker facility. There is a great demand for ATMs. The borrowers surveyed, wanted flexibility regarding the loans given by the bank. Extension in the period of repayment with a lower EMI is in demand. The formal procedure followed by the bank for granting loans should be simplified..

It is quite an interesting fact that the respondents were not quite aware of the policies of the bank. The general trend rates the employees as being polite, efficient, helpful and friendly. The bad experience of a few respondents made a remark of their inefficiency. A pleasant atmosphere prevails within the vicinity of the bank where the customers do feel comfortable. The customers are extended co-operation to solve their problems. The bank officials hinted that opening of a few more branches is under process.

The suggestions of the customers include opening of more branches and a few ATMs. They are of the opinion that since the Branch Manager is not always available, a Public Relation Officer should be appointed like the State Bank of India so that the problems and queries of the customers can be addressed quickly.

Opinion Survey

An opinion survey was also conducted among the Branch Managers through a questionnaire.

On being asked whether the branch had been able to cover enough area in its vicinity, all the respondents replied in

affirmative. They are also of the opinion that the deposits and the advances over the last decade have definitely increased.

As for the loans, the bank properly identifies the borrowers. The prospective borrowers need to be customers of the bank with regular transactions. Moreover, their income source and installment paying capacity is identified.

Though the rate of recovery of loans is taken as satisfactory by the Branch Managers, a certain fraction of loan remains unrecovered. The factors mainly responsible for poor recovery of loan are taken as mystification of credit or the inability to maintain credit.

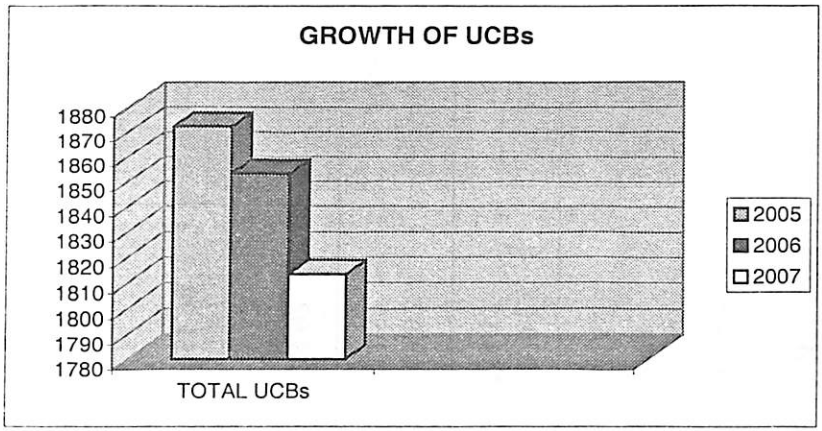
The methods adopted for recovery of loans are Direct Approach and the Bakijai Process. Direct Approach is where the Branch Managers go on a personal recovery drive.

Keeping in view the problem of growing NPA, the Department of Co-operation, Assam, has empowered bakijai officers with the powers of a certificate officer under Section 3(3) of the Bengal Public Demands Recovery (BPDR) Act, 1913. The bakijai officers attain the status of a civil court for the purpose of receiving evidence, administering oaths, enforcing the attendance of witness and compelling the production of documents.

1. ATM : Automated Teller Machine
2. EMI : Equated Monthly Installment

Finally, the Branch Managers suggested that there should be improvement of the bank. More people should be recruited for aggressive marketing as well as for other development works. The personnel of the bank should be trained intensively. The computer software of the bank should be upgraded as soon as possible as it is outdated and slow. Opening of more branches in the city was also a suggestion from the Managers.

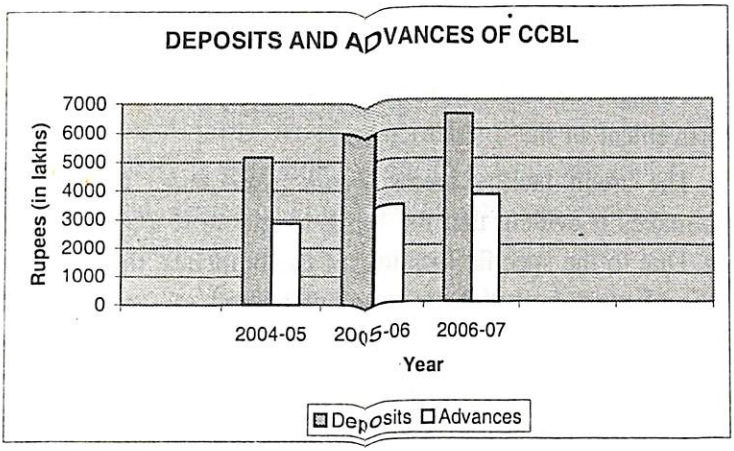
GROWTH OF URBAN CO OPERATIVE BANKS



Source : Annual Reports of CCBL, 2004-05, 2005-06 and 2006-07

The above graph depicts a general trend of decrease in the number of UCBs in India. As compared to 2005, there has been a decrease of 15 banks in 2006. By 2007, the number of banks further decreased by 40. The decrease in the number of banks may be due to any of the following reasons-

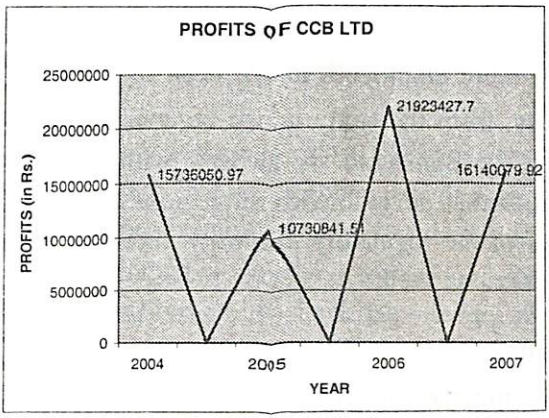
a. Cancellation of license of banks going into liquidation.
b. Merger of the weak entities with the stronger ones.
c. Due to the gradation of the banks.



PROFITS OF THE BANK

	2003-2004	2004-2005	2005-2006	2006-2007
INCOME	8,26,18,390.04	6,55,28,326.36	7,61,90,387.47	7,40,08,968.67
EXPENDITURE	6,68,82,339.07	5,47,97,484.85	5,42,66,959.77	5,78,68,888.75
PROFITS	**1,57,36,050.97**	**1,07,30,841.51**	**2,19,23,427.70**	**1,61,40,079.92**

Source : Annual Reports of CCBL, 2004-05, 2005-06 and 2006-07.



Source : Annual reports of CCBL, 2004-05, 2005-06 and 2006-07.

Conclusion

Though the bank is growing steadily, yet it needs further improvement in the infrastructure.

The credit facility seems to be inadequate. The sample data makes it evident that the bank is unable to cover enough area. Due to the specific location of the branches, the investing public of more potential areas is left behind.

The bank is more into providing short-term credit to its borrowers in the form of home loans, personal loans, furniture loans, vehicle loans etc. The loans provided are on stringent terms according to the rules and regulations of the regulatory authority. The bank has been consistently earning profits over the years. An assumption was made that higher the proportion of overdues, lower is the flow of loans. However, the study reveals that even if the amount of outstanding loan is high in a particular year, the bank has successfully given more loans and advances in the following year.

With the advancement of technology and inclusion of new computer software in the bank the employment opportunity of the bank has started to decrease slowly. However, immediately there is a great demand for additional staff in the bank both for marketing as well as development works of the bank. Recruiting more employees in the need of the hour.

Finally, from the study it can be concluded that The Co-operative City Bank Ltd. is a bank with great potentiality, which can further develop with strategic planning and with the joint effort of the regulatory authority, the bank personnel and the consumers as well.

Suggestions

Following are some of the suggestions for the betterment of the urban co-operative banks in general and The Co-operative City Bank Ltd. in particular.

1. There is a need to define the area of operation of the UCBs. It is better to limit them to the locality concerned and make them grow stronger in one particular area. Though the RBI is permitting them to extend operations outside the state depending on their size and consideration, it is not advisable as such.
2. The boards of the bank must be reconstituted with the representation from the depositors, so that they have the opportunity to protect their interest.
3. It is the need of the hour for the UCBs to create a comprehensive and authentic database for providing meaningful information to the public and the researchers in particular. The reports of RBI do not particularly carry specific data on the UCBs.
4. The UCBs compete among themselves while competing with the public and private sector banks. The UCBs need to come together instead of getting one-up-man ship. The idea should be to have such relationships with banks in other states where branch networks are not available.
5. The stringent rules in relation to lending of loans should be minimized. In order to meet the competition from the private sector, the bank should make its loan lending procedures flexible.
6. Besides providing credit at a heaper cost, the banks should try to inculcate saving habits among the people the additional income of the customer always has the tendency to be used for unproductive social expenditure. Being urban residents, the customers do have knowledge about the advantages of savings and investment. With a little thrust from the bank in the form of innovative saving schemes and a higher rate of interest, the funds of the investors can be properly and profitably mobilized. ❐

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AN OUTLINE OF MICRO FINANCE IN ASSAM

Naba Kumar Goswami*

Micro Finance is the provision of thrift, credit and other financial services and products of very small amounts to the poor in rural, semi-urban areas for enabling them to raise their income levels and improve living standards.

The micro finance initiative of the NABARD, which started with a modest target with formation of 500 SHGs in 1992, has emerged as the largest microfinance programme in the world. SHG is a small economically homogeneous affinity group poor people, voluntarily formed to save small amounts, convenient to all the members as per the collective decission of the group, to meet the emergent consumption and production needs.

Micro finance has become an attractive mechanism to reach financial services to the poor and the methods evolved, reduce certain types of transaction cost, eliminate basic problems of incorrect client identification and mitigate repayment risk to a great extent. While there are some places where men participate in micro finance type of activities, design, the movement has been women centric. Through the mutual have been in the country for about two decades and providers have been operating since the last decade, the movement has not spread throughout the country. While microfinance has had the patronage of successive governments irrespective of party affiliation at the center, the region spread of the movement is desperate.

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In recent years, microfinance has become one of the most effective strategies for development initiatives for the poor, particularly in the world countries. It has been practiced in varying forms in different countries and has come to be regarded as an important tool for poverty allevation.

The need for rural credit in India had been recognized even before independence by the erstwhile British Government as early as 1793 when it is issued regulations for Taccavi loans to farmers and subordinate tenants for various purposes. The Co-operative Societies act which was passed in 1904 to provide necessary legislative support to the financing of agriculture and regulating credit in the interest of cultivators then signaled the entry of credit for agriculture from the institutional sector. Since then and till the late 50's cooperative have been the major institutional sources for all agricultural loans.

In South Asia, the modern microfinance movement was born in Bangladesh in 1976 with the promise of providing credit to the poor without collateral allevating poverty and unleashing human creativity and endeavour of the poor people. The movement was born as a response to the prevailing conditions among the vast poor population. In Srilanka, the thrift and credit movement was reviewed and revised in 1978 by P A Kiriwadenliya under the name of SANSA (it is a peoples movement that follows cooperative values and principles). Astonishing growth rates in Bangladesh, particularly during the 1990's created a new dimension for microfinance world wide.

In India the concept of microfinance is not a new subject. However, the formal programme was initiated by NABARD in introducing SHG Bank credit linkage programme. There is strong evidence that due to lack of collateral, majority of rural and urban poor people (specially women) have been talking financial help from the informal financial and money lenders with high interest. In the vi8llages and remote areas where the formal financial institutions and MFIs can not penetrate their services, still today the moneylenders are taking very important role for expanding microcredit both in India and Assam.

However, in Assam the SHG-Bank linkage programme gathered momentum only from 2001-02 report from the NABARD shows that as on 30th Nov.2006, a total number 123,021 SHGs have been promoted and of these 63,901 SHGs have been credit linked with banks. Here, it may be mentioned that, the SHGs typically start their external borrowing programme after 6 months of rotating savings. This is termed as the linkage programme. The status of SHG Bank linkage programme in Assam up to 30th Nov 2006 is shown below :

Table

Status of SHG-Bank Linkage Programme in Assam.

Sl. No.	Particulars	30 nov. 2006
1.	No. of SHGs credit linked No. of participating banks Commercial Banks 13 Co-operative Banks 02	63,901
2.	Regional Rural Banks 02	17
3.	No. of Districts covered	27
4.	No.of participating NGOs/ SHPIs	93
5.	No.of RRBs as SHPI	1
6.	Bank Loan (Rs In Lakh)	16,020.50
7.	Refinance (Rs In Lakh)	2264.84

Source : NABARD.

From the above table, it is found that microfinance programme is being implemented in all districts of Assam through two RRBs, 13 Commercial Banks and Co-operative Banks. The two RRBs are AGVB and LDRB. The commercial

Banks are Allahabad bank, Bank of Baroda, Bank of India, Canara Bank, Cental Bankof India, UCO Bank, ICICI Bank, Indian Bank, Indian Overseas Bank, Punjab National Bank, State Bank of India, and Union Bank of India. The two cooperative banks are Assam cooperative Apex Bank Ltd. and Assam Urban Cooperative Bank.

Here, it may be mention that the concept of SHGs has been widely spread among the rural poor by promoting agencies, particularly the NGOs who facilitate formation of SHGs. Though regular contacts, they nurture SHGs and guide them in various aspects of savings and credit operations, book-keeping, conduct of meeting, group process, social awareness etc. when the SHGs are matured, the promoting agency facilitates credit linkages of the SHGs with banks. The models of SHGs-Bank Linkage programme which is available both in India and Assam is shown below :

Models of SHGS-Bank Linkage Programme in India and in Assam

Model I : Bank led directly to SHGs without intervention or facilitation by NGO. (which accounts for 20% of the total linkage under the Programme)

Model II : Banks lend directly to SHGs with intervention by NGOs under the formal agencies. (which accounts for 72% of the total linkages)

Model III : Banks lend through NGOs as a facilitator and financing agencies. (which accounts for 8% of the total linkages)

In Assam, as per the available data there are about 276 NGOs functioning in 24 (undivided) districts of Assam. Out of these 55 NGOs are functioning in Kamrup district. The total number of SHGs which have saving linked in Assam upto 30th Nov. 2006 is only 123901; out of these, only 6105 SHGs which have saving linked with banks are working in Kamrup district though a number of NGOs are functioning in the district. The highest number of SHGs operating is in Sonitpur district. In

this district there are only 19 NGOs; however, around 18,637 SHGs have been saving linked with banks upto 30th Nov 2006. so, it can be observed that though so many NGOs are functioning the number of NGOs actively involved with the SHG Bank Linkage programme is very low.

In Assam, there is also another pertinent issue in this field that the number of credit linked SHGs is very low although there are number of saving linked SHGs. The number of credit linked SHGs upto 30th Nov 2006 is only 63901. It means 51.57% SHGs of Assam have credit linkede with banks. As Sonitpur district has the highest number of SHGs, the highest number of credit linked SHGs is found in this district, i.e, upto 30th Nov 2006, out of 18,637 saving linked SHGs, 3546 SHGs have credit linkage programme with the banks.

The present scenario highlights that their might be some drawbacks in the present workings of microcredit which has influence the penetration of the Bangladesh Gramin Bank. Nevertheless, this has and will prove benfecial for the development of the country in the long run. Hence, our suggestion is that we welcome other such financial institution to expand their credit in the potentially remote areas of Assam.

Though, there are number of studies deal with the success of microfinance both in India and Assam, as well as the above figures how a correlation between microfinance and economic development of a society, there is a need of deep research work to find out the real position of microfinance in Assam. But, it can be easily said that upto now, the micro finance programme is not successfully implemented in Assam. □

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INDIAN ELECTRONICS AND IT INDUSTRY : SCOPE IN ASSAM

Bhababhuti Sarma*

Introduction

"Electronic and information technology" is a term used in the 1998 amendments to Section 508 of the Rehabilitation Act. The term is used to define the scope of products covered under Section 508. Section 508 requires that electronic and information technology that is developed, procured, maintained, or used by the federal government be accessible.

Electronic and information technology includes computer hardware and software, operating systems, web-based information and applications, telephones and other telecommunications products, video equipment and multimedia products, information kiosks, and office products such as photocopiers and fax machines.

Electronics industry is the business of creating, designing, producing, and selling devices such as radios, televisions, stereos, computers, semiconductors, transistors, and integrated circuits. As sales of electronic products in the United States grew from some $200 million in 1927 to over $266 billion in 1990, the electronics industry transformed factories, offices, and homes, emerging as a key economic sector that rivaled the chemical, steel, and auto industries in size.

The industry traces its origins to the invention of the two-element electron tube (1904) by John Ambrose Flemming, and the three-element tube (1906) by Lee De Forest. These inventions led to the development of commercial radio in the 1920s, which

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boosted radio sales to $300 million by the end of the decade. In 1947, the electronics industry made another important advance when John Bardeen, Walter Brattain, and William Shockley invented the transistor. Smaller, lighter, and more durable than the vacuum tubes that had been used in radios, transistors touched off a period of progressive miniaturization of electronic devices. Integrated circuits, which were developed in the 1950s, allowed the integration of several circuits into one circuit, and the introduction of analog devices in the 1960s vastly increased the amount of information that could be stored on a single silicon chip.

Other important sectors that have made great advances since the 1970s include laser and optical electronics, digital electronics, and microwave electronics. Advances in the field of electronics have also played a key role in the development of space technology and satellite communications; inaugurated a revolution in the computer industry that led to the introduction of the personal computer; resulted in the introduction of computer-guided robots in factories; produced systems for storing and transmitting data electronically; greatly expanded the market for popular music and culture; and, in the process, transformed life at home, the office, and the factory. Many of these innovations, such as the transistor, had their origins in military research, which needed increasingly complex electronic devices for modern high-tech warfare.

In the 1960s, the U.S. consumer electronics industry went into decline as manufacturers were unable to compete with the quality and pricing of foreign products, especially the electronic goods produced by Japanese companies such as Sony and Hitachi. By the 1980s, however, U.S. manufacturers became the world leaders in semiconductor development and assembly. In the 1990s semiconductors were essential components of personal computers and most other electronic items (including cellular telephones, televisions, medical equipment, and "smart" appliances). While U. S. companies are still a major presence in the semiconductor industry (representing about 40%

of world sales in 1998), the consumer items themselves are mostly made overseas. Worldwide electronic sales were nearly $700 billion in 1997.

Information Technology (IT) implies the application of computers to store, process and use of information particularly in the field of commerce and now more into e-commerce and e-business.

Basically, IT helps to provide right information at right time, with the use of computer, communication, telephone, Internet etc. Because of this opportunity, IT has been recognize as a potential enabler for the growth and expansion of the business. Modern companies have been invariably growing their business by looking at new markets and products with the help of IT. There is no formal design for Information Technology as offered or implied. But the use of Information Technology is burgeoning, large accounting firm have IT departments, there are specialist IT lawyers, some Governments have Ministries of IT, Universities have established IT faculties, IT journalist of region and self-styled IT professionals abroad.

Indian Electronics Industry

The beginnings of the Indian electronics industry reach back to the early 1960s. At that time the electronics industry concentrated on developing and maintaining fundamental communication systems, such as radio-broadcasting, telephonic and telegraphic communication; and aimed at enhancing defence capabilities. Later, at the end of the 1980s, the electronics industry experienced rapid growth, as a result of outstanding economic changes. The latter were due to the liberalization and globalization efforts of the Indian government in order to trigger off economic growth and to promote the creation of an export-oriented electronics industry. By 1991, foreign and domestic private investments were encouraged. Foreign investment norms were eased, 100 % foreign equity was allowed, custom tariffs were reduced and many consumer electronic products delicensed. These initiatives attracted a large

amount of foreign investment and collaborations. The latest step for supporting the opening of the electronics sector for global players was the signature of the information technology agreement (ITA-1) of the WTO, which came into force in April 2005. Since then the "Zero Customs Duty" principle applies for all electronic components. This represents a great opportunity as well as a challenge to domestic and foreign manufacturers.

Some facts of Electronics & IT industry of India

- Indian electronics industry covers the entire gamut of electronic products such as avionics, computer software and hardware, medical electronics, tele-communication equipment and Information Technology (IT) enabled services.
- Electronics industry is expected to grow to US$ 38.5 billion at a Cumulative Annual Growth Rate (CAGR) of 37 percent between 1996-97 and 2001-02.
- Production in the consumer electronics sector achieved a growth rate of 22 percent in 1999-2000.
  In the last five years (1995-2000) the Indian IT industry has recorded a CAGR of more than 42.4 percent which is almost double the growth rate of IT industries in many of the developed countries.
- The software sector continues to contribute a major portion of the revenues of the Indian IT industry and is growing at a CAGR of 56.5 percent. The software sector is expected to generate revenues of US$ 87 billion by 2008.
- The IT enabled services sector is expected to generate revenues of US$ 17 billion by 2008 and was worth Rs 4,100 during 2000-2001.
- The hardware sector has been growing at an average rate of 30-35 percent annually over the past decade. The IT manufacturing industry has over 150 major hardware players supported by over 800 ancillary units

and small time vendors engaged in sub-assemblies and equipment manufacturing.

- More than 185 of the Fortune 500 companies outsource their software requirements to Indian software companies.

Industrial Feature of the Assam :

The two major industries of Assam are oil and natural gas and tea which account for the maximum value addition. The oil and natural gas industry is govt. controlled and operates under the umbrella of the Ministry of Oil and Natural Gas. The tea industry in Assam, which accounts for around 50% of the country's total tea production, is mainly controlled by large private companies. Both the sectors have made considerable progress over the years and are way ahead of the other industries in the state. Besides oil and natural gas and tea, the other important industry in Assam is mining. Coal and limestone are mined in considerable quantities in this state.

The food products sector account for bulk of the industrial production in Assam. Although the contribution of this sector to the total output of the country's manufacturing sector is very minute, the importance of food products in the state's economy cannot be overlooked. In fact, there is considerable scope for the establishment of large and medium scale industries in this sector. After food products, the most significant sector for Assam is the petroleum, plastics and rubber sector. This sector accounts for 30% of the total output value for the state's manufacturing industries. In the other manufacturing industries category, the most important sector is textiles which accounts for 1.7% of the total output value of Assam's manufacturing industries.

Prospective allied industries :

Assam is the only NE state which can be compared in the same scale as the other states in the country. The potential of industries is also much higher in Assam as compared to the

other NE states. Assam derives its advantage because it already has an established industrial culture and also has the most developed infrastructure in the region. This is supported by a diverse resource base which can form the basis of many industries. Assam also has a much higher surplus generation than the other NE states. This can support a host of demand based industries in the state. In Assam there is plenty of scope for value addition in the mineral based downstream and ancillary units. The crude that is extracted can be further value added through refineries and also many downstream projects can come up to these refineries. Similarly for coal, Assam has very good potential for Sericulture. The major potential industries for Assam are—

Primary resource based industries

Primary resource based industries are those that are based on the natural resources available in the state. The resources that are considered are wood, bamboo, tea, oil and natural gas, mineral resources like granite, coal and limestone, horticulture items and silk. The industries are listed below :

a) Plywood and Hardboard based on wood. Very high quality soft wood is available in Assam and also in the neighboring NE states.

b) Limestone Quarry based on the limestone reserves of North Cachar hills. This has the largest deposits of cement grade limestone reserves. Most of it is found in the Garampani and Umrangsho area.

c) Granite reserves are found in the Panimur area of the North Cachar hills. Granite quarrying and processing is a sunrise export industry, and granite processing units with their own quarries can be set up in Assam. If the processing cost can be kept under control, then granite has a very good potential in Indian and overseas market as a decorative building material.

d) Exploration and exploitation of oil fields in Assam.

e) Refinery for the crude that is extracted.

f) Sugar Mills from sugar cane

g) Paper from bamboo chips or bagasse from sugar mills

h) Fruit processing and food processing units using banana, mushroom, meat (pork and beef)

i) Sericulture and silk processing and textile units. Excellent quality silk of eri and muga variety are grown in Assam. In fact, the cultivation of bi-voltine variety of silk should be encouraged so that the quality of silk that is produced can compete with the best silks in the world. If good silk can be produced, modern silk processing plants can be set up in the state.

j) Handloom and Handicrafts items which have very high value addition can be used as export items.

Downstream and Ancillary units

The downstream projects that are considered here are chiefly based on the gas and oil that are available in the state. The other industries for which downstream projects have been considered include coal-based downstream projects, cement as downstream to limestone quarrying etc. Ancillary units can be thought for tea machinery and oil tankers.

a) Gas Cracker projects utilizing the gas from the oil fields of Assam. The plant will produce downstream products of ethylene, propylene and oxo-alcohols.

b) Plastics as downstream projects of the refinery.

c) Textile Mills using synthetic fibers obtained from the down stream projects to the refineries.

d) LPG bottling projects as downstream projects of the refineries operating in Assam.

e) Liquefaction of coal gas.

f) Coal washery for improving the calorific value of coal for supplying to secondary steel making units.

g) Cement Plants

h) Oil tanker

i) Tea machinery

Demand based industries

The demand based industries will be based on the local demand generated for various goods and services both in the domestic and industrial sector. The raw material will be imported from other regions of the country and value addition will be carried out in the state. The price of these products has to be competitive as against those coming into the state from other regions. Demand based industries can come up in the following areas :

- Hotel to cater to the tourist and also the mobile business community.
- Nursing Home.
- Rolling mill from scrap iron.
- Induction Furnace.
- Carbon Products.
- Electrode manufacturing.
- Soft Drinks.

Scope of Electronics and IT industry in Assam :-

The State of Assam is characterized by a charming diversity of culture and lifestyle. It is abundantly blessed with various natural resources. The improvement in transportation and communication system makes the state ready for rapid growth and development. More attention and emphasis is now being given at the highest levels for the industrialization of the state in order to catch up with the advanced states of the country and meet popular aspiration.

Electronics and IT has been identified as a thrust area for Assam at various forums. Assam Electronics Development Corporation Ltd (AMTRON) was established as a government of Assam undertaking with the objectives to promote Electronics and IT industry in Assam and act as a nodal agency of the Government of Assam.

The scope for Electronics industry in Assam is very significant due to the following potentialities & incentives for its growth in the State.

1. The dust and pollution free atmosphere of Assam is considered as a promising land for Electronics Industry.
2. Sales Tax exemption.
3. Transport Subsidy.
4. Capital investment subsidy.
5. The State also being a backward State, Financial help from both the government of India and the State Government are available.
6. Sufficient qualified and unskilled Worker.
7. Wide market for Electronics Products.

Similarly, in respect of IT industry also Assam has great potentialities for its growth and development

1. IT is basically a knowledge based industry. The large number higher educational institutions in the state (as shown in the following tables) are the power house for technologically knowledgeable persons in the state.

The number of educational institutions in Assam in the year 2004-05 is listed below :

Type of Institution 1	Number 2	Teacher 3	Enrolment 4
1. University	5	N.A.	13371
2. Institute of National Importance	1	N.A.	N.A.
3. College for General Education			
(a) Arts. Science and Commerce College	317	10462	370338
(b) Junior College	125	1614	35672
4. College for Professional Education			
(a) Agriculture and Forestry	2	N.A.	N.A.
(b) Engineering	3	444	3810
(c) Law	20	166	7165
(d) Veterinary	2	187	736
(e) Medical College (including) Homeo/Ayurvedic/Dental/ Pharmacy/Nursing	7	805	2556
5. School for General Education			
(a) Higher Secondary School	620	21201	515524
(b) High/post Basic School	4629	54224	1081585
(c) Middle/Senior Basic School	8143	73147	1106711
(d) Primary/Jr. Basic School	30068	83720	2624942
(e) Pre-primary/Pre Basic School	199	199	746390
6. Institution for Professional Education (Under Graduate)			
(a) Polytechnic Institution	8	N.A.	4500
(b) Technical Industrial Arts and Craft School	32	N.A.	4560
7. Teachers Training institution			
(a) Teachers Training college	40	340	2387
(b) Teachers Training School	1	N.A.	N.A.

a) Education
b) Transportation
c) E-Governance
d) Call Center Business
e) Medical Transcription

8. The special incentive given by the policy of Central Government is also increase the scope for development of IT industry in the state. These are :

a) Income tax exemption under Section 80 HHE on profits from export software and IT-enabled services
b) Special Import License (SIL) against export.
c) Zero customs Duty on import of IT software
d) 100% FDI permitted in IT Remote services
e) 10 year total tax holiday for Industries in North East India

10. Apart from the above the state IT policy gives extended benefits for IT sector in the state. Some of the salient features are :

a) Subsidy on leased line connectivity
b) Subsidy on Captive Power Plant
c) Subsidy on Diesel Generating Set
d) Subsidy in Manpower Training and Development
e) Incubation facility for Software Exporters
d) Subsidy on capital equipment
f) Sales tax exemption to new and existing units for 10 years
g) Subsidy on Infrastructure
h) Subsidy on Quality certification

11. The Software Technology Parks of India (STPI) has been one of the leading agencies in the state providing the basic infrastructure and Gateway for export of software and Software related services. The STPI Guwahati which has started functioning only from a few years ago widen the scope of IT industry in Assam and North East.

12. Assam has the great scope to attract investment in Electronics and IT sector. This is because of the commissioning of 'Lukopriyo Gopinath Bordoloi'(LGNB) Airport as an International Airport, which enter the state in the global map.

In addition to it, the climate and the development of quality housing and other recreational facilities has added extra mileage for an investor to look towards Assam. Moreover, the present transportation facilities of Assam removed the inaccessibility to a large extent. □

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GROWTH AND PROSPECT OF URBANIZATION IN INDIA—AN OVERVIEW

Upasana Chakravarty*

Introduction

Urbanization refers to the concentration of population at a centre, i.e., it may be defined as the proportion of population residing in urban centers or in a sophisticated way, it refers to the proportion of population engaged in secondary sector of economy in urban places. Urbanization is the process by which villages turn into towns and towns develop into cities, Sinha and Zacharia—1984. Demographically, it is an increase in the urban population, a growth in number and size of urban settlements and an increasing concentration of the population in such places—Yadav and Verma, 2005. If the rate of increase in an urban population is greater than the total regional population by a considerable margin, it is called urbanization.

From structural point of view, the concept of urban process is economic and relates to the movement of people out of agricultural communities into other non-agricultural communities. It directly correlates the economic development with urbanization. Therefore, urbanization is seen as a product of increasing economic specialization and advancing technology.

From the behavioral point of view, urbanization is concerned with the experience of individual over times and with pattern of behavior.

The study of urbanization is assuming increasing importance all over world, specially in the developing countries like India. In India, the definition of an urban unit was adopted from the 1961 census and defined as follows :

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(1) all places with a municipality corporation, cantonment board or notified town area committee etc.

(2) all other places which satisfy the criteria (a) a minimum population of 5000, (b) at least 75% of male working population engaged in non-agricultural pursuits and (c) a density of population of at least 400 persons per square km.

Trend and Process of Urbanization

Urban population in India has increased in three stages. The period between 1901-1931 was a period of slow urbanization e.g. the level of urbanization at the time of census calculated in 1901 was less than 11% which lazily creped to the figure of 12% in 1931 (the main reason for this decline was high urban death rate due to severity of plague in towns of north, west and central India).

From 1931, the areas in and around the major port cities and a few mineral resource-based industrial town gathered momentum slowly to attract population and began to develop as large township. The process of industrialization began to create a new set of life-style based on growth of towns and also the expansion of export trade of raw materials and semi-finished commodities from major ports attracted more and more people towards urban areas. This period was considered as the period of medium urbanization (1931-61). During 1931-41, the urban population increased by 32% as compared to an increase of 13.86% for the total population. The effects of Second World War (which attracted large number of people to industrial and service jobs to meet war time need of defence persons) kept up the level of urbanization during 1941-51 at a very high level (41.43%). During 1951-61, the urban growth rate declined to 26.4%, though absolute figures increased from 62 million to 79 million. During this period towns registered a marked declined due to definitional changes to towns. From the early 70's, India has experienced a massive addition to the urban labour force creating rapid urbanization.

Measurement of Urbanization level

The degree of urbanization is computed by one indicator related to any aspect of the demographic of urban process ratio of urban population to total population has mostly chosen as a simple indicator for spatial study of the urbanization.

$U = Pu/Pt$

Where, U — urbanization

Pu — population in urban areas

Pt — total population

Urbanization is characterized by an increase in the above ratio.

In India, urbanization is merely related to demography rather than socio-economic and cultural phenomenon. The rate of urban growth is an important index of progress of the economy as urbanization is considered as a consequences as well as a causal factor in economic development.

According to 2001 Census, India's urban population has been 285,354,954 and level of urbanization at 27.78% is much lower than the level of urbanization of developed countries which varies between 60% to 100% and even lower than some of the developing countries of Asia and Africa such as China (53%), Pakistan (32%), Nizeria (35%), Zambia (59%) etc. A lot of variations have been observed in the level of urbanization among the states in India. A high level of urbanization of above the national average has been observed in various states such as Mizoram, Goa, Maharastra, Gujarat, Tamil Nadu and Karnataka while low level of urbanization of less than 15% has been observed in different states like Himachal Pradesh, Sikkim, Assam, Arunachal Pradesh, Bihar and Orissa. The following Table-1 indicates the percentage of urban population of the states and union territories.

Table - 1

Trend of Urbanization in India : 1901 to 2001

Census Year	No. of UAs/Towns	Total Population	Urban Population	Urban Population as % of Total Population
1901	1827	238,396,327	25,851,873	10.84
1911	1815	252,093,390	25,941,633	10.29
1921	1949	251,321,213	28,086,167	11.18
1931	2072	278,977,238	33,455,989	11.99
1941	2250	318,660,580	44,153,297	13.86
1951	2843	361,088,090	52,443,709	17.29
1961	2365	439,234,771	78,936,603	17.97
1971	2590	548,159,652	109,113,977	19.91
1981	3378	683,329,097	150,462,547	23,34
1991	3768	844,324,422	217,117,625	25,72
2001	NA	1,027,015,247	285,354,954	27.78

Source : Census of India 2001, Paper 1, Series 1 of 2001.

Table - 2

States and Union Territories arranged in ascending order of their level of Urbanization (according to 2001 census)

India/State/ Union territories	Total Population	Urban Population	Urban Population as % of Total Population	
			1991	2001
India	1,027,015,247	285,354,954	25.72	27.78
Himachal Pradesh	6,077,248	5,482,367	8.70	9.79
Bihar	82,878,796	8,679,200	13.17	11.10
Sikkim	540,493	60,005	9.12	11.10
Assam	26,638,407	3,380,413	11.08	12.72
Orissa	36,706,920	5,496,318	13.43	14.97
Tripura	3,191,168	5,43,094	15.26	17.02

India/State/ Union territories	Total Population	Urban Population	Urban Population as % of Total Population	
			1991	2001
Nagaland	1,988,636	3,52,821	17.28	17.74
Meghalaya	2,306,069	4,52,612	18.69	19.63
Chattisgarh	20,795,956	4,175,329	N.A.	20.08
Arunachal Pradesh	1,091,117	2,22,688	12.21	20.41
Uttar Pradesh	166,052,859	34,512,629	19.89	20.78
Jharkhand	26,909,428	5,986,697	N.A.	22.25
Dadra and Nagar Haveli*	2,20,451	50,456	8.47	22.89
Rajasthan	56,473,122	13,205,444	22.88	23.38
Manipur	2,388,634	5,70,410	27.69	23.88
Jammu and Kashmir	10,069,917	2,505,309	23.89	24.88
Uttaranchal	8,479,562	2,170,245	N.A.	25.59
Kerala	31,838,619	8,267,135	26.44	25.97
Madhya Pradesh	60,385,118	16,102,590	23.21	26.67
Andhra Pradesh	75,727,541	20,503,597	26.84	27.08
West Bengal	80,221,171	22,486,481	27.39	28.08
Haryana	21,082,989	6,114,139	24.79	29.00
A&N Islands*	3,56,265	1,16,407	26.80	32.68
Punjab	24,289,296	8,245,566	29.72	33.95
Karnata	52,733,958	17,919,858	30.91	33.98
Daman & Diu*	1,58,059	57,319	46.86	36.26
Gujarat	50,596,992	18,899,377	34.40	37.35
Maharastra	96,752,247	41,019,734	38.73	42.40
Tamil Nadu	62,110,839	27,241,553	34.20	43.86
Lakshadweep*	60,595	26,948	56.29	44.87
Mizoram	8,91,058	4,41,040	46.20	49.50
Goa	1,343,998	6,68,869	41.02	49.77
Pondicherry*	9,73,829	6,48,233	64.05	66.57
Chandigarh*	9,00,914	8,08,796	89.69	89.78
Delhi*	13,782,976	12,819,761	89.93	93.01

From the above table it is observed that the higher industrialization in states of Tamil Nadu (43.86%), Maharastra (42.40%), Gujarat (37.35%), Karnataka (33.98%), Punjab (33.95%), Haryana (29.00%) and West Bengal (28.03%). This proportion of urban population is higher than the national average of 27.78%. But the states of Andhra Pradesh (27.08%), Madhya Pradesh (26.67%), Kerala (25.97%), Rajasthan (23.38%), Uttar Pradesh (20.78%), Orissa (14.97%), Assam (12.72%) and Tripura (17.02%), the proportion of urban population has been observed below the national average. The least urban states are Himachal Pradesh (9.79%) and Bihar (10.47%).

Trend of Urbanization in Assam

The later half of the twentieth century was exemplified with the unprecedented growth of cities and towns of the so-called third world countries and the rapid growth in this case was fuelled by population, which was multiplying at an explosive rate. With the falling birth and death rates in the urban areas, rural-urban migration has assumed an even more significant role for such dramatic increase in urban population. An estimate had indicated that rural migrants constitute anywhere from 35% to 65% of the recorded urban population growth, whereas in case of India the figure of 45% had been earmarked to account for a part of 3.8% annual urban population growth (Newland, 1980). In keeping with the trend in the developing countries, Assam also experienced a process of rapid urbanization. This was evident in the census figures, where the urban population went up from 344,831 in 1951 to 2,487,795 in 1991 and to 34,39,240 in 2001, thereby increasing the percentage of urban population to the total population from 4.29% (1951) to 11.10% (1991) and to 12.90% (2001), [Govt. of Assam, 2005]. The rate of urbanization in Assam is however much below than the national level. It is evident from the following Census figures.

Table - 3

Year	Urban Population (in %), Assam	Urban Population (in %), India
1991	11.10	26.13
2001	12.90	27.78

Source : Statistical Handbook of Assam, 2005, Govt. of Assam.

Table - 4

Urban population and its proportion to total population in selected district of Assam

District	Urban Population			Urban Population as a % to Total Population		
	1951	1991	2001	1951	1991	2001
Karmrup	48,321	6,55,215	9,08,217	7.65	32.76	36.01
Jorhat	16,164	1,33,032	1,71,320	3.6	15.27	17.15
Dibrugarh	37,991	1,83,850	2,28,438	8.06	17.61	19.28
Cachar	34,059	1,19,224	2,01,387	6.29	9.81	13.94
Assam	3,44,831	24,87,795	34,39,240	4.29	11.10	12.90

Source : Statistical Handbook of Assam, 2005, Govt. of Assam.

From the above two tables—Table-3 and Table-4, it is observed that within the state, the urbanization process was the strongest in Kamrup district, where the percentage of urban population to the total population went up from 7.65% in 1951 to 32.76% in 1991 and to 36% in 2001. The extraordinary rate of urbanization of Kamrup was fuelled by the explosive growth of its principal city, Guwahati, which accounted for 89.18% of the district's urban population.

The economy of Guwahati is dualistic in nature, which is characterized by the presence of a modern formal sector and an unorganized informal sector. It is the informal sector, producing a vast assortment of goods and services that is responsible for creating most of the opportunities for sustainable work. Question may arise, what makes the informal sector tick? First, very small scale units, which are either individually or family owned, constitute the informal sector. This makes the entry of such a unit into the economy easy. Secondly, these units use very simple technology, which is labour intensive, making their operating cost very cheap. Thirdly, labour intensive technology is economical because of the workers in this sector are illiterate and unskilled rural migrants who offer their services at a low wage. Besides for those workers who are self-employed, they are able to provide their products at a price which is a fraction of what it would have cost in the formal sector. Finally, the lack of organization and official recognition means that most of the units in the informal sector need not register themselves with official authorities, which exempts them from the constraint of the regulation. Non-intrusion of labour laws and other social security compulsions means that work can be created without the additional burden and cost of providing the necessary social security measures. Employers are free to "hire and fire" and self-employed can change what they produce without any hindrance. All these factors impart flexibility and adaptability to the informal sector, which enables it to survive and flourish. And this inherent dynamism allows the informal sector to absorb the rapid addition to the labour force in diverse activities, ranging from hawking to construction of labour, and from working as mechanic to serving as domestic servant. In fact, a study had revealed that the informal sector provides work to 20% to 70% of urban labour force in the developing countries, the average being 50% (Sethuraman 1981). This is also true for Guwahati and so the informal sector has a crucial role to play in giving sustenance to the rapidly multiplying urban workers, especially to the rural migrants, considering the

small base of the urban formal sector, in terms of output and employment. These conclusions can be extended to the small towns of Assam, although the size of the informal sector, the growth in the labour force and the volume of rural migrants will be a smaller magnitude. Besides providing sustenance to a huge chunk of urban labour force, the informal sector also provides an impetus to growth for the urban formal sector, by generating surplus for investment. It also enhances the competitiveness of the out put of the formal sector by supplying cheap inputs for its production units. Thus the urban informal sector has a benevolent impact on the rural sector.

Factors responsible for Urbanization

Urbanization is a part of the development process and it is very fast in rapidly growing economics where newly established industries and ancillary activities continuously provide jobs to people who wish to migrate to cities. The economic pull of cities in this phase of development becomes strong if industrial growth is fact where high capital intensive industries offer jobs in increasingly large number.

Urbanization increases due to concentration in Million Plus Urban Agglomerations. The 1971 Census introduced the term Urban Agglomeration (UA) which include suburban outgrowths of a particular town with that town itself. This concept enables us to compare more effectively the sprawl of different urban centers especially the spread of large cities into their adjoining areas. [In 1971, there were 9 UAs having population greater than one million each Kolkata, Greater Mumbai, Delhi, Chennai, Hyderabad, Ahmedabad, Bangalore, Kanpur and Pune). In 1971, there were 8 million plus cities and 9 million plus UAs and in the decade 1991-2001, the most spectacular rise was in the population of Delhi, which registered an increase of 53.2%. The population of the four largest UAs—Mumbai, Kolkata, Delhi and Chennai—registered an increase of 29.9, 19.9, 52.0 and 18.5 percent respectively (1991-2001).

India is a very big country both in terms of area and population and its states are larger than most of the countries in the world. Comparing the rate of growth of urban population in various states, it is has been observed that poorer states (like (Orissa, Uttar Pradesh, Madhya Pradesh, Rajasthan, and Andhra Pradesh) have urbanized faster than the old industrialized states (like West Bengal, Gujarat and Tamil Nadu). Urbanization was faster in old industrially advanced states in India, namely, maharastra, Gujarat and Tamil Nadu have now over 34% urban population. In these states industrialization results in perceptible increase in urban population but due to high base, growth rates of urban population turn out to be lower than those in poorer states. In the early phase of planned development, industries in these states had received a big boost as a result of which urbanization was fast. But subsequently due to emphasis on decentralization, industries were set up in less developed regions of poorer states. This policy accelerated the process of urbanization in these states. Again, in Haryana, Punjab and Western Uttar Pradesh (which are the centres of green revolution) urbanization process had been accelerated by the steady rising agricultural productivity. In this regard we can say that rapid urbanization is taking place either because of major public investment in industry or as a result of agricultural growth. In both cases regional income must be rising relatively rapidly, creating demand for urban goods and services. Given the demand for labour in urban area, rural-urban migration take place rapidly.

The factors influencing rural-urban migration in earlier times was largely on account of non-economic factors such as social, physical, demographic, cultural and communication factor. All these non-economic factors are even now relevant. However, now there is wide-spread agreement that migration is caused mainly by economic factors. These include "push" from subsistence agriculture and "pull" of relatively high urban wages and "push back" towards rural areas as a result of high urban unemployment.

The factors responsible for accelerated pace in the rise of urbanization process and contribution to increase in the number of urban areas and the magnitude of urban growth may be classified as follows :

I. Economic factors,
II. Demographic factors,
III. Industrial development,
IV. Social and cultural factors,
V. Geographical and physical factors.

Economic factors :

In most cases, the important factor stimulating migration is the economic motive. The migration flow is usually pronounced from backward and stagnant regions, characterized by inferior economic opportunities to advanced and prosperous areas, characterized by superior economic opportunities.

The most important economic factors that motivate rural-urban migration are—

a. Push factors
b. Pull factors
c. The general economic conditions.

Push factors

The push factors refer to the poor economic conditions and lack of opportunities in rural areas that tempt people to move to urban areas in a bid to improve their economic condition. The miserable rural poverty, characterized by low agricultural productivity, unemployment and underemployment, low-income levels of consumption, may push people out to the cities and towns, where there are better economic opportunities.

An ILO study has come to the conclusion that "the main push factor causing the workers to leave agriculture is the lower level of incomes. In almost all countries, incomes in agriculture are lower than in other sectors of the economy."

The population explosion, from which the developing countries are suffering, results in lower land-man ratio and the accumulation of surplus labour on land causing disguised and open unemployment.

Similarly, existence of joint family system and the inheritance laws which does not permit the division of property impel many young people to migrate to cities in search of better economic opportunities and "independence".

Thus, poor economic conditions are the root cause of "rural push".

Pull factors

Some of the urban-ward migration streams may be regarded as the response to the "pull" exercised by the better economic opportunities available in the urban areas of an economy. There is usually an exodus of population to the cities where rapid expansion of industry and commerce takes place. In other words, the city-ward migration is encouraged by the presence of a variety of occupations to choose from, the higher wage levels and the possibility of attaining higher standards of living. Apart from better economic opportunities, there are a host of other attractions that the city holds out, such as well-developed network of civic amenities and facilities in every sphere making life smoother and comfortable as compared to the villages, more independence and freedom, more independent outlook and progressive ideas, better educational, cultural, medical and social life facilities and prospects of a prosperous and glorious future.

The general economic conditions

The urban-ward is sometimes greatly influenced by the ups and downs in the business cycle and the economic fluctuations in different areas and sectors. e.g. the expansion of urban economic activities during prosperity period is like to pull the rural population towards the city while during depression this urban-ward movement is checked and if the

depression is very severe a net rural-ward movement of the population may take place. Natural calamities and vagaries like famine, cyclones, earthquakes etc. would push a number of people to the cities. Similarly, an elaborate and efficient network of transport and communication system can facilities migration.

Demographic Factors

The difference in the rates of population increase between the different areas of a country have been found to be a stimulant to internal migration. Fertility and the rate of natural increase in population are generally higher in rural areas than in urban areas. The reduction in the mortality rate and the concomitant high rates of population growth would drift the rural population towards the city. Some other demographic factors such as marriage migration also play a prominent part in the internal migration. In recent years, the proportion of migrating women in India has increased as their educational opportunities have increased. Basically there are two types of female migration the associated migration of wives and daughters accompanying the male migrant and the migration of independent females.

Industrial development

Industrial development contributes to the growth of new towns as well, to provide housing, civic amenities and other services to the people engaged in the industrial concern and to counter the increasing concentration in large cities. Many new towns were set up to meet such requirements in the industrial centers, e.g. single industry (Steel) township like Rourkela and Bhilai townships having an industrial complex such as Durgapur, Nangal, Chittaranjan, Ranchi etc. Shah emphasized that urbanization and industrialization may be considered as the two strongest factors underlying modern civilization whereas industrialization is characterized by larger employment in the manufacturing sector, urbanization is characterized by larger employment in the manufacturing sector, urbanization is

characterized by movement of people from small communities concerned solely with agriculture and allied occupations to generally larger communities whose activities are centered primarily in manufacture, trade and services etc.

Social and cultural factors

The quest for independence, the desire to break away from traditional constraints of social organization conflict among the family members etc. may cause migration, especially of those in the younger generation. The allurement of what is called the "bright light", i.e. the social facilities of the towns, may also pull some of the rural folks. Improved communication facilities such as transportation, the modernizing impact of the introduction of radio, television and cinema, urban oriented education, rural-urban interactions etc. and the resultant change in the social values and attitudes are also likely to promote urban migration.

Geographical and physical factors

Geographical and physical factors such as distance, natural barriers, size of he country, weather and climatic conditions, metrological disasters like floods and droughts etc. have also been found to influence the movement of people. The influx of refugees (from the independence period) also resulted in the increase of urban population. A large number of new townships had also to be developed to rehabilitate the displaced persons. New capitals were also developed on planned basis such as Chandigarh (Punjab and Haryana), Bhubaneswar (Orissa) and Gandhinagar (Gujarat), which now accommodate millions of urbanities.

The activities of terrorists and militants have also been responsible for migration of rural people to urban areas for reasons of security and safety which the urban areas are expected to provide in greater measure in comparison to the urban areas.

Urbanization Policy in India

Urbanization is an important branch of historical studies in recent times. In India, till independence its importance was hardly recognized while in the West, extensive works have done in this field. From academic point of view, no systematic research was done in this subject but attempts have been made by the Government from time to time to conduct socio-economic studies in selected cities in order to understand the problems created there by rapid urbanization. Town planners have also conducted some specific survers in several cities to meet the requirement of urban planning. But these are made just to serve the purpose of the Government. So they do not help us to understand the origin and growth of a town in historical perspective, analyzing the demographic, socio-economic factors which bring about urbanization and its impact on the society at large. But recently some studies have been undertaken, which help to understand the socio-economic history of modern India in a broader perspective.

The remains of Mohen-jo-daro and Harappa clearly indicate that the Indian sub-continent was one of the earliest cradles of civilization. A full-fledged civilization had existed on the Indian continent as early as 2500 B.C., urban life, therefore, not something new to Indian culture. The urban tradition continued through centuries, and during the ancient period of our history, there were many well-planned and beautiful cities in different parts of the country. A number of great cities of the past have either disappeared because of natural calamities and wars or declined in importance today. Before the colonization of India by the British, India had many great cities, which were clearly written by the foreign travelers in their writings during 15th and 16th centuries. By the beginning of the second half of the last century, the European-oriented "new urbanism" had begun. By 1900, more than one-tenth of the Indian population had come to live in towns and cities. At the dawn of the present century, urbanization in India lagged behind not only that in the western countries but also behind the world average, for

example, Indian urbanization was lagging behind by about 50 years in comparison with the world standard. However, she was ahead of Asia and Africa, e.g. in 1900, only 2.1% of Asian population and 1.1% of the African population were in the large cities as against the corresponding proportion of the India population of 2.4%.

In the context of rapid urban growth and the harmful effects of unplanned urbanization, the positive role that planned urbanization can play and the importance of systematic and perspective urban development policy and programmes need no emphasis. However, like most other developing countries, India still lacks comprehensive, systematic and integrated urban and regional development plans and urbanization policy, which give due the recognition to the spatial, economic, ecological and demographic dimensions of national development. Urban development plans are generally characterized by lack of coordination between various sectorial plans and fragmentation of programmes for urban development.

Policies and Programmes under the plans

The First and Second Five Year Plans of India seems to have identified the major problems of urbanization with those of housing and controlling lands prices. The Third Plan, however, had a broader perspective with objective to secure a balanced development of large, medium-sized and small industries and of rural and urban areas. The Third plan pointed out that town planning was indispensable to secure an orderly development of towns and cities. Regional and urban development was accorded particular recognition in this plan and development plans for 72 urban centers and regional studies of metropolitan regions were undertaken. During this plan period, by 1968, almost all the states had introduced Town Planning Legislation with a varying scope.

The Fourth Five Year Plan emphasized the importance of regional planning with a long-term perspective for the proper development of the rapidly growing cities and the surrounding

regions. It observed : "The administrative structure of the local bodies need to be reviewed and rationalized towards better implementation of development plans. Expenditure on specific schemes, such as, roads, water supply, is likely to be highly wasteful in the absence of a long-term plan."

Some of the objective and strategies for urban development during the Fifth Five Year Plan were as follows :

- To make efforts to tackle the problems of metropolitan cities on a more comprehensive and regional basis;
- To augment civic services in urban centers as far as possible and to make them fit for a reasonable level of living;
- To promote the development of smaller towns and new urban centers to ease the pressure of increasing urbanization;
- To provide necessary support for the enlargement of industrial township undertaken by the Central Government undertakings so as to make them more self-contained.

The Sixth Five Year Plan stated that the thrust of the urbanization policy during the next decade would be to give greater emphasis to the provision of adequate infrastructure and other facilities (like housing, water supply, communication, education, medical care and recreation etc.) in the small, medium and intermediate towns. Given the economic importance to large cities, it was emphasized that the conditions of the urban poor should be improved and civic services provided, so that the large capital investment (on housing, schools, entertainment facilities, power, water supply, sanitation, drainage etc.) of all kinds that existed in these cities might be better utilized. The plan emphasized a balanced approach to ensure an orderly process of urbanization along with the overall development of the country.

Some major policies were placed on the following measures during the Sixth Plan :

- Greater emphasis was on environmental improvement of slums instead of attempting a massive reallocation of slums and accordingly increased investment was made on it.
- A provision of Rs. 96 crores was made in the Central sector for the Centrally Sponsored Scheme of Integrated Development of Small and Medium Towns.
- A provision of Rs. 10 crores was also made for the National Capital Region around Delhi, which was expected to do-concentrate economic activity from the core of Delhi into regional towns of Uttar Pradesh, Haryana and Rajasthan.
- A sum of Rs. 1.60 crores was being provided for research and development in order to improve the formulation of policies on urbanization and urban development.

The Seventh Five Year Plan emphasized on the following programmes :

- The Environmental Improvement of Slums (EIS) programme has to be continued with more importance and steps should be taken to provide security of the slum dwellers so that they can maintain an improved standard of living.
- To ensure a balanced distribution of urban population and to slow down the growth of metropolis, a centrally sponsored scheme of Integrated Development of Small and Medium Towns (IDSMT) was introduced during the Sixth Plan, to provide infrastructure and other facilities in these towns and this scheme was proposed to continue during the Seventh Plan.
- A provision of Rs. 90 crores was also include during this plan in the states sector to provide infrastructural facilities such as road pavements, minor civic works as well as some basic amenities like bus stands, market, shopping complexes, theaters etc.

- It was proposed to set up an Urban Infrastructure Development Finance Corporation to deal with the emerging urban problems that the country is and will be facing.
- A statutory Planning Board was also constituted under the chairmanship of the Minister for Works and Housing for the development of the National Capital Region (NCR) around Delhi.

The thrust areas for the Eighth Plan consisted mainly of more effective implementation of the strategies adopted during the Seventh Plan and party in the formulation of new strategies. Some specific thrust areas of Eighth Five Year Plan were as follows :

- Macro strategy for urban development with explicit recognition of rural-urban linkages has to be evolved.
- Particular emphasis will be placed on the development of small and medium towns, which serve as an important link between the village and the large cities.
- To achieve better coordination of various related programmes within the Ministry of Urban Development, the programmes of IDSMT, housing and infrastructural development programmes of HUDCO and employment generation scheme under NRY can be suitably integrated.
- Identification of towns and cities should be made on a selective and priority basis and the investment plan properly coordinated and placed above the threshold level to have the desired impact.
- With regard to the problem of urban poverty and unemployment, the NRY can made more effective by identification of potential and more appropriate activities.
- A decentralized framework of urban Government with necessary participation of local communities and opinion leaders in planning, implementation and monitoring of urban development programmes is prerequisites for the success of urban development strategy.

The major programmes of the Eighth Plan for urban development were as follows :

Integrated Development of Small and Medium Towns (IDSMT) with objectives such as :

1) Generating employment opportunities to reduce the rural-urban and urban-urban migration.
2) Developing growth centers for betterment of rural hinterland adopting a regional approach.
3) Providing infrastructural facilities to support such employment generation activities.
4) Evolving resource-generation schemes for local bodies for meeting the expenditure on operation and maintenance of the infrastructural facilities so created.

Environmental Improvement of Urban Slums (EIUS) : Main objectives were :

1) Assurance of providing tenure rights and
2) Evolving feasible cost recovery mechanism.

Urban Basic Services for the Poor (UBSP)

It is a revised scheme based on the Urban Basic Services Scheme (UBSS) which includes assistance to mentally retarded and handicapped children, rehabilitation of alcoholics and drug addicts and special programmes for street children. It also formed registered societies/co-operative of slum dwellers at the community level.

Nehru Rozgar Yojana (NRY)

Launched in October 1989, it was targeted towards persons living below the poverty line in urban areas (i.e. household with an annual household income of Rs. 11,850 at 1991-92 prices). Within the targeted group, special preference was given to SCs and STs of urban poor. The NRY consists of the following three schemes :

a) The Scheme of Urban-Micro Enterprise (SUME) : It is designed to encourage unemployment and underemployed youths to take up self-employment venture in all urban settlements. It also envisaged that 30% of the beneficiaries should be women.

b) The Scheme of Urban Wage Employment (SUWE) : It is designed to provide employment to the urban poor through the creation of socially and economically useful assets in the low-income neighborhood in towns with a population below one lakh.

c) The Scheme of Housing and Shelter Up gradation (SHASU) : With two components viz. training and subsidy-cum-loan assistance, this scheme aims at providing employment for persons involved in housing and building activities.

Scheme for Educated Unemployed of Employment Generation in Urban Localities (SEEGUL)

In towns with a population above one lakh, it aims to provide self-employment opportunities and training to the educated unemployed (such as Matriculates, ITI diploma holders etc.) for the enhancement of their technical skills.

National Capital Region Planning Board (NCRPB) : Main objectives were :

1) Reducing pressure of population in Delhi.
2) Achieving a balanced and harmonious development of the National Capital Region (NCR).

Urban Mapping and Research and Training (UMRT)

To compile and maintain the requisite data and maps for preparation of development plans of towns, a three tier Urban and Regional Information System was proposed to be created at the national, the state and the local levels.

Urban Transport

In 1988-89, an Urban Transport Consortium Fund was created to assist state governments in taking up feasibility studies for Urban Transport Systems. During the Ninth Plan, the National Commission on Urbanization had provided an assessment of the urban scenario and a long-term perspective. The preparation of state urbanization strategy documents was another important activity during the plan period which aims to provide an insight into the future development needs in terms of new assets required to meet the anticipated demand for urban services. The plan seek to incorporate urban renewal and up gradation requirements in the state urbanization strategy documents so that, if required, these activities may be given special attention in on-going and future programmes relating to water supply, sanitation and waste disposal. The plan would also seek to strengthen the preparation and updating of state urbanization strategy documents with technical assistance where necessary. Within the macro urban agenda, various on-going schemes like the IDSMT, Mega City, UBSP, Slum Development, NRY, PMI-UPED, Urban Mapping and any new schemes that might be introduced to attain the goals of the State macro urban development model.

Conclusion

Historically, urbanization has been the engines of development and will continue to be so well into the foreseeable future. Hence, with more people aspiring to a better life, urban population will continue to grow and also leading serious implications for the urban environment and well-being of people living and working in it. At the same time, a serious effort is needed to reverse the negative consequences of urban growth and urbanization—alienation of people from the natural environment, unsustainable exploitation of natural resources, environmental degradation, social conflicts, tensions etc. Hence urban development develops not only by the visions of policy makers but also must be determined in partnership with citizens. ❐

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FEMINIST DISCOURSE IN SHASHI DESHPANDE'S — THE DARK HOLDS NO TERRORS

Archana Bora*

The term feminism refers to the advocacy of women's right, status and power, in other words it relates to the belief that women should have the same social economic and political rights as men.

Feminism throws a challenge on the age-long tradition of gender differentiation. It attempts to explore and found a new social order to find pertinent resolves to the real life problems in the light of traditionally gendered role-playing. Woman has always been protected as a secondary and inferior human being.

In the west many writers took to writing in favour of the liberation of women. The most significant work concerning the quest for recognition of women's socio-cultural roles and struggles for women's social, cultural and political rights was Mary Wollston Craft's - 'A Vindication of the Rights of Women (1792). In 1929, Virginia Woolf's book 'A Room of One's Own' came to light and was recognized as the most important feminist document. The 1960s witnessed intensification of the feminist struggle in Europe and America. From demonstrative protests on the street against oppression of women, feminism soon entered the academic circles, and became an important subject of literacy debate and discussion.

In Indian English fiction, the voice of protest by woman is found in many forms. Not only women writers like Anita Desai, Nayantara Sahgal, Shashi Despande, Jai Nimbkar, Sobha De, Kamala Markandaya, but male writers like Tagore, Mulk Raj

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Anand, R. K. Narayan, Manohar Malgonkar etc. dwell on the tortured womanhood.

More Indian women novelists have turned towards the woman's world with great introspective intensity and authenticity. They have launched a voyage within to explore the private consciousness of their women characters and to measure them. Among them Shashi Despande has distinguished herself from others in the treatment of the issues of the women.

Shashi Despande insisted over a long period of time on being called simply 'a writer' and not a 'women writer' much less 'feminist writer'. She maintained that she writes about person to person and person to society relationships and insisted that she should not be evaluated by her gender.

However, she has slightly revised her position in the essay ***"Why I am a Feminist"*** (2003) without abandoning her rejection of stereo-typical differentiation and slotting of males and females. She says :

"It took me years to say even to myself, 'I am a feminist'. It was the culmination of a voyage that began within myself and went on to be the ocean of women's place in the world. Today, when I call myself a feminist, I believe that the female of the species has the same right to be born and survive to fulfil herself and shape her life according to her needs and the potential that lies within her as the male has. I believe that nature, when conferring its gifts on humans, did not differentiate between male and female, except for the single purpose of procreation. I believe that motherhood does not bar everything else, but is a bonus, as extra that women are privileged to have."

It may however be noted that the trejectory of feminist concerns that Shashi Despande travels doesn't necessarily correspond to that of the feminist women writers in the West.

Keeping in view, her attitude towards feminism, an attempt has been made here to discuss her novel— 'The Dark Holds No Terrors' in feminist light.

Shashi Deshpande very well portrays modern, educated and career-oriented middle class women, who are sensitive to the changing time and situations. They are equally aware of the social and cultural inequalities to which they are subjected to, and hence they want to rebel against them in their search for freedom and identity, but they ultimately finds themselves against the well-entrenched social inertia. Sarita or Saru, the protagonist in the novel *The Dark Holds No Terror* very boldly confronts reality and realizes that the dark no longer holds any terror for her. Sarita, usually known and recognized as 'Saru' is an ordinary, simple, modest, sensitive, middle-class woman. She wished and hoped and always longed to break away from the rigid traditional norms. She yearns for a new environment where, the mother cannot thrust her will on her daughter. The unhealthy experiences at her parental home, helps her discovering the hidden, reserved strength in human being which at times leaps up to help the individual by shaping life into a pleasurable and a possible one.

The novelist, Shashi Deshpande narrates the story in the flash back technique sequence. The story is of a marriage on the rocks. Sarita is a successful doctor during the daytime; and at night a terrified and trapped animal in the hands of her husband, Manohar who is an English teacher in a small college.

Sarita, the protagonist grows up a victim of her mother's gender bias. As a child, she is aware of her mother's preference for her brother, although she does not comprehend it fully then, except the experience of hurt. Returning to her parental home as an adult, Sarita recalls various incidents that emphasize the difference in the upbringing of her brother and herself. As an educated woman and feminist, she now rewrites her childhood with an awareness of gender injustice. She recalls that :

"There was always a puja on Dhruva's birthday. A festive lunch in the afternoon and an aarti in the evening. My birthdays were almost the same ..... but there was no puja."

It is obvious that Sarita's birthday, does not rate a puja, because she is a girl. After Dhruva's death there were no celebrations in the family because she was only a girl.

In another incident, Sarita remembers the constant reminders a girl gets about her destiny to get married and leave home :

"Don't go out into the sun you will get even darker."

"Who cares?"

"We have to care even if you don't. We have to get you married."

"I don't want to get married."

"Will you live with us all your life?"

"Why not?"

"You can't."

"And Dhruba?"

The conversation reveals a mothers anxiety in getting her daughter married, which is regarded in the patriarchal society as the sole purpose of a woman's life. In the emphasis on a fair complexion that must not grow dark and an appearance that should remain attractive (because men like it so), lies a concrete example of de Beauvoir's observation that a woman is defined with reference to man. Simone de Beauvoir, a noted western Feminist has made a classic observation that a woman is defined and differentiated with reference to a man, and not a man with reference to woman. Again this can be seen from another angle. While the racism in India operates differently from the colour prejudice in First world countries, there is still an obsession with 'fair complexion' in Indian society, especially as applied to marriageable women. Any number of examples of the desire for light-skinned women can be found in the matrimonial advertisements published in Indian newspapers.

However, Sarita as a young woman remembers those bitter things about her childhood. Sarita still remembers her mother's bitter words uttered when as a little girl she was unable to save her younger brother from drowning.

Sarita develops an attitude of defiance against her mother's preaching about the duty of a girl and in her childhood felt an

intense desire to rise above the common women and to become superior to them despite being a dark-complexioned, average-looking girl. She wants to prove to society and to her mother that she is no less than a male child.

After overcoming all impediments, Sarita achieved her goal and became a doctor. Later when she was still on apprenticeship, she was enticed by a handsome poet and actor and got married to him despite her mother's disapproval. After marriage she never visited her mother, who died without seeing her. Her marriage did not prove to be a happy one. The wounded male-ego of her husband, Manohar, ruined their married life. Sarita was living happily with her husband until a journalist came to interview both of them and startled them by asking the bold question to him : "How do you feel when you realize that your wife is earning not only the butter but most of the bread for the family." That was the beginning of his inferiority complex. He started inflicting torture on her and turned into a sexual sadist. When the situation became unbearable she returned to her father's place ostensibly to take care of her father, bereft of his wife. Having suffered a lot, the over-sensitive girl Sarita, became guilt-conscious that she had wronged her mother. It is after her father assured that there was nothing wrong in taking decision in matters of her life on her own, that the scorching guilt of hers was relieved and she realized that "If I have been a puppet it is because I made myself one". For the emancipation she will have to disentangle herself from the dark shadow of her past. She struggles with the emotions for her children. Sarita gradually realizes that there is more to life than dependency on marriage, parents and other such institutions and she resolved to use her new found truths to make a better life for herself. It is implied in the end that Sarita ultimately decides to return to her family with the resolution to make a better life for herself with the help of newly acquired truth. Here Deshpande makes a very pertinent

humane statement. Balance in life is best struck with a humane point of view. No amount of formal education nor an ambitious career can make it. Thus *The Dark Hold No Terrors* is a tremendously powerful portrayal of one woman's fight to survive in a world that offers no easy options.

The Dark Holds No Terrors is a feminist novel not on the lone basis of the female centrality in it. The novel focuses on a woman's awareness of her predicament, her wish to be recognised as a person more than as a woman, and her wanting to have an independent social image. Sarita's feminist reactions date back to her childhood when she had to contend with sexist discrimination at home. However Shashi Deshpande does not glorify woman's suffering. Nor does she take partial stance in favour of her protagonists on the ground that they are female sufferers and martyrs in patriarchy. Through out the novel she maintains commendable objectivity and avoids generalisations and partial views towards women. She objectively observes human relationship particularly man-woman relationship as they are in Indian society. Following extract from the novel exemplifies this :

".....there is something in the male..... that is whittled down and ultimately destroyed by female domination. It is not so with a female. She can be dominated, she can submit, and yet hold something of herself in reserve. As if there is something in her that prevents erosion and self-destruction. Does the sword of domination become lethal only when a woman holds it over a man?"

Though it is a feminist affirmation of woman's strength, it is also suggestive of the destructive nature of woman. According to Saru, Dhruba becomes "a creature full of terrors" as he is "dominated by two females". The father and Manu are reduced in status by their respective wives.

In the novel, Deshpande shows woman's predicament in a male-dominated society, especially when the woman is not

economically independent. In the novel there is a reference to a woman who, ill-treated by her in-laws, drowns herself in a well. There is reference to yet another woman victim who is tied to a peg by the in-laws and fed in the cattle shed. Saru detests the merciless judgement of her mother—"She perhaps deserved it". The thrust here is not on man's cruelty to woman but woman's cruelty to woman. In the patriarchal society women are trained from the very childhood in such a way through myths, legends etc. so that they themselves become agents of patriarchy and consequently perpetrators of sufferings to women.

Saru has absolutely no respect for the abject acceptance, religiously practised by the wives. The wife of Manu's friend accepts total effacement of her very presence and position. She remains a silent, nameless waiter at the dining table, not even introduced to her guests. Saru feels contempt for her college-day friend, Smita who changes her name to Gitanjali, annihilating her personality and putting on the romantic mask of being a contented wife. Saru condemns them as "silly martyrs" and "idiotic heroine".

The society presented in *The Dark Holds No Terrors* is certainly one going through transitions where at least economically independent women can have choices in life. Saru has tremendous respect for the dignified, self-reliant teacher friend Nalu, who despises all compromises and remains single to lead a meaningful life of convictions. Even among men there is a Padmakar Rao who complains that his wife does not relate to him on equal terms but waits on him and can talk of only middle-class concerns like economising the family budget though she does not need to.

Saru's economic independence leads her to decide on taking the road less travelled by. Though Manu cannot digest the fact that his wife excelled him professionally he does not want that his wife should give up the bread-winner's role,

thinking of the material comforts of the family. But her acceptance of the role as the leading earning member of the family and jealousy of Manu gives her pain and she expresses her anguish through the imaginary advice given by her to the girl's in Nalu's college :

"A wife must always be a few steps behind her husband. If he is an M.A., you should be a B.A. If he is 5′ 4″ tall you shouldn't be more than 5′ 3″ tall. If he is earning Rs. 500, you should never earn more than Rs. 499. That's the only role to follow if you want a happy marriage. Don't try to reverse the doctor-nurse, executive-secretary, principal-teacher role. Women's magazines will tell you that a marriage should be an equal partnership. That's nonsense. Rubbish. No partnership can ever be equal. It will always be unequal, but take care that it's unequal in favour of your husband. If the scales tilt in your favour, God help you, both of you. And so you must pretend that you're not as smart as you really are, not as competent as you are, not as rational as you are, and not as strong either. You can nag, complain, henpeck, whine, moan but you can never be strong. That's a wrong which will never be forgiven."

Saru acknowledges this as the way of the world, perhaps leading to domestic bliss in the traditional sense of the term, but she herself decides not to take this road. Besides, the deep ironic touch of Despande regarding the role of a wife in a patriarchal marriage set-up is lucidly presented.

Though Saru's sufferings is like that of the other women in the novel yet she is different from them. The other women bears the suffering with resignation but she gathers strength not to surrender, not to run away from the problems, not to commit suicide, not to be behind the symbolic purdah or veil and in a word, not to accept 'defeat'. Instead she accepts the challenge so as to prove herself a good daughter, a good wife, a good mother, a good doctor and a good human being.

The strength of the novel is in the involvement of the author with the subject. She comes out of the veil and presents a fair picture of a woman's life that faces problems, because of her marriage-against her parent's wishes and the male-ego possessed by her husband. She gifts her protagonist with a double vision, as Sarita is critical of herself as of others. It is the woman's voice that is presented without any trace of sentimentalizing or over dramatizing a woman's problems. The author is very much objective in presenting the characters and situations.

The novelist powerfully brings out the psychological problem of a career woman and discusses it artistically without crossing the barriers of art. And inspite of the ample examples that place the novel in the class of feminist novel, at certain levels it transcends feminist constraints and raises issues that the human beings in general, encounter in their lives.

The message of the novel is that the fear of losing oneself in the darkness of this mysterious world is dispelled, if a woman understands that she will have no refuge in any relationship unless she believes in her own self and accepts the responsibilities of her own life. □

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ACCOUNTING IN COMPUTERISED ENVIRONMENT

Bijoy Kalita*

Introduction

In business numerous transactions take place everyday. It is not possible for a businessman to remember various transactions for a long period. Hence the need to record them. The recording of business transactions is the main function servers by Accounting. Accounting is a systematic exercise carried on for the purpose of recording, classifying, summarizing and interpreting the results for the users of the information. With the help of accounting records the businessman is able to ascertain the profit or loss and the financial position of his business at the end of a given period and communicate financial information to various parties interested in the business through various financial statements such as Profit and Loss Account, Balance Sheet, Cash Flow Statements etc. Thus, accounting is a means of collecting, summarising, analysing and reporting of information of the business. Accounting is necessary not only for business organisations but for non-business organisations like school, college, hospital, club etc.

Earlier, accounts were maintained manually. But, now-a-days, accounts are maintained in the computer by the most of the business organisations.

Manual Accounting System :

In manual accounting, accounting records are hand written. First of all transactions are recorded in journal or in

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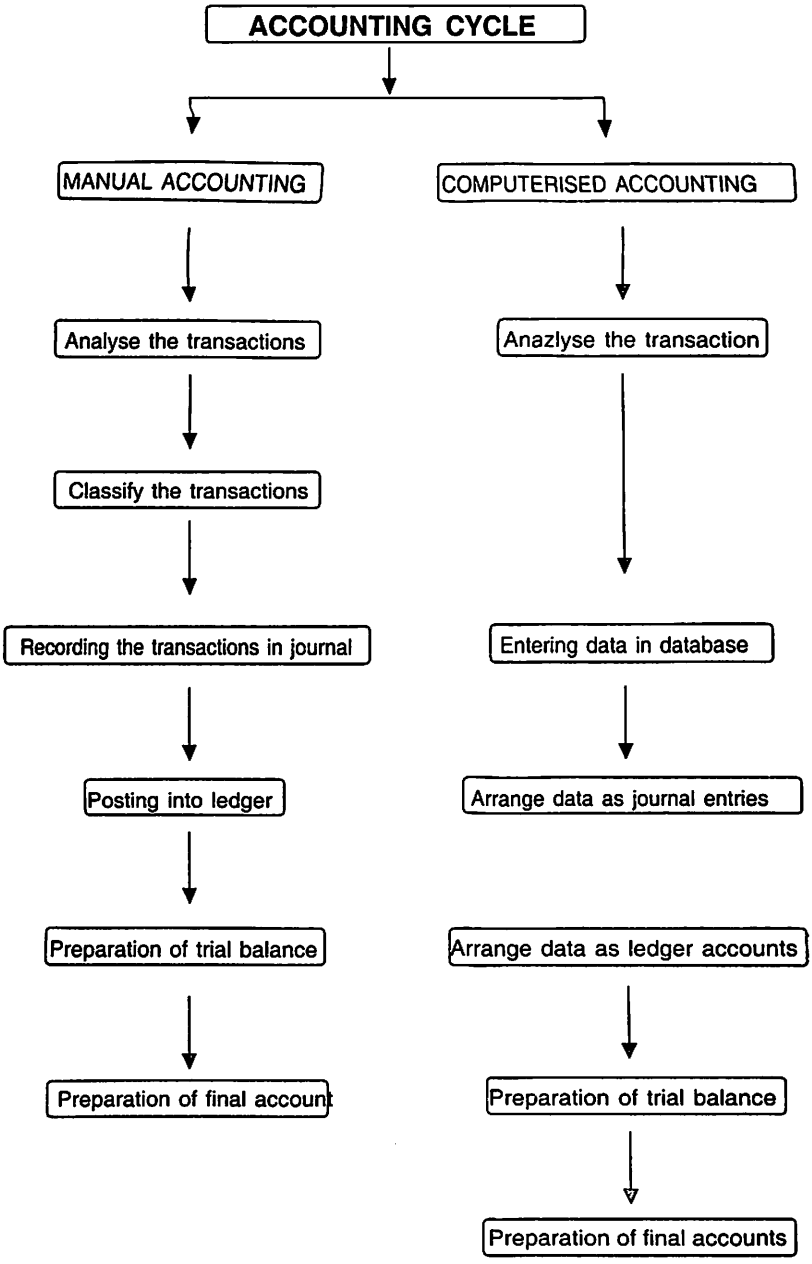
subsidiary books or in cash book, then posting are made into respective ledger. Closing balance of ledgers are derived to form a trial balance and then final accounts (i.e. Profit and Loss Account and Balance Sheet) are prepared. In the next year, again all the ledgers are created afresh and opening balances are brought forwarded. This process of accounting is followed regularly whole of the accounting year. Thus, manual accounting is a monotonous job.

Computerised Accounting System

In computerised accounting, all the ledgers are created and opening balances are entered only at the time of starting of accounting. There after, during the whole of the year, financial transactions are entered in different types of vouchers. Only voucher entries are needed to be entered by the user and remaining processes like posting into ledger, preparation of trial balance and final accounts and preparation of various reports useful for management is done automatically by the computer itself. Thus, in computerised accounting accounts are always open and any addition and modification took place in accounting books are recorded and reflected instantly.

In a computerised accounting system, transactions usually are entered into a database, instead of a journal. A database is a warehouse of information stored within computer only once so that it can be used for different purposes. Once data is entered in the database, the computer can arrange these data into any desired format, such as journal entries ledger accounts and financial statements.

The steps in manual and computerised accounting system are summarised below :


ACCOUNTING CYCLE
MANUAL ACCOUNTING
COMPUTERISED ACCOUNTING
Analyse the transactions
Anazlyse the transaction
Classify the transactions
Recording the transactions in journal
Entering data in database
Posting into ledger
Arrange data as journal entries
Preparation of trial balance
Arrange data as ledger accounts
Preparation of final account
Preparation of trial balance
Preparation of final accounts

Importance of Computerised Accounting

Today, application of computer in business is increasing and most of the organisations are introducing computerised accounting. Every type of information required by a business can be processed by the computer. The following aspects which relate with financial accounting can be discussed under computerised environment :

In large business organisation, numerous transactions take place everyday. These transactions are entered into the computer by the data entry operator. Transactions are sorted out by the computer and respective accounts are debited/credited through the computer. The computer itself balances the accounts.

Every business has to maintain the optimum level of stock. The inventory control system maintain a file with party number, name, quantity of stock, a level of stock at which the firm orders for fresh quantities and supplier's address. This file is the Inventory Master.

When an item is issued, the inventory update program updates the Inventory Master reducing the stock by the quantity issued. If the resultant stock falls below the reorder level, the inventory control program prints out an order to the supplier. When the supplier supplies the item, the inventory control program updates the stock on hand. The Inventory Control System keeps track of the purchases and issues, so that; the firm can easily know the usage of these items over a period of time.

The preparation of salary sheet of all the employees of a large organisation can not be done timely without the aid of the computer. To prepare the payroll of the employees, the details regarding Employees name, Employees number, Basic pay, Allowances, Deductions (Income-tax, Provident fund etc.) are required. Such particulars are being used every month. So they are stored in the Master file on the basis of which the database is developed.

All the details stored in the database, few items need to be changed such as change in the employee's pay or increment etc, and such items are updated using the master update module of the payroll system. The computer reads details from the Master file and calculate net pay. The program also prints out pay slip for each employee to hand over to him. A pay slip shows the employees name, number, basic pay, various allowances, various deductions and net pay. The payroll system also generates a number of statements like P. F. statement, Income-Tax statement etc.

Accounting for Accounts Receivables

Computers are helpful in monitoring the accounts like Bills Receivable. They give summary of such receivables and warning signals so that these accounts are realised well in time. Computer can also produce reminders so that they may be sent to the debtors.

Tax Accounting

Tax liabilities of the business can be ascertained easily with the help of computerised accounting system.

Benefits of Computerised Accounting

The main advantages of computerised accounting are listed below :

Speed

It is well known fact that computers are wonderfully fast in working. The processing of data takes place in a few minutes. Millions of instructions are processed electronically in no time.

Accuracy

The processed data is highly accurate Computer do not make mistakes. If input is accurate, no doubt, the output will also be accurate.

Storage Capacity

Computer have very large storage capacity. The computer can store large amount of data and information.

Cost Reduction

The installation costs of computers are, however, high but in the long run these costs are covered by effective computerised record keeping, paperless working, speed, accuracy etc.

Diligence

Computers being machines, do not suffer from fatigue and lack of concentration. The computer can work for several hours together and can perform limitless calculations with same speed and accuracy.

Accounting Software

To maintain the accounts electronically, hundreds of Accounting Programs have been developed by various companies. Though hundreds of accounting programs are available, in practice Tally and Wings are widely used by most of the organisations. A brief description of Tally is given below.

Tally

Tally is one of the most popular accounting programs. The latest version of Tally is Tally-9. Tally provides a complete solution to manage accounts and inventory. Various features, services, technologies and the power of simplicity, flexibility and speed have made Tally the most popular business solution in India and abroad. Some of the Accounting Features of Tally are given below :

Complete Book-keeping

Tally provides the complete range of book-keeping facilities. It records all types of transactions including Receipts, Payments, Income and Expenses, Sale and Purchases etc.

Comprehensive Accounting

Tally provides the facility to obtain the Balance Sheets, Profit and Loss Account Cash and Fund Flow statements, Trial Balance and others instantly.

Value Added Tax Handling

It offers facilities to handle VAT system.

Comprehensive Recording of Stock Movement

By using the inventory voucher forms, all sorts of inventory transaction can be recorded that makes inventory recording very easy and comprehensive. All stock movements are fully recorded and maintained in stock Register.

Conclusion

Accounting is considered as the language of business. It provides various financial information to the users and management. All the information are to be communicated to the users timely and accurately. This is possible only through the computerised Accounting. Therefore, every business organisation should make the use of computer for the maintenance of accounting. ❐

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ARTIFICIAL INTELLIGENCE AND ITS APPLICATION

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Computation is the fire in our modern-day caves. Today in order to stay competitive, industries around the world demand higher productivity. This can be realized in one of the following two ways, one is to reduce its operating cost while it maintains its present output and the other is to increase its output while maintaining its current cost of production. Industries also need to improve its product's performance and reliability and at the same time it needs to reduce cycle time due to the more unreliable market demands in recent years. It can be observed that the industries that have such capabilities can withstand better during economic downturns. It is a fact that the use of new and better technologies provides such industries to improve its productivity, enhance products performance and reduces cycle time. One such technology is artificial intelligence where tools such as expert systems, neural networks, fuzzy logic, etc. have such capability to provide better solutions to many demanding and complex problems

Introduction

Artificial Intelligence(AI) is a branch of Science which deals with helping machines find solutions to complex problems in a more human-like fashion. This generally involves borrowing characteristics from human intelligence, and applying them as algorithms in a computer friendly way. A more or less flexible or efficient approach can be taken depending on the requirements established, which influences how artificial the intelligent behaviour appears.

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by the same pair which developed the Logic Theorist. The GPS was an extension of Wiener's feedback principle, and was capable of solving to a greater extent common sense problems. A couple of years after the GPS, IBM contracted a team to research on artificial intelligence.

AI is generally associated with Computer Science, but it has many important links with other fields such as Maths, Psychology, Cognition, Biology and Philosophy, among many others. The ability to combine knowledge from all these fields will ultimately benefit the progress in the quest of creating an intelligent artificial being. A machine's system of decision-making, created or not by human beings, that demonstrates certain intelligence, at least apparently, has the characteristics of a vital impulse system.

Computers are fundamentally well suited to performing mechanical computations, using fixed programmed rules. This allows artificial machines to perform simple monotonous tasks efficiently and reliably, which humans are ill-suited to. For more complex problems, things get more difficult... Unlike humans, computers have trouble understanding specific situations, and adapting to new situations. Artificial Intelligence aims to improve machine behaviour in tackling such complex tasks. Artificial Intelligence (AI) is the area of computer science focusing on creating machines that can engage on behaviors that humans consider intelligent.

AI and its Application

The applications of Artificial Intelligence are abundant and widespread, especially in developed and developing countries. In fact, Artificial Intelligence has become such a mainstay in today's world that it is taken for granted by the majority of people who benefit from its efficiency. Air conditioners, cameras, video games, medical equipments, traffic lights, refrigerators: all function by way of developments in "smart"

technology or fuzzy logic. Large financial and insurance institutions rely heavily on Artificial Intelligence to process the huge quantities of information that are fundamental to their business practices. The application of computer speech recognition, though more limited in utilization and practical convenience, has made it possible to interact with computers by using speech instead of writing. Robotics, the study and development of robots, is another common application whose end goal can be anything from entertainment (such as robot pets), to research (such as Mars rovers), to safety (such as fire detection and extinguishment). Natural language processing, a subfield of Artificial Intelligence, provides computers with the understanding they require to handle information being encoded by humans. Computer vision instructs computers on how to comprehend images and scenes. It has as some of its goals: image recognition, image tracking and image mapping. This application is valued in the fields of medicine, security, surveillance, military operations, even movie-making.

Business Encyclopedia : Artificial Intelligence

Computer systems are becoming commonplace; indeed, they are almost ubiquitous. The functioning of most business, governmental, military, environmental, and health-care organizations. They are also a part of many educational and training programs. But these computer systems, while increasingly affecting our lives, are rigid, complex and incapable of rapid change. To help us and our organizations cope with the unpredictable eventualities of an ever-more volatile world, these systems need capabilities that will enable them to adapt readily to change. They need to be intelligent. The national competitiveness depends increasingly on capacities for accessing, processing, and analyzing information. The computer systems used for such purposes must also be intelligent. Health-care providers require easy access to information systems so they can track health-care delivery and

identify the most recent and effective medical treatments for their patients' conditions. Educators need systems that adapt to a student's individual needs and abilities. Businesses require flexible manufacturing and software design aids to maintain their leadership position in information technology, and to regain it in manufacturing. (Grosz and Davis, 1994)

Real Estate Dictionary : Artificial Intelligence

The ability of a computer program to evaluate information and make decisions according to pre-established criteria. This ability is exploited in such applications as Automated Mortgage Underwriting. Example : Excell Mortgage Company, using *artificial intelligence,* can pre-approve a large volume of mortgage applications in a short period of time. The process is totally computerized and takes applications through use of an Internet site. The computer can interact with applicants and solicit information as required for the underwriting process.

Accounting Dictionary : Artificial Intelligence

Umbrella terminology for several main categories of research. They include natural language systems, visual and voice recognition systems, robotic systems, and Expert Systems. Artificial intelligence generally is the attempt to build machines that think, as well as the study of mental faculties through the use of computational models. A reasoning process is involved with self-correction. Significant data are evaluated and relevant relationships, such as the determination of a warranty reserve, are uncovered. The computer learns which kind of answers are reasonable and which are not. Artificial intelligence performs complicated strategies that compute the best or worst way to achieve a task or avoid an undesirable result. An example of an application is in tax planning involving tax shelter options that gives the client's financial position.

Languages and Environments for AI

Natural Language Technology deals with tools and techniques for processing natural language on a computer. This has immense applicability in several areas — for example, intelligent word processing aids such as grammar checkers, web search engines and information filtering agents, natural language interfaces, and translation tools. This field combines ideas from Natural Language Processing and Information Retrieval to handle the increasing amount of multilingual natural language information available online, particularly with the explosion of the Internet, and will be an increasingly important technology in the future.

Some of the most important by-products of artificial intelligence research have been advanced in programming languages and software development environments. For a number of reasons, including the size of many AI application programs, the importance of a prototyping methodology, the tendency of search algorithms to generate huge spaces, and the difficulty of predicting the behavior of driven programs, AI programmers have been forced to develop a powerful set of programming methodologies.

Programming environments include knowledge-structuring techniques such as object-oriented programming, High-level languages, such as LISP and PROLOG (Part VI), which support modular development, help manage program size and complexity.

Conclusion

To conclude, AI is a young field and faces many complexities. Artificial intelligence is already very much a part of everyday life in industrialized and developing nations. AI is helping people in every field making better use of information to work smarter, not harder. AI has always been on the pioneering end of computer science. Advanced-level computer

languages, as well as computer interfaces and word-processors owe their existence to the research into artificial intelligence. The theory and insights brought about by AI research will set the trend in the future of computing. The products available today are only bits and pieces of what are soon to follow, but they are a movement towards the future of artificial intelligence. The advancements in the quest for artificial intelligence have, and will continue to affect our jobs, our education, and our lives. ❐

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HISTORY OF MATHEMATICS

Jayashree Pathak*

Introduction

We are all taught Mathematics, but few if any, know where it came from. This is a journey into the world of Mathematics to seek out its roots and heritage. This is a journey of ancient Mathematicians and prehistoric philosophers. This is a journey of failures and successes. Here we will learn of our ancestors and predict our future.

Evolution of Mathematics

The word "mathematics" (Greek : *mathçmatiká*) comes from the Greek (*máthçma*), which means *learning*. The word is shortened to *math* in North American English, while it is *maths* elsewhere (including Britain, Ireland, Australia and other non-North American Commonwealth countries).

The evolution of mathematics might be seen as an ever-increasing series of abstractions, or alternatively an expansion of subject matter. The first abstraction was probably that of numbers. The realization that two apples and two oranges have something in common was a breakthrough in human thought. In addition to recognizing how to count *physical* objects, prehistoric peoples also recognized how to count *abstract* quantities, like time—days, seasons, years. Arithmetic (addition, subtraction, multiplication and division), naturally followed.

Further steps need writing or some other system for recording numbers such as tallies or the knotted strings called **quipu** used by the Inca empire to store numerical data. Numeral systems have been many and diverse.

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From the beginnings of recorded history, the major disciplines within mathematics arose out of the need to do calculations relating to taxation and commerce, to understand the relationships among numbers, to measure land, and to predict astronomical events.

Every culture on earth has developed some mathematics. In some cases, this mathematics has spread from one culture to another. Now there is one predominant international mathematics, and this mathematics has quite a history. It has roots in ancient Egypt and Babylonia, and then grew rapidly in ancient Greece. Mathematics written in ancient Greek was translated into Arabic. About the same time some mathematics of India was translated into Arabic. Later some of this mathematics was translated into Latin and became the mathematics of Western Europe. Over a period of several hundred years, it became the mathematics of the world.

There are other places in the world that developed significant mathematics, such as China, southern India, and Japan.

The basic chronology of the history of mathematics was very simple; it had primarily been the invention of the ancient Greeks, whose work had continued up to the middle of the first millenium A.D. Following which there was a period of almost 1000 years where no work of significance was carried out until the European renaissance, which coincided with the 'reawakening' of learning and culture in Europe following the so called dark ages.

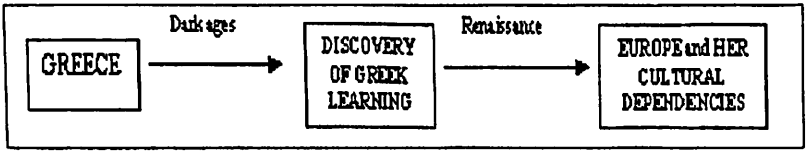


Figure 1 : Eurocentric chronology of mathematics history.

Some historians made some concessions, by acknowledging the work of Egyptian, Babylonian, Indian and Arabic mathematicians (and occasionally the work of the Far East and China). Modified versions of the Eurocentric model commonly took the form seen below.

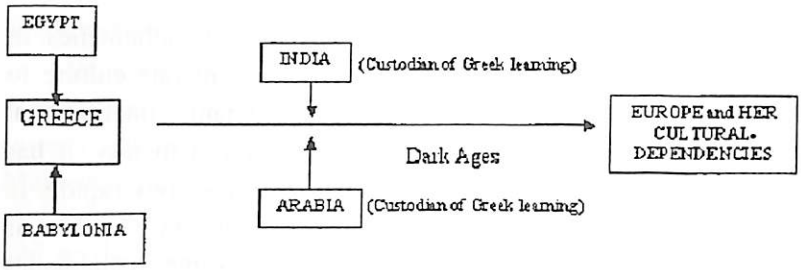


Figure 2.2 : Modified Eurocentric model.

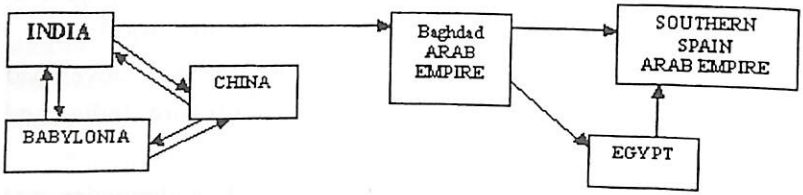
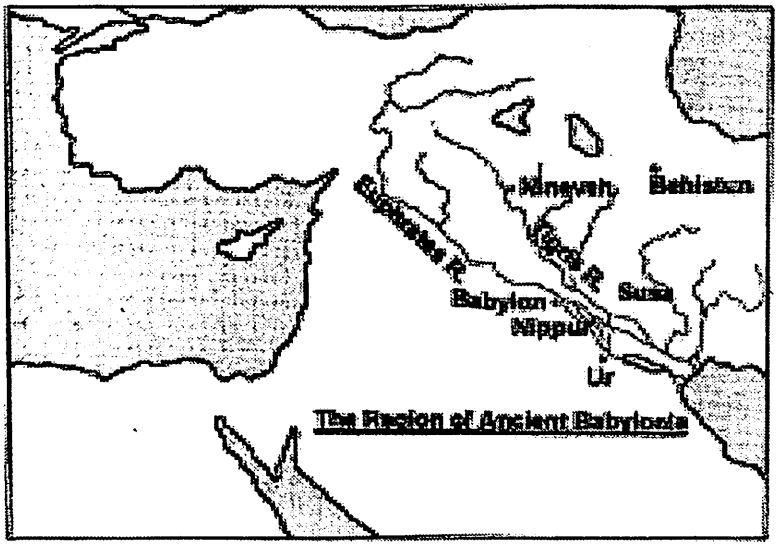


Figure 2.3 : Non-European mathematics during the dark ages.

Babylonian Maths

The Babylonian system of writing was called cuneiform and was based on a series of straight lined symbols. These symbols were wet and baked in the hot sun to preserve. Curved lines could not be drawn. These cuneiform symbols led to many tables used to aid calculation. They used a base 60 system, which has ten proper divisors, instead of our current system, base 10 with only two proper divisors. In this respect, their system may have been more advanced since many more numbers have a finite form. Two examples of these tables are the tables found at Senkerah on the Euphrates River in 1854, which date from 2000

BC. This table was used to figure the squares of numbers to 59 and cubes of numbers up to 32. However, a drawback of this system is the lack of a proper 0. Also, context was required to determine if 1 meant 1, 61, or 361, etc.

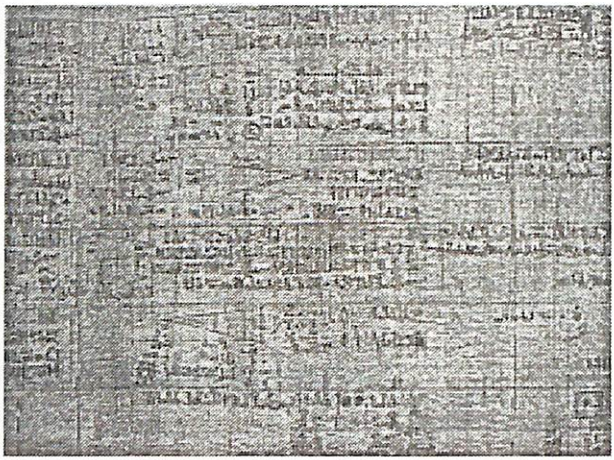


Oriental Maths

The ancient four civilizations until 2000 B.C. along the Nile in Africa, the Tigris and Euphrates in western Asia, the Indus and the Ganges in south-central Asia, the Hwang Ho and the Yangtze in eastern Asia contributed to some extent to early mathematics. The major economic activities of the ancient nations were to manage their farmlands and to control their products. Thus, early mathematics can be said to have originated in certain areas of the ancient Orient (the world east of Greece) primarily as a practical science to assist in agriculture, engineering, and business pursuits that is the initial emphasis of the early mathematics was on practical arithmetic and measuration.Algebra ultimately evolved from arithmetic and the beginnings of theoretical geometry grew out of measuration.

Egyptian Mathematics

Using a kind of reed,-papyrus- Egyptians made papers. About 1650 B.C. in 'Ahmes' Papyrus' which was written Ahmes, we can see how to calculate the fraction and the superficial measure of farmland.



Papyrus

The Roman numeral System :

Numeral system was decimal system or quinary, the subtractive principle, in which a symbol for a smaller unit placed before a symbol for a larger unit means the difference of the two units, was used only sparingly in ancient and medieval times.

1	5	10	50	100	500	1000
I	V	X	L	C	D	M

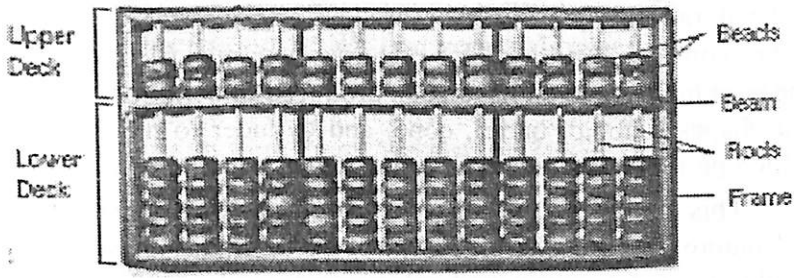
Thus,

1944=MDCCCCXXXXIIII

This way disabled them from calculating multi-digit numbers so they used abacus.

The abacus is a mechanical aid used for counting; it is not a calculator.

The standard abacus can be used to perform addition, subtraction, division and multiplication; it can also be used to extract square-roots and cubic roots.The abacus is typically constructed of various types of hardwoods and comes in varying sizes. The frame of the abacus has a series of vertical *rods* on which a number of wooden *beads* are allowed to slide freely. A horizontal *beam* separates the frame into two sections, known as the *upper deck* and the *lower deck.*



Abacus Parts : The various parts of the abacus are identified here: the frame, the beam, the beads and rods and the upper and lower decks.

The Abacus Today

The abacus is still in use today by shopkeepers in Asia and "Chinatowns" in North America. The use of the abacus is still taught in Asian schools, and some few schools in the West. Blind children are taught to use the abacus where their sighted counterparts would be taught to use paper and pencil to perform calculations.

One particular use for the abacus is teaching children simple mathematics and especially multiplication; the abacus is an excellent substitute for rote memorization of multiplication tables, a particularily detestable task for young children. The abacus is also an excellent tool for teaching other base numbering systems since it easily adapts itself to any base.

Indus Civilization

The first appearance of evidence of the use of mathematics in the Indian subcontinent was in the Indus valley and dates back to at least 3000 BC. Excavations at Mohenjodaro and Harrapa, and the surrounding area of the Indus River, have uncovered much evidence of the use of basic mathematics. The maths used by this early Harrapan civilisation was very much for practical means, and was primarily concerned with weights, measuring scales and a surprisingly advanced 'brick technology', (which utilised ratios). The ratio for brick dimensions 4:2:1 is even today considered optimal for effective bonding. Also, many of the weights uncovered have been produced in definite geometrical shapes (cuboid, barrel, cone, and cylinder to name a few) which present knowledge of basic geometry, including the circle.

This culture also produced artistic designs of a mathematical nature and there is evidence on carvings that these people could draw concentric and intersecting circles and triangles, leading S Sinha to state:

...The civilisation and culture of the inhabitants of the Indus valley...were of a very advanced nature. [SS1, P 71]

Further to the use of circles in 'decorative' design there is indication of the use of bullock carts, the wheels of which may have had a metallic band wrapped round the rim. This clearly points to the possession of knowledge of the ratio of the length of the circumference of the circle and its diameter, and thus values of π.

Also of great interest is a remarkably accurate decimal ruler known as the Mohenjodaro ruler. Subdivisions on the ruler have a maximum error of just 0.005 inches and, at a length of 1.32 inches, have been named the Indus inch. Furthermore, a correspondence has been noted between the Indus scale and brick size. Bricks (found in various locations) were found to have dimensions that were integral multiples of the graduations of their respective scales, which suggests advanced mathematical thinking.

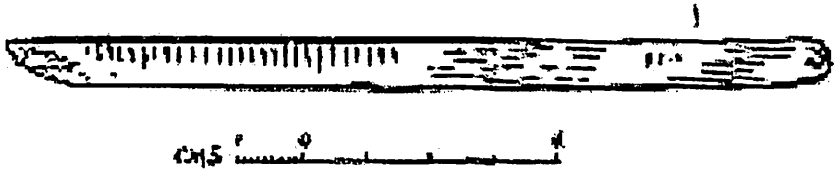


Figure 3.1 : Ruler found at Lothal. [SSr1, P17]

Vedic Period Mathematics

Ganit (Mathematics) has been considered a very important subject since ancient times. We find very elaborate proof of this in **Vedah** (which were compiled around 6000 BC). The concept of division, addition et-cetera was used even that time. Concepts of zero and infinite were there. We also find roots of algebra in Vedah. When Indian Beez Ganit reached Arab, they called it Algebra. Algebra was name of the Arabic book that described Indian concepts. This knowledge reached to Europe from there. And thus ancient Indian Beez Ganit is currently referred to as Algebra.

The book *Vedang jyotish* (written 1000 BC) has mentioned the importance of Ganit as follows- Just as branches of a peacock and jewel-stone of a snake are placed at the highest place of body (forehead), similarly position of Ganit is highest in all the branches of *Vedah* and *Shastras.*

This fact was well known to intellectuals of India that is why they gave special importance to the development of Mathematics, right from the beginning. When this knowledge was negligible in Arab and Europe, India had acquired great achievements.

People from Arab and other countries used to travel to India for commerce. While doing commerce, side by side, they also learnt easy to use calculation methods of India. Through them this knowledge reached to Europe. From time to time many inquisitive foreigners visited India and they delivered this matchless knowledge to their countries. This will not be exaggeration to say that till 12th century India was the World Guru in the area of Mathematics.

The auspicious beginning on Indian Mathematics is in *Aadi Granth* (ancient/eternal book) Rigved. The history of Indian Mathematics can be divided into 5 parts, as following.

1. Ancient Time (Before 500 BC)
   a) Vedic Time (1000 BC-At least 6000 BC)
   b) Later Vedic Time (1000 BC-500BC)
2. Pre Middle Time (500 BC- 400 AD)
3. Middle Time or Golden Age (400 AD - 1200 AD)
4. Later Middle Time (1200 AD - 1800 AD)
5. Current Time (After 1800 AD)

1. Ancient Time (Before 500 BC)

During this time different branches of Mathematics, such as Numerical Mathematics; Algebra; Geometrical Mathematics, were properly and strongly established.

1. a) Vedic Time (1000 BC-At least 6000 BC)

Numerals and decimals are cleanly mentioned in Vedah (Compiled at lease 6000 BC). In this age the discovery of ZERO and "10th place value method"(writing number based on 10) is great contribution to world by India in the arena of Mathematics.

If "zero" and "10 based numbers" were not discovered, it would not have been possible today to write big numbers. It is not known for certain that who invented "zero" and when. But it has been in use right from the "vedic" time.

"10th place value method" dispersed from India to the Arabian countries. From there it got transferred to Western countries. This is the reason that digits from 1-9 are called "hindsa" by the Arabs. In western countries 0,1,2,3,4,5,6,7,8,9 are called Hindu-Arabic Numerals.

1.b) Later Vedic Time (1000 BC - 500 BC)

1b.1) Shulv and Vedang Jyotish Time

Vedi was very important while performing rituals. On the top of "Vedi" different type of *geomit* (geometry : this word is

derived from a Sanskrit word) were made. To measure those geometry properly, "geometrical mathematics" was developed. That knowledge was available in form of *Shulv Sutras* (Shulv Formulae). *Shulv* means rope. This rope was used in measuring geometry while making *vedis*.

While Geometric Mathematics was developed for making *Vedi* in *Yagya*, in parallel there was a need to find appropriate timing for *Yagya*. This need led to development of *Geotish Shastra* (Astrology) In *Geotish Shastra* (Astrology) they calculated time, position and motion of stars. By reading the book *Vedanga Jyotish* (At least 1000 BC) we find that astrologers knew about addition, multiplication, subtraction, etc.

1b.2) Surya Pragyapti Time

Elaborate descriptions of Mathematics were found in the *Jain* literature. In fact the clarity and elaboration by which Mathematics is described in Jain literature, indicates the tendency of Jain philosophy to convey the knowledge to the language and level of common people. *Surya Pragyapti* and *Chandra Pragyapti* (At least 500 BC) are two famous scriptures of Jain branch of Ancient India. These describe the use of Mathematics.

Buddha literature has also given due importance to Mathematics. They have divided Mathematics under two categories- 1) *Garna* (Simple Mathematics) and 2) *Sankhyan* (Higher Mathematics). They have described numbers under three categories-1) *Sankheya* (countable), 2) *Asankheya* (uncountable) and 3) *Anant* (infinite). Which clearly indicates that Indian Intellectuals knew "infinite number" very well.

2. Pre Middle Time (500 BC- 400 AD)

This is unfortunate that except for the few pages of the books *Vaychali Ganit, Surya Siddhanta and Ganita Anoyog* of this time, rest of the writings of this time were lost. From the remainder pages of this time and the literature of Aryabhatt, Brahamgupt etc. of Middle Time, it can be concluded that during this time Mathematics underwent sufficient development.

Roots of the Modern Trignometry lie in the book titled *Surya Siddhanta.* Trigonometry is an area of mathematics used for determining geometric quantities. Its name, first published in 1595 by B. Pitiscus, means "the study of trigons (triangles)" in Latin. Sine first appeared in the work of Aryabhata. He used the word jya for sine. He also published the first sine tables. Brahmagupta, in 628 A.D. published a table of sines for any angle. Jya became jiba in translation and jiba became jaib in later writings. Jaib means fold in Arabic. This was translated into sinus, or fold in Latin. "Sinus" became "Sine" later on.

This is worth mentioning that *Trikonmiti* word is pure Indian and with the time it changed to Trignometry. Indians used Trignometry in deciding the position, motion et-cetera of the spatial planets.

During this time the expansion of *Beezganit* (When this knowledge reached Arab from India it became Algebra) was revolutionary. The roots of Modern Algebra lie in the book *Vaychali Ganit.*

Indians developed rules of addition, subtraction, multiplication with these signs (+,-, x) which was the contribution of the great mathematician *Brahmgupt* (628 AD

3. Middle Time or Golden Age (400 AD- 1200 AD)

This period is called golden age of Indian Mathematics. During this time great mathematicians like *Aryabhatt, Brahmgupt, Mahaveeracharya and Bhaskaracharya* gave a broad and clear shape to almost all the branches of mathematics which we are using today. He has described, in a very crisp and concise manner, the important fundamental principles of Mathematics only in 332 *Shlokas.* His book is titled *Aryabhattiya.* In the first two sections of *Aryabhattiya,* Mathematics is described. In the last two sections of *Aryabhattiya, Jyotish* (Astrology) is described. He was first to find that the sun is stationary and the earth revolves around it. 1100 years later, this fact was accepted by Coppernix of West in 16th century. Galileo was hanged for accepting this.

4. Current Period (from 1800 AD) Ramanujan (1889 AD)

Srinivasa Ramanujan

(Dec. 22, 1887— April 26, 1920)

Ramanujan is a modern mathematics scholar. He followed the Vedic style of writing mathematical concepts in terms of formulae and then proving it. His intellectuality is proved by the fact it took all mettle of current mathematicians to prove a few out of his total 50 theorems.

Neglect of Indian Maths

Mathematics has long been considered an invention of European scholars, as a result of which the contributions of non-European countries have been severely neglected in histories of mathematics. Worse still, many key mathematical developments have been wrongly attributed to scholars of European origin. This has led to so-called Eurocentrism.

Along with cultural reasons there are no doubt religious reasons for the neglect of Indian mathematics; indeed it was the power of the Christian church that contributed to the stagnation of learning, described as the dark ages, in Europe.

There is an unhealthy air of European superiority, which is potentially quite politically dangerous, and scientifically unproductive.

Conclusion

I conclude with a quote from the scholar G Miller, who commented :

...The history of mathematics is the only one of the sciences to possess a considerable body of perfect and inspiring results which were proved 2000 years ago by the same thought processes as are used today. This history is therefore useful for directing attention to the permanent value of scientific achievements and the great intellectual heritage, which these achievements present, to the world. ❐

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MARKETING OF AGRICULTURAL PRODUCE —A CASE STUDY OF ASSAM STATE AGRICULTURAL MARKETING BOARD

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Introduction

Agriculture is the backbone of Indian economy. In India, the major portion of the total population is living in the rural areas and 70% of our rural population get their livelihood from agriculture. Thus, agriculture plays a very important role in our country and determines prosperity of Indian economy. Again, in Assam more than 70 % of the total population is getting their means of livelihood from agricultural sector. Assam is quite suitable for cultivation of rice which occupies about 70 % of gross cropped area. As per 2001 census, 57.4% of the total workers in Assam are agricultural workers. In recent years, (2005-06) agriculture alone contributed 28.7% to the total domestic product. Therefore, agriculture is a very important segment of the economy.

Income of farmer depends upon (i) the quality of goods that he produces and offers for sale in the market and (ii) the price per unit he gets for the goods sold. In India, unfortunately farm productivity is low and the farmer can thus produce and sell only a small quantity of output in the market. But what is worst is that he does not get any reasonable price of this small produce that he sells. This is because the system of agricultural marketing suffers from a lot of defects such as a)existence of

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unregulated markets where corruption and malpractices are rampant b) long chain of middlemen between the producer (farmers) and the actual consumer which takes away a sizeable part of sale proceeds that should have legitimately gone to the farmers, c)lack of market information among the farmers etc. Unless these defects in marketing system, which all work against the interest of the farmers, are effectively removed, there is not much chance to improve the lot of farming community in general and small farmers in particular. Justice demands that farmers should not be deprived of what legitimately belongs to them and thus fair play in the agricultural markets must be ensured.

Rural markets are very poorly equipped, most of them are uncovered and running without adequate storage, stallage or drainage facilities. In addition, the road linking most of those markets to towns and wholesale markets are so poor often only a bullock cart can travel on them and that too only with considerable difficulty. Some markets lack roads completely. Hardly any of these markets have any facilities for market intelligences. Farmers who have relatively large surpluses do not find the price difference much for going to the wholesale market worthwhile. Poor marketing services can be described here with an example..

The vegetables are produced in a large scale manner in char areas of Barpeta district but due to the well structured transport network as well as other marketing facilities the products are sold at a very low price; some of the products are destroyed by the producer which brings nothing to them. However it has been learnt that there have been some chances in the development of market infrastructure facilities due to various schemes of construction of rural go downs, sheds, cold storage for perishable produces, etc. but such provision of market infrastructure facilities have not been well integrated with the other marketing services with the help of which producers can dispose off their produce efficiently and gain

remunerative prices. Therefore, agricultural marketing is one of the manifold problems, which have direct bearing upon the prosperity of the cultivators. Again, there is no systematic plan to solve the agricultural marketing problems in the state of Assam. A micro level study on agricultural marketing covering the whole state of Assam is significant to the solution of problems faced in the marketing of agricultural produces. Such study will be helpful in promotion of agriculture by the govt. planners and business houses dealing in the concerned products. It is an earnest attempt to study various problems of marketing faced by the agriculturist as well as different agencies and consumers all over the state of Assam. This is the purview of researcher's discussion.

The govt. of India has now formulated a scheme of assistance for the development of the regulated markets in agricultural commodities in various states. Regulation of market or market practices is now done under the Agricultural Produce Market Act. The Directorate of Marketing and Inspection renders the necessary guidelines and assistance to states in forming market legislation and its enforcement. In Assam, the Assam State Agricultural Marketing Board is only the nodal organization who can look after the development of agricultural marketing infrastructure.The various schemes undertaken by this Board in various times, though encouraging, is not yet fully implemented.

The study ***"Marketing of Agricultural Produce—a Case Study of Assam State Agricultural Marketing Board"*** will help in studying the existing marketing system in Assam and the steps taken by the Assam State Agricultural Marketing Board to improve such system in the State.

About the Assam State Agricultural Marketing Board

The Assam State Agricultural Marketing Board (ASAMB), Guwahati was established in 1976 under section of the Assam

Agricultural Produce Market Act, 1972. The regulated market scheme of agricultural produce –a mechanism to control the prices of agricultural produce so that the farmers can get a remunerative price in a market set up under the scheme with a provision for open auction and storage coupled with the facilities of grading, standardization and packaging, prevalent in other parts of the country.

The board performs the following functions and have the power to do such things, as may be necessary or expedient as per the provision of the Assam Agricultural Produce Market Act for carrying out these functions.

- To coordinate the functioning of the Market Committees including programmes undertaken by such Market Committees for the development of markets and market areas.
- To undertake State level planning of the development of agricultural produce markets.
- To maintain and administer the Marketing Board Fund.
- To give advise to Market Committees in general or any Market Committee in particular with a view to ensuring improvement in functioning thereof.
- To supervise and guide the Market Committees in preparation of plans and estimates of construction programme undertaken by them.
- To make necessary arrangements for propaganda and publicity on matters relating to marketing of agricultural produce.

The Agricultural Marketing Scenario in Assam

Though the farmers of Assam are producing a lot of their farm products, a huge quantity of food items in all these sectors are imported from outside the state. Planners are seized of this situation and new policies and strategies are formulated to make Assam a self reliant State in agriculture. Assam with a

population of 2.67 crore utilizes only 35.1% of its geographical area as net area sown and 43.7% of net area sown is utilized for more than one crop. Horticultural crops constitute 13.6% of total cropped area. 17.3% and 3.4% of the net area sown is chronically flood and drought prone area respectively. 27.6% of gross cropped area have irrigation facility, 83.34% are marginal and small farmers. The percentage of contribution of food grain production of Assam to that of India dwindled from 2.23 %(2002-03) to 1.45 %(2006-07). If we compare the yield per hectare between Assam and that of India it is noticed that only fruits and spices are above that of the national average. It will be evident from the table given below :

Crops	Yield (Kg per hectare) Assam	During 2005-2006 India	Gap (Kg per hectare) Assam vs India
Rice	147	2092	-605
Wheat	1076	2613	-1537
Pulses	533	585	-52
Foodgrains	1414	1709	-295
Oilseeds	472	1000	-528
Jute	1836	2228	-392
Sugarcane	37190	66286	-29095
Fruits	12005	9220	+2785
Vegetables & tubers	13497	15764	-2267
Spices	2475	1844	+631

Source : Souvenir published by ASAMB, dt. 3rd April, 2008.

It has been observed from the table given above that Assam has a surplus only in fruits and spices to export during 2005-06. Therefore, to make it a success, agricultural marketing must examine the status of production, estimated requirement

for consumption and the resultant surplus or deficit. The surplus items are to be exported out of the state and the deficit items are to be imported from other states/countries. In addition to import and export to and from other states, there is a gap of production figures in different districts of the state. The less producing districts are to be fed by more producing district within the state.

The Assam State Agricultural Marketing Board, as constituted under the provision of Assam Agricultural Produce Market Act, 1972, enacted for creating a better environment in agricultural marketing sector so that farmers can get the actual price exploiting such environment, has reviewed the entire marketing setup under the Regulated Market Scheme by providing marketing infrastructures as market facilitator. Accordingly the board has implemented a Five Year plan, chalked out for betterment of entire gamut of agricultural marketing system, in the year 2002 and has already ended in 2007. Apart from establishment of 20 nos. of Principal Market Yards and 204 nos. of Sub-Markets Yards in accordance with the provisions of the Assam Agricultural Produce Market Act traditional lessee dominated markets of wholesale and rural nature were selected to develop during this plan period. Under Technology Mission for development of horticulture in NE States sponsored by the state as per data available for 2005-Govt. of India, 25 nos. of rural markets and 2 nos. of wholesale markets are sanctioned for its development under the scheme in the year 2002-03, now almost completed. Further 100 nos. of markets of the state selected to develop with 200 units of infrastructures like Auction Platform Cattle sheds etc. under the Agricultural Development Fund are ongoing

Regarding rational utilization of infrastructures as provided in the markets under Technology Mission and other schemes it is to be stated here that some of the identified infrastructures such as auction platforms, drying yards as

provided in traditional markets namely Allengmora, Titabar Nagabat, Tinsukia, Silapathar, Harmoti, Sarupathar, Katlichera, Gohpur, Daulasal, Mandia, Laharighat, Sapekhati and Darangiri are already used by farmers and other market functionaries. The auction platforms are in use of assembling, selling and purchasing of agricultural produces. Undoubtedly thus the farmers are getting the facilities to protect their produces either from the inconvenience of sun or rains. But when an auction platform is used for auctioning or when a drying yard is used for drying of produces to get a good quality, the utilization is actually attained to the stage of rationality. But achievement in this of open or secret tender nature, for sale of the produce creates the environment of competitions where producers are in a position to get better price with participation of large number of buyers in the system. The absence of such system in the existing markets of Assam is one of the major factors of getting unreasonable share of price be the producer. The Assam State Agricultural Marketing Board has constituted its efforts to change the market environment of the state in the interest of farmers by introducing the competitive method of sale, by disseminating market intelligence and other market information to the market functionaries, by supervising the grading and standardization activities etc. as a regulatory measures and providing market infrastructure facilities playing the role of facilitator. But to change the existing environment of unconductive nature a co-oriented effort amongst the concerned departments will pave the path of success.

In spite of being various efforts made by ASAMB and other marketing agencies in the state the farmers of Assam are still depriving in getting fair price of their produces due to lack of proper implementation of market regulation and utilization of facilities so provided as aforesaid. Most of the markets are still running either on a congested space without having infrastructure facilities or on the National Highways or State

roads. A large portion of agricultural produce is still selling to the inherent traders in doorstep of respect is very limited due to the presence of mutual negotiation method of sale. It is needless to mention here that a system like auction, either the farmers at a very low price under mutual negotiation method of sale. Again the malpractices made by some middlemen or profit hungry traders are still exists which the ASAMB has completely failed to suppress them. Therefore it is need of an hour to strengthening of the Agricultural Marketing System of the state of Assam for meeting the new challenges emerging out due globalization.

Significance of the Study

Agricultural marketing is one of the manifold problems which have direct bearing upon the prosperity of the cultivators. The agricultural marketing system has been improved to some extent by the government. But Assam which is a landlocked state is lagging far behind in this respect. Most of the farmers of Assam are still using the traditional methods of agricultural marketing which are unprofitable leading to poverty.

Establishment of Assam State Agricultural Marketing Board in Assam has not able to solve the problem of marketing system in Assam. Therefore, to solve this problem a micro level study on agricultural marketing covering the whole state of Assam is significant to the solution of problems faced in the marketing of agricultural produces. Such study will be helpful in promotion of agricultural marketing by the Government planners and business houses dealing in the concerned products.

Objectives of the Study

The Assam State Agricultural Marketing Board is committed towards smooth and orderly development of agricultural marketing in the state. Therefore, the main objective of the study is to understand the functioning of the Assam State Agricultural Marketing Board and its performance. Objectives of the study can be outlined below :

i. To study the functions of the board,
ii. To examine co-ordination of market committees for the development of markets initiated by ASAMB,
iii. To examine the state level planning undertaken by ASAMB,
iv. To study market related information,
v. To evaluate the sources of income of the board and marketing board fund,
vi. To suggest measures for the improvement of the functions.

Hypothesis of the Study

(a) Ho = Agricultural Marketing have been developed due to able guidance made by ASAMB.

H1 = Agricultural Marketing have not developed due to able guidance made by ASAMB.

(b) Ho = Agricultural producers can get remunerative prices of their produces without any organized commodity markets.

H1 = Agricultural producers can not get remunerative prices of their produces without any organized commodity markets.

Research Methodology

Research is not an existing bag of techniques; it is a purposeful investigation, which provides a structure for decision-making. Therefore, a systematic approach is essential in good research. While undergoing the study, it was proposed to gather both primary and secondary information. The primary information was obtained through surveys, questionnaire methods, interviews and discussions. The universe of the study is Assam State Agricultural Marketing Board. All the market committees (both regulated and unregulated) under this board will be approached to collect relevant information for this study. A questionnaire with 20 structured questions will be circulated

among all the members of the Assam State Agricultural Marketing Board. In some cases personal interviews will be conducted to get necessary information. The secondary information will be collected from ASAMB's policy documents, books and journals, publications by ASAMBA, govt. depts. Newspaper reports, agricultural university and its publications.

Findings of the Study

As a result of field visits and studies it was found that the agricultural marketing is not satisfactory in Assam. Few points that are found in this study are given below :

1. It has been observed that the mutual negotiation method of sale is still existing in most of the agricultural markets in Assam. It is needless to mention here that a system like auction, either to open or secret tender nature, for sale of the produce creates the environment of competitions where producers are in a position to get better price with participation of large number of buyers in the system. The absence of such system in the existing markets of Assam is one of the major factors of getting unreasonable shareof price to the producers. Though the ASAMB had adopted a scheme to open auction method of sale in 41 markets in Assam during 2002-07, but such method of sale have been used only in two markets, namely Jorhat(Bokakhat) and Golaghat (Forcating).
2. From the questionnaire response it has been observed that the view of the growers as well as the officials of ASAMB is quite insignificant. The overall response of the growers regarding its performance in agricultural marketing in the state is not satisfactory while the official of the Board shows their positive views on the functioning of the Board. As the officials are always advocating that their performance are fully satisfied as per the govt. policy decision due to the fund constrain, they are not in a position to launch new scheme for the agricultural marketing in Assam.

3. It is found that in spite of having too many regulated markets in Assam established by ASAMB, the farmers are still depriving fromfull advantage of regulated market committees as the market committees are not providing all the facilities in all the regulated market due to the reasons known to them. There are also some corrupt officials who are creating problem which hampered the functioning of the committees.

4. It is found that although the various plans have been taken by the Board for providing 50% (earlier it was 30%) transport subsidy to its growers but it has not yet been followed up as a result of which the economically poor small farmers are facing a serious problem in bringing their produce to the market. The researcher has observed that only one regulated market committee of Assam, i.e., Lanka Regulated Market Committee in Nagaon district have only benefited from this facility.

5. Though the rural godowns, market yards, cold storage etc. have been established by the Board under the regulated market committee at various places in Assam, there are so many areas in Assam that are still to be covered under the network of regulated market committee. Even, some growers are unaware about the regulated market committee established by the Board. The researcher has observed that though the rural godowns, cold storage have been constructed most of them have not yet been opened for growers/traders due to insufficient approach road. For example, though two godowns, one at Joleswar and the other at Krishnai have been established under Gouripur gettingRMC in Goalpara District , due to lack of proper approach road these godowns have not yet opened for growers/ traders. It is also seen in most of the markets that though cold storage, godowns have been constructed for the benefit of the growers but these are using by the middlemen traders only by paying nominal charge.

6. Although 83.87% officials have opined that development of agricultural marketing in Assam have reduced the import of deficit agricultural produces, it is being observed that Assam is still depending on other surplus states for her deficit agricultural produces. For example, we are importing at present Wheat, and its product, Onion, some fruits like apple etc.
7. From the field study it is observed that the producers-sellers are not particularly aware of the advantages of the regulated market, although some of them know of the existence of regulated markets. During the field survey among growers the researcher has observed that the majority of the growers in Assam do not know about the concept, object and functions of regulated market.
8. It is observed that due to inadequate infrastructure facilities most of the percentages of the total products are not brought to the regulated market. Because of the prevailing poor transport facilities.
9. The researcher's field study claims that most of the agriculture markets are located in a place where there are no road linking facilities. Most of the markets places (owned by RMC) are occupying by the army and other public organizations forcefully and illegally as a result some markets are functioning in a place where there are no proper facilities for marketing. Selection and establishment of markets are made politically. Some constructions are done on political pressure in a less important place far from the production centre.
10. There is a vast difference between producer's price and consumer's price due to middlemen's role in marketing. Growers sales goods to dalal, dalal sales again to traders, traders supplies to the wholesaler in the nearby town markets and the wholesaler sales again to the retailer and retailer to consumer. Therefore due to middlemen's role there is a low price to the growers and high price to the consumers. So, middlemen are playing a very important role in the markets.

11. In Assam, most of the markets are under the Panchayat, of which most of them are given on lease to the lessee who in turn collects cess from the growers/traders. The Agricultural Marketing Board also collects cess from the same growers @1%. Therefore a conflict arises between Panchayat and Agricultural Marketing Board at the time of collecting cess.
12. Flood is a recurrent problem in Assam. Every year large areas come under the grip of floods, which cause extensive damage to kharif crops like paddy, etc. Any political efforts for permanent solution to this problem have not yet seen. The flood control department of the state has also done nothing in this respect.

On the basis of the above findings of the study some suggestions have been made to boost up the agricultural marketing in Assam.

Suggestions

1. In the absence of cold storage and soundly structured godowns the degree of wastages and extent of marketing margins have to be lost by the growers of agricultural produces. Again, in the rural area, there is a fixed day of weekly market(we called "Hat") in the week i,e, held every Sunday etc., in this case the growers also face a problem because of the absence of storage facilities where the produces can be stored safely at a nominal charge and sold on the day of market("Hat"). This problem is particularly faced by those sellers who come from distant village where there is inadequacy of transport services. For eliminating these problems and difficulties regulation and control of markets is highly called for perishable products. Safe and scientific godowns and storage facilities need to be constructed and provided both in the villages and urban markets. This will lead to eradicate the unremunerative selling prices of the growers. Therefore, the govt. through ASAMB should take steps for improving the agricultural

marketing system in Assam and also provide adequate transport net work in the remote areas. It is suggested that market committee should arrange produce exchange transaction every day of the week, not once in a week.

2. It is observed that there is a land problem in Assam. Individual agricultural land to a grower is very scattered. A huge plot of agricultural land is very necessary to implement contract farming system, multiple cropping system and application of new technology which is continuing in the state of Maharastra, Gujarat etc. Therefore, by making awareness programme among farmers individual land to a farmer should be grouped on co-operative basis and production should be undertaken by application of the modern technology through contract farming. Though the ASAMB has taken some initiatives for contract farming but it has not yet implemented in the state. So all the parties concerned should take steps for its implementation.

3. The lack of proper transportation from farm gates to the market yard is one of the major bottlenecks in getting remunerative price of produce. Moreover, the cost of transportation is also unbearable for some produces to carry from firm gate to the nearest market. To bear the share of transport cost of the farmers in carrying the specified agricultural produces from farm gate to market the 50% (earlier it was 30%) transport subsidy to the growers declared by the ASAMB through regulated market committees has not yet been followed up. The researcher's field study reveals that at present a transport subsidy is in operation at Hojai under Lanka Regulated Market Committee. Therefore, it is needed to be developed in the near future. The researcher's field study also reveals that many growers in Goalpara District claims more transport subsidy in case of perishable crops.

4. Though the ASAMB has formed growers society in all over the state for taking advantage of the regulated market scheme, the growers societies are very few in numbers(423 numbers at present) as the regulated market committee has not covered all the areas of the state. Therefore, grower's societies are needed to be increased for changing the agricultural marketing in the state along with establishment of the more regulated markets.
5. Though the AAMP Act 1972 has been enforced in Assam since 1977 but due to some other parallel Acts like Assam Panchayat Raj Act, Mahkuma Parisad Act, Food Corporation of India Act, the implementation of the AAMP Act 1972 has been remained dormant. Therefore, govt. will have to give more priority to the AAMP Act 1972 for its full implementation by reducing conflicts among these Acts. The markets in Assam still functioning under the management and control of the Municipalities, Town Committees and Mahkuma Parisad and as a result, operation of and enforcement of regulatory provisions have not become effective. In this case it is suggested that the state government should urgently consider early disposal of the matter of transfer of management and control of traditional markets owned by Panchayat or Local Bodies to the Regulated Market Committees, which may annually pay a fixed amount of compensation to the Panchayat Committees or Local Bodies.
6. There should be available media for giving market information to the growers regularly. As opined by the growers of different marketing areas during the field study , the existing media for market information through Radio, T.V. is not enough and they show different results from actual practice for which they sometimes deprive of getting remunerative price due to lack of available media of market information of prices. That is why it needs to be devel-

oped. The farmers of Assam should be made aware not only about the existence of market information, but also be convinced about the benefits.

7. The farmers of Assam are economically very poor. Some of them are heavily indebted and they sometimes lend money from wholesalers/middlemen in exchange of standing crops before harvesting them in the agricultural field. Ultimately they are bound to supply their produces to those wholesalers/middlemen at a price offered by them. Therefore, in order to develop the growers economically the govt. can advance crops loan to the growers to eliminate the role of the wholesaler or middlemen traders. It is observed that the agricultural marketing board, the only marketing agency in the state has no any banking facilities for providing crops loan to farmers at present. Therefore it is suggested that the state government along with agricultural marketing board should take steps in providing such facilities to the growers.

8. In the village market growers sell their produces to the wholesalers/middlemen traders in huge quantity at lump sum price which is not conducive for the growers, therefore it is suggested that sale of commodities should not be effected without proper weight. The state govt. should look after this matter and should plan with Weights and Measure Wing of Food and Civil Supplies Deptt.

9. Grading of farmers' produce before sale on the basis of well defined grades in a regulated market helps in the proper valuation of his produce which will enable him to claim a price commensurate with the quality offered, thus providing an incentive to improve its quality. It is observed that most of the growers do not bring their produces by making proper grading as a result growers can not claim remunerative prices. Therefore it is suggested that market committee has to make them aware in this regard.

10. There should be a linkage between marketing and production of crops to establish a close relationship between this two. Assam Agricultural Marketing Board should have come forward to enhance the productivity of the growers. This can be done by supplying quality seeds, equipment and cheap credit facilities to the growers.
11. Various awareness programmes among farmers, traders, market committee members should be organized in the marketing areas at regular interval in order to give them messages regarding production of market oriented commodities, make them aware about market information and using of information network, use of modern technology in agriculture , comparison of cost of different type of produces, etc.
12. Open auction method of sale is suitable for the growers for receiving remunerative prices. Therefore existing mutual negotiation method of sale should be stopped and auction method of sale should be encouraged for all agricultural commodities all over the state. Secret tendered method can also be preferred if implemented properly. The ASAMB adopted a scheme during 2002-07 to open auction method of sale in 41 selected markets of which only in two markets namely Jorhat(Borghola) and Golaghat(Forcating) auction method for paddy has been enforced. It is therefore suggested that such type of technique should be used for all the crops as far as practicable.
13. The researcher's field study claims that most of the agriculture markets are located in a place where there are no road linking facilities. Therefore, establishment of markets should be made besides road so that farmers can carry their produces at minimum transport cost without any difficulty.
14. Various training on different subjects like modern technology of agriculture development, marketing, co-operative

etc. can be imparted to the farmers by the market committees. In this way growers can be attracted lace where there are no road linking facilities. to the institution of regulated market. NGO's should come forward to impart training to the farmers very frequently.

15. It has been observed that many traders under regulated markets buys goods at a very low price during the period of falling prices and sales them again during the period of rising prices. This type of trader's activity should be eliminated and market committee should act themselves in such a way that growers can get the reasonable prices. If possible regulated market committee can also buy goods out of their own funds by giving remunerative prices to the growers.

16. The employees of different positions like marketing officers, marketing inspectors etc who are engaged in marketing of agricultural produces do not have job satisfaction. That is why the ASAMB should trend in behavioral aspect and a spirit of helping others should be imbibed in the minds of the different level of officers.

17. Production of rabi crops like pulses, oil seeds etc. having high value and which can be stored for a long time should be increased. Again production of tax crops, i.e., on which cess can be imposed easily should be increased. The State Government in association with Agricultural Marketing Board should take initiative in this regard. It is seen that in spite having less demand in the markets growers of Assam are still producing jute every year on a large scale. Farmers should be aware about the prevailing prices of their produce and then start production of those produce which would pay more remunerative prices.

18. In Assam selection and establishment of markets are made politically. Some construction is done on political pressure in a less important place far from the production centre.

Therefore all the concerned parties should try to contribute something for the economic development of the country.

19. There is a vast difference between producer's price and consumer's price due to middlemen's role in marketing. Growers sales goods to dalal, dalal sales again to traders, traders supplies to the wholesaler in the nearby town markets and the wholesaler sales again to the retailer and retailer to consumer. Therefore due to middlemen's role there is a low price to the growers and high price to the consumers. Now it is suggested that such chain of middlemen's role should be eliminated by implementing proper principles of regulated markets.

20. Flood is a recurrent problem in Assam. Every year large areas come under the grip of floods, which cause extensive damage to kharif crops like paddy, etc. Steps must be taken by the State as well as central government to control the Flood, Draught problem in Assam. A master plan should be prepared by the respective authority of the state government and insist the central government for its implementation. For this a concreted effort of all political units is necessary.

21. Some produces like vegetable, jute, etc. are small value and high bulky. Generally these items are produced in "char areas" (fertile land occupied by migrants on the bank of the river Brahmaputra) of Assam. These items can be transported by availing water transport at much cheaper cost provided they are regular, reliable and dependable. Therefore approach roads through inland water transport should be improved to a considerable extent.

23. Marketing being service sector, it should be manned with proper expert on marketing so that the spirit of marketing principle can be adopted in agricultural marketing. It is suggested that the marketing techniques and principles should be implemented properly by the ASAMB. □

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PERFORMANCE OF STATE BANK OF INDIA

(A Case Study of Howly ADB of SBI under Barpeta District of Assam)

Runumoni Lahkar Das*

Introduction

Agriculture is the key sector of the Indian economy, which is still employing about 70% of our population. Apparently, in the country's development process, the importance of agriculture is both basic and vital. The entry of commercial banks into the business of agricultural finance is of recent development. Banking is the base for economic development. In order to supplement the required financial help for the agricultural sector, certain institutions have been nationalized in India in post independence era. The Commercial banks flow of credit to this sector was very negligible before nationalization of fourteen major banks and the cooperative institutions credit support to the peasants was also the minimum, therefore the peasants were and are still under the clutches of the village moneylenders who have been extorting the peasants to the hilt. To elliviate the sufferings of the peasants and to make agriculture a viable institutions for rural credit has been built up. The need for sustained and rapid improvement in agriculture performance remains critical for Indians future growth and poverty reduction. Raising of rural income and firm productivity are important not only from the economic point of view of accelerating growth but also for implications that they have for human development. The SBI that happens to be the

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largest commercial bank at present earlier known as the Imperial Bank formed in 1921 by amalgamating the three presidency banks of Bengal (1806) Bombay (1840) and Madras (1843). And the Imperial Bank was nationalized by passing the SBI Act 1955 and the SBI came into existence from 1st July 1955. The primary aim of the bank is to extend banking facilities in the rural areas throughout the country.

In order to provide credit to farmers on an intensive area basis, the SBI and its other Associate banks have opened ADB at certain selected centre throughout the country. The SBI has formulated the 'Village Adoption Scheme' in 1973-74. Under the banner of the scheme, a branch usually adopts a few villages for intensive and integrated financing of farmers for meeting their credit requirements.

Though State Bank of India since its nationalization have played a commendable role for the development of agricultural sector; yet there seems to be great imbalance in respect of development of this sector in some areas of the state. The question generally crops up in the mind, which category /class of cultivators have really benefited more from the banks, credit schemes? Do all the agriculturists of the interior villages could receive the facilities of the bank schemes? What are the farmers regarding the banking schemes in the coming years? Evidently all these cannot be examined through the utilization of the secondary data alone. Hence an attempt is being made in the present study to examine the operational aspects of the existing banking schemes at grass root level as well as to know the real beneficiaries / non-beneficiaries under various schemes of banking institutions. For this purposively Barpeta District of Assam has been selected as the area of field investigation. In order to make the study more practical oriented and to receive the first hand information field level questionnaire were canvassed on to the farmers and also the questionnaire were served upon the study bank.

Profile of the Barpeta District :

The Barpeta District was covered out of erstwhile Kamrup District of Assam in July 1983. The District derived its name from the head quarter town of Barpeta, created as a Civil Sub-Division in 1841 by the British Administration; John Batlor was the first administrative officer of erstwhile civil sub division. Today the District consists of two- Civil Sub-Divisions, i. Barpeta, ii. Bajali. This lower Assam District covers an area of 3245 square k.m. and is bounded by in the North, Nalbari District in the East, Kamrup and Goalpara District in the South and Bongaigaon District in the west. The District lies between latitude 26.5 North 26.49 North and longitude 90.39 east and 91.17 easts. The general topography of the Barpeta District varies from low-lying plains to highland having small hillocks in the southwest corner of the District namely Baghbar, Fulora and Chatala overlooking the scenic and mighty Brahmaputra river. The climate of Barpeta remains mild and pleasant round the year. Tropical monsoon climate of the District provides two distinct seasons – summer and winter. The summer season of March to May is followed by the Monsoons from June to September. This is followed by cool; winter season from October to February. The river Brahmaputra flows from east to west across the southern part of the District. The soil of Barpeta District may be classified as Sandy, Sandy-loamy and forest-soils.

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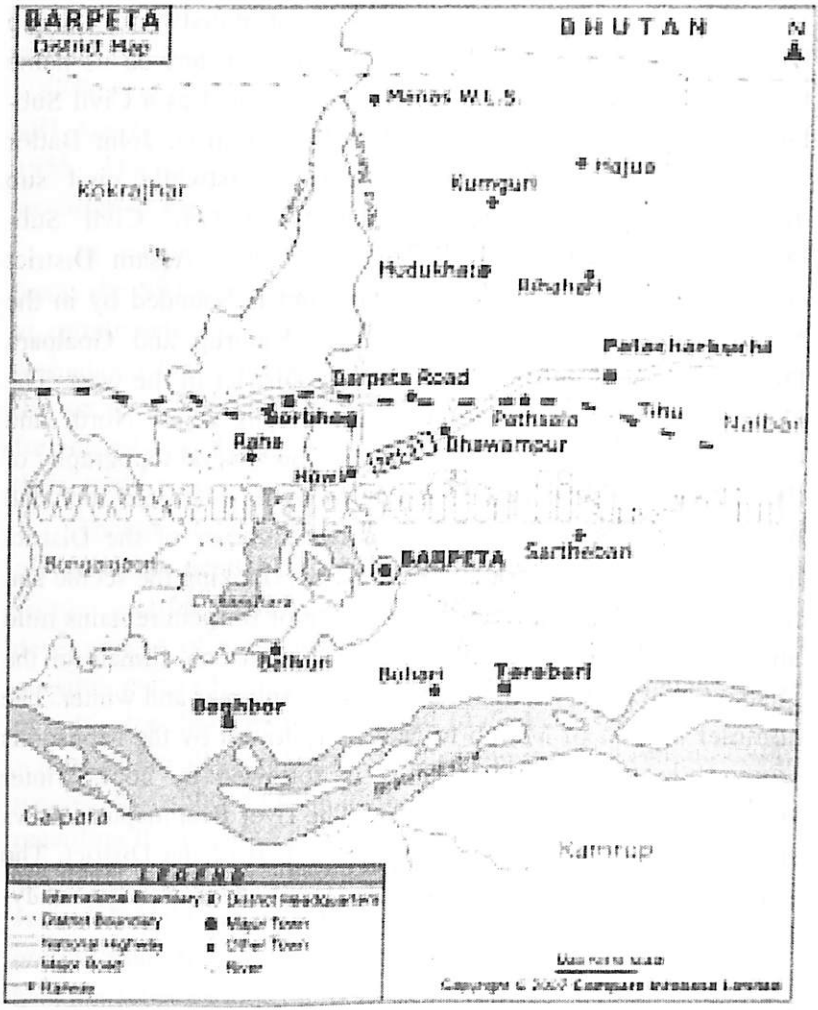

MAP OF BARPETA DISTRICT

Table : 1.1

Category wise number of branches of SBI in Assam as well as in Barpeta District

Name of the District	Branch Category			Facilities		
	Other Branches	ADB	Total	RTGS	Core Banking	Internet Banking
Barpeta	08	**01	08	03	03	03
Nalbari	05	Nil	05	01	01	01
Kamrup	30	Nil	30	25	25	25
Dhubri	12	Nil	12	02	01	01
Goalpara	03	Nil	03	Nil	01	01
Bongaigaon	06	Nil	06	02	02	03
Kokrajhar	06	Nil	06	Nil	Nil	Nil
Darrang	07	Nil	07	01	01	01
Sonitpur	12	01	12	02	02	03
Tinsukia	10	Nil	10	02	02	02
Lakhimpur	08	01	08	01	01	01
Dibrugarh	11	Nil	11	05	05	05
Golaghat	06	01	06	02	03	02
Sibsagar	15	01	15	04	04	04
Jorhat	09	*01	10	07	07	07
Nagaon	12	01	12	01	01	01
Morigaon	04	Nil	04	02	02	02
Karimganj	06	Nil	06	02	02	02
Cachar	09	*01	10	04	04	04
Karbi Anglong	12	01	12	01	01	01
N.C.Hills	05	Nil	05	01	01	01
Hailakandi	03	Nil	03	01	01	01
	199	09 *(02)	201	69	70	71

Sources : 1. www.sbi.co.in. 2. Statistical Hand Book, Assam, 2004
Note : Self compiled and field work.

Table : 1.2

Branches of State Bank of India in Barpeta District, Assam

Name of the District	Name of the branch branch	Branch Catagory	Branch Code	Other Facilities (RTGS/Core Banking/ Internet Banking)
Barpeta	1. Barpeta	Other branch	28	RTGS, Core Banking Internet Banking
	2. Barpeta Road	Other branch	2013	RTGS, Core Banking, Internet Banking
	3. Dakhin Ganakguri SAB	Other branch	9578	—
	4. Garemari SAB	Other branch	9198	—
	5. *Howly ADB	Other branch	5358	—
	6. Kamargaon	Other branch	9199	—
	7. Pathsala	Other branch	2099	RTGS, Core Banking, Internet Banking
	8. Sorbhog	Other branch	2126	

Sources : 1. www.sbi.co.in. 2. Statistical Hand Book, Assam 2004, Note : Self compiled and field work.

Profile of HOWLY :

Howly town is a semi urban center having population of 16765 as per 2001 census. It is the Barpeta District head quarter of Bhawanipur Development Block under Barpeta District of Assam. It is 12 km. Away from District head quarter i. e. Barpeta and 138 km. away from Guwahati, the state capital of Assam. The center is 47 km. away from International Border i. e. Bhutan. Though the town is small in size, various economic, social, cultural and political activities are coming up very fast. The center is having regulated market committee and branch of state Govt. Marketing board. The center is farmers for whole sale and retail trade in agricultural products like vegetable, bettlenut, coconut, jute paddy, milk, fish and fish seed etc. Various retail trade like stationary, grocery, cloth electronic equipments, medicine etc. are coming up in the area. Howly is famous for chickney supari which are largely supplied to different states of India. Jutes are also supplied mainly to the jute mills of West Bengal, vegetables, fish and fish seeds are supplied regularly to the different parts of the states. The place is ideally situated near the 31 no. National Highway and therefore it renders high facility of road communication for receiving the goods to other places. Barpeta road Railway Station has also extended much more facilities for the same, which is only 8 km. away from Howly. One of the major economic activities is growing of bamboo and bamboo products of the locality. Wood crafts and bamboo crafts of the place have already been recognized all over India and abroad also. The center is having branch of UCO Bank, Assam Gramin Vikash Bank and Ascard Bank. The competition amongst the financial Institutions is considered as fair. Presently integrated Development Project and one Research center of Assam Agricultural University, Jorhat are working in the center.

Despite of fair competition the branch has been able to render good services to all customers of all business segments. All the staff members are cordial to the customers, thus enabling the branch to book good business in its fold. Various important educational institutions like DIET, Basic training Centre, Normal School. High Schools Junior College etc. are situated here. The scope of personal segment business is also emerging.

Sources : 1. Howly ADB. (A branch of State Bank of India situated at Barpeta District)
2. Statistical Hand Book, 2004 Assam

Financial Performance of Howly ADB (SBI) :

Financial performance of an institution depends primarily on the quantum of deposits and advances for different purposes. The deposits and advances of Howly ADB (SBI) during the last four years are given shown in table no. 1.3 given in the next page.

Table : 1.3

Deposit and Advances of Howly ADB

(Rs. in '000 figures)

Year	Deposit	Advances			Net Profit	Return to Adv.	Total Adv.to Deposit	Agri Adv.to Deposit Adv.	Agri Adv.to Total	Other Adv.to Total
		Total	Agriculture	Other						
2003-04	70688	22856	5004	17852	259	1.13%	32.3%	7.1%	21.9%	78.1%
2004-05	86158	45141	8203	36938	1777	3.94%	52.4%	9.5%	18.2%	81.8%
2005-06	98685	67274	19770	47504	2564	3.81%	68.2%	20.0%	29.4%	70.6%
2006-07	108689	86458	30679	55779	4239	4.90%	79.5%	28.2%	35.5%	64.5%
Total	364220	221729	63656	158073	8839	3.99%	60.9%	17.5%	28.7%	71.3%

Source : The figures in terms of the amounts are extracted from the Display Board, Howly ADB, Barpeta, Assam. The Advances except Agricultural Advances i.e. Other Advances is calculated as Total Advances minus Agricultural Advances for computation of correlation.

Note : The figures in terms of percentage are self computed.

The above table shows a positive correlation in terms of deposit, advances and net profit in increasing trend. The co-efficient of correlation ($r_1\ x_1\ y_1$) between deposit (x_1) and total advances (y_1) in the branch is

$$(r_1\ x_1\ y_1) = 0.99$$

Again the co-efficient of correlation ($r_2\ x_1\ y_2$) between the deposit and (x_1) agricultural advances (y_2) in the branch is $(r_2\ x_1\ y_2) = 0.95$

Thus, it is found that the advances as compared to deposits in the branch are satisfactory. At the same time the calculated value of correlation between deposit and agricultural advances in the branch is also significantly almost same.

A statistical test has also been done over the figures on advances. It is found that co-efficient of correlation ($r_1\ x_1\ y_1$) between total advances (x_1) and agricultural advances (y_1)

$$(r_1\ x_1\ y_1) = 0.21$$

It is evident from the above test that the advances to the agriculture are insignificant in comparison to advances to other purposes. It can also be evident from the field survey which is explained in this paper.

Hence, the hypotheses been tested.

Analysis and Interpretation of Primary Data :

The observation in the course of the field study is summed up in this chapter. The survey was made among agricultural, agro-allied, rural industrial, in (18) villages of District of Barpeta covering a total of 55 borrowers. In addition to this the bank personnel in Howly ADB was also interviewed. The categories of borrowers surveyed along with the type of beneficiaries are given in table 1.4

Table : 1.4

Statement showing details of Loan of 55 Borrowers by Type

Category of Borrower	Total	Percentage
A) Borrowers for Agriculture	50	90.9
B) Borrowers for Agro-allied.	05	09.1
C) Borrowers for SSI	-	-
D) Borrowers for Transportation	-	-
Total	55	100

Category wise Analysis of Borrowers in the Field Study :

The village wise numbers of borrowers surveyed along with the percentage are given in table 1.5 and table 1.6 below. Under this heading an analytical study has been made for different categories of beneficiaries, who responded in the field study.

*The Howly ADB of State Bank of India with a Memorandum of Understanding (MOU) ties up with the All Barpeta District Fish Seeds Producer Society. The Howly ADB has been providing finance to the agricultural borrower through this society. Apart from the above mentioned agricultural borrower, some of the other agricultural borrowers were also availing loan from the bank by fulfilling sufficient requirements as required by the bank.

The sample survey is not free from a complete inaccuracy in the words of Frederick F. Stephen as- "sample are like medicines. They can be harmful when they are taken carelessly or without knowledge of their effects." The work of a census is simply beyond the capacity of an individual to make a through investigation covering a hundred percent area.

However, 'the moderately large numbers of items at random from a large group are almost sure on the average to posses the characteristics of a large group' (King). 100 questionnaires were canvassed among different categories of beneficiaries of the District. The problems of consumers in rural areas of the District are more or less the same. The information so obtained has been presented in this chapter. During the field work questionnaire were discussed with the beneficiaries of banks at length and important points emerged out of the discussion have been the basis of analysis.

About 30 percent of surveyed agricultural beneficiaries were contracted on their farms and the mechanism of switching the pattern of farm as well as the information regarding area and crop irrigated were also checked. The survey had made it clear that the overall performance of Agricultural Development Branch of State Bank of India in the district is not satisfactory as revealed by the people contracted in the survey process.

The universal problems as reported by the contracted people are that of procedural delay or delay in advancing loan, disbursement difficulties, inefficient organizational structure and insufficient amount of capital to execute the scheme and

sometimes they had to face in the situation of bribe. They had reported that the problems of heavy flood in this year causing heavy losses to them so that the recovery position of the borrower was not satisfactory. The economic condition, procedural delay and complexity in getting loan , along with the experience being seen from regular beneficiaries had been found as the important factor for not taking agricultural loan by non- beneficiaries.

Agricultural Borrower :

As seen in the survey and gathered in the table the borrowing for agricultural pursuit is the main objectives of the borrowers. Most of the respondents in the survey are agriculture borrowing i. e. 90.9 % (50 out of 55)

As interrogated by canvassing through the questionnaire, it is revealed that 94% of beneficiaries are getting more agricultural income through advances (47 out of 50)

Fishery was the major agricultural pursuit in the sample villages. The information given by all the respondents that due to the heavy flood in general, particularly in this year, they have been facing problems of smooth running for their business. Another problem of smooth running of their fishery business is that of inadequate capital. In fishery business, the minimum requirement of the capital is from Rs. 10, 00,000 to Rs. 30, 00,000. But they can only avail Rs. 50, 00,000 to Rs. 5, 00,000 which was too small amount of their business. To get the loan from the said bank they have to give more mortgages than that of advances. It is not possible for the borrowers to give large amount of mortgages. In this regard, all of the respondents reported that insufficient amount of capital was also a major problem for smooth running of their business.

As regards to sanctioning of advances , 70% (35 out of 50) respondents were reported that the advances granted by the bank always delayed in processing and 30% (15 out of 50) had reported that they were not faced any problem regarding delay in advancing.

Information gathered regarding repayment of loan, 80% (40 out of 50) of the respondents revealed that due to heavy flood in this year they were irregular on repayment of loan. 12 % (06 out of 50) of the respondents revealed that they were not in a position for repayment of loan and only 8% of the respondents were found satisfactory, As reported by them the repayment of loan is not irregular in the normal year.

When enquired about the effect on income of the sample villages due to advancing loan granted by the bank, 100% of the surveyed said that their had been increased after getting loan from the bank. The answer of the sample villages about the problems of insufficient capital to execute the scheme, 100% of the respondents were informed that they had to depend on money lenders with a high interest rate for fulfilling the deficiencies of the required capital.

Agro-allied Borrower :

Out of the total surveyed borrowers 9.1% (5 out of 55) are for agro-allied borrowers. It seems agro-allied industries are not sufficiently established by taking the borrowing from the Howly ADB under study. The problems in respect of procuring the loans, problem for repayment of loan, adequate amount of loan granted by the Bank is same as reported by the agro-allied borrowers.

Small –Scale Industries and Transportation Borrower :

During the field survey and from the official document as well no persons were found the borrowers taking the loan for running SSI and transportation. In due course of the survey most of the respondents were asked as to why the facility for running such industries not been availed in spite of the available schemes. All of them answered they are unawareness about the prevailing bank schemes.

Thus, it is obvious that in spite of having different policies for granting loan for running different agro-based industries, the

bank authority and other agencies have failed to make the people in the specific area aware of the policies. Since, the area is absolutely an agricultural area the said authority or agencies have the scope to educate the people by which that area can contribute a major portion to the state economy.

Table : 1.7

Statement showing details of 50 samples of agricultural borrowers in study

Particulars	No of beneficiaries	Percentage
Beneficiaries getting more agricultural income through advances.	47	94
Beneficiaries not getting more agricultural income through advances.	03	06
	50	100
Problems faced for the smooth running of their agricultural business due to natural calamities.	50	100
Problems not faced for the smooth running of their agricultural business due to natural calamities.	00	00
	50	100
Problems faced for the smooth running of their agricultural business due to inadequate capital.	50	100

Problems not faced for the smooth running of their agricultural business due to inadequate capital.	00	00
	50	100
Problems faced for delay in sanctioning	35	70
Problems not faced for delay in sanctioning	15	30
	50	100
Irregular beneficiaries on repayment of loan.	40	80
Satisfactory beneficiaries on repayment of loan	04	08
Defaulter beneficiaries on repayment of loan	06	12
	50	100
Irregular beneficiaries on repayment of loan due to both natural calamities and inadequate capital.	45	90
Irregular beneficiaries on repayment of loan due to unwillingness of borrower	05	10
	50	100
Beneficiaries depends for fulfilling the deficiencies of loan on money-lenders	50	100

Beneficiaries not depends for fulfilling the deficiencies of loan on money-lenders	00	00
	50	100
Beneficiaries required to give more mortgages against loan .	50	100
Beneficiaries required to give sufficient mortgages against loan .	00	00
	50	100

Bank Management View :

As stated earlier in this chapter the bank personnel of Howly ADB was interviewed putting some questions in the form of a questionnaire in respect of policy execution and different problems faced in management of the branch.

During the discussion with the bank personnel he reported satisfactory view on the position of deposits and the future of the existing structure of SBI is excellent while he is not satisfied from the view point of communication, less manpower at the branch, ill-intension of the borrower regarding repayment of loan and attitude nature of some borrowers. Moreover he suggested for instaling ATM facility and infrastructure of the branch should be improved and protected for better implementation of schemes.

Conclusion and Suggestions :

Agriculture provides livelihood to more than 70% of the population in Assam. In the study nearly 90% of the populations are dependent on agriculture. In spite of agricultural production found to be less and also happened to be erratic. The main reason behind this is due to slow progress in

respect of modernization of agriculture system and continuous dependence on conservative's process. Again the agriculture is also dependent on vagaries of nature. Frequent and wide spread floods, heavy and uneven rainfall in summer as well as dry and unfit weather in winter have hindered the majority growers in taking up the modern agricultural inputs.

Therefore, it is advisable to take some steps for controlling the recurring floods in the state. Both the Central and State Governments shall have to come forward for this giant task. Unless and until this problem receives the attention of the Government no fruitful result is expected to boost up agricultural production in Assam.

The selection of beneficiaries which is very much important for granting loan under various schemes and it should be done by the concerned banks only after the field survey and discussing with the villages. As in some cases it happen should not be made office corridor. Only by observing the actual requirement of inputs, development workers, should distribute the inputs to the farmers. Haphazard distribution should be avoided with a more systematic line of work. Another important factor is that the credit agency should provide a credit before the initiation of agricultural operation. As regards to the provisions of loan the funding agency should ensure that loans are not diverted for any other purpose other than identified one. Anybody found guilty of misusing the loan be properly punished. Agricultural demonstration is very much essential to ensure participation of more number of farmers under a various programmes. For better performance under various schemes, coordination amongst the blocks and other financial institutions as well as other development departments is necessary. As has been seen the present setup in the blocks is quite inefficient in executing the plans. Resources are seems to be inadequate for implementing programmes.

Even though the banking network in rural areas has been increasing, yet needs further improvement for development of

social infrastructures. Still the credit facility seems to be quite inadequate. The sample data makes it clear that banking facilities do not provide a considerable help for meeting the credit requirements of the poor farmers of the village. The benefits of different banking schemes have been monopolized by a few medium and because they stands in a sound economic position. On one hand the small farmers find it difficult to approach the bank officers for necessary loans for their agricultural pursuit and on the other hand the lack of proper publicity of the existing schemes of Banking institutions coupled with the procedural difficulties work well to discourage them from taking financial assistance. Moreover, the time duration in between the filing of the application and the disbursement of the loans also operated to discourage the small and marginal farmers to opt out for bank loans.

Besides, providing credit at a cheaper cost, the banks should try by all possible means for inculcate of saving habits among the borrower farmers, for it contributes to the farmers long run economic prosperity. The vary provision of credit at lower interest rates would invariably result in some productive purposes. But the additional incomes would always have the tendency to tempt the farmer to use it for consumption or unproductive social expenditure. In such a case, a borrower farmer is likely to become a permanent debtor. Further, the existence of the facility to the same set of farmers year after year would not facilitate the extension of the services to a large amount of deserving farmers. So, the banking institutions should try to encourage the average farmers to build up own source of investible funds.

The banks have to change their outlook and avoid considering of treating the rural branch posting as a punishment posting. The selection of a right person for a village branch can change the rural economic landscape by communicating or interpreting the real objectives of the banking schemes among the farmers.

Introduction of insurance schemes for each farmers standing crops and the farmers who preferred collectivization from the period of sowing to, the harvesting against damages by natural calamities, such as floods and inundation, erosion of soil by rivers, draught and pests, etc. are an essential pre-requisite to help boost agricultural production. This scheme would give an additional incentive to the farmers to go for loans for their agricultural development and help maintain the input potential of the farmers to a great extent. The implementation of insurance schemes will cover the risk of agricultural loans contracted by the farmers with the commercial banks.

It is observed from the analysis of the sample data that usually the bank loans are availed by the rich big farmers. The most problematic issue regarding the credit facilities of the banking institutions is the non-repayment of loans by some farmers. This seems to have emerged mainly because of any strict controls at the banks ends to check the defaulters. At present, the Government has given powers to the banks to take action in civil courts against deliberate non repayment of bank loans. It is expected that there will be no problem in this matter in future.

The various banking schemes also help to provide adequate and timely credit facilities to the farmers assisting them in terms of adopting improved methods of cultivation. In the analysis of the field survey it can be termed that rural credit facilities greatly help the farmers of the Barpeta District by increasing their total amount of crop production as well as the mode of production itself. The survey data also reveals that all classes of farmers are being able to augment more income by availing bank loan facilities.

Therefore, whatever we have learnt from our field experience it may safely be concluded that within a decade or so all the agriculturist of the state as well as of the Barpeta District will be in a position to mechanise their process of farm activities provided the terms and conditions of the bank loans are liberalized.

Following suggestions are offered for the effective management of the bank branch –

1. The high level of overdue of banks has become a matter of concern. So, banks should make all possible efforts to reduce their overdues. This also required that no loan should be given without proper identification and address of the deserving rural poor.
2. It is gross inadequate to measure the success of banks achievements in rural financing simply in terms of quantitative variables like the number of rural branches, growth of deposits and advances, credit deposit ratio etc. The terms of increased earnings, improvement in the standard of living, uplifting the rural population above the poverty line as an impact of bank finance directed towards the poorest among the rural poor. Therefore, data on economic status of the rural beneficiaries in the pre and post sanction period of the bank loans should also be collected and evaluated.
3. It should not be overlooked that greater risks are involved in atomistic lending to the unorganized weaker sections in rural areas. Hence politically motivated loan melas should be stopped immediately. Banking legislation should be enacted by parliament to stop such things which may not only lend the banks into difficulties but also vitiate the very purpose of helping the weaker sections.

In conclusion, it can be safely said that the State Bank of India including Agricultural Development Branch of SBI are playing a very specific and important role in the upliftment of the economy of the state. After the nationalization of SBI, they were providing liberal finance to the farmers leading to the development of the agricultural sector of the state. Moreover, with a view to providing credit to farmers on an intensive area basis the SBI and its associate banks have opened ADB certain selected centres throughout the country as formulation of the

'Village Adoption Scheme'. But after the introduction of 'Service Area Approach' scheme there is no distinction between special ADB and ordinary branch as regards to their operations. ❐

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PERSPECTIVES OF COMMERCE EDUCATION IN ASSAM

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Introduction

Commerce education particularly in India dates back to 1886 which is as old as our history. In ancient India we had gurus who taught their disciples. Business tactics were transferred from father to his son. Separate institutions in a formal way of commerce education were not there. Business education in India in formal manner was soon started after the British traders and industrialists wanted to recruit clerical and accounting personnel from local sources. Several unrecognized Schools sprang up to train students in vocational subjects. The supply of British trained persons proved inadequate to meet the growing demands for more diversified and higher talent in business enterprises. Consequently from 1886, in India Commerce education was started with the establishment of first Commerce School in Madras. Government of India started School of Commerce in Calicut and presidency college in Calcutta in 1895 and 1903 respectively. At University level, Commerce education had beginning in 1913 when Sydenham College of Commerce and Economics was established in Bombay. Since then it has experienced tremendous growth. At present facilities of Commerce education in India is available out of 343 Universities and 16,000 colleges (2005) about 217 Universities and more than 9427 Colleges, offering liberal academic disciplines of Arts, Science and Commerce. Commerce is being taught at three conventional levels.

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Level I + Two stage (two years higher secondary course)
Level II Graduation (three years)
Level III Post graduation (two years)

There has been a manifold increase in the number of commerce students from 36,347 in 1950-51 to 1986146 in 2005 and 2006.

Though higher education in commerce drifted in to separate streams, viz. commerce stream after independence, the attitude of the government has been one of traditional neglect than of conscious design. Business world and the educational institutions never tried to learn how to co-operate and interact with each other for drawing and utilizing the output of commerce graduates and post-graduates.

Globalization of Indian economy has changed the business world. This has created a challenge particularly for teachers to equip their students in such a way that they can face this competitive world. Therefore, it becomes utmost essential that the teachers update themselves with latest skill and knowledge. Research has become the needs of the hour, which helps in giving innovative and creative ideas and thinking. Interestingly only 9.27% (Annexure-I) of students are enrolled in research work.

Commerce Education in North Eastern Region and Assam :

In North Eastern India, the scenario of commerce enrolment is not very much encouraging. In 1970-71 out of the total of 354615 commerce students in the Country only 5504 were from North Eastern India (around 1.5%) and in 1995-96 out of 14,10,119 Commerce students in the Country, North Eastern Region had only 16576 Commerce students (around 1.2%) and in 2003-04 out of a total 17,55,328 in the Country 23867 in the North Eastern India (1.36%) Commerce education in North Eastern India came late. It was during forties, J. B. College of Jorhat started Commerce Department and later G.C. College, Silchar, D. M. College, Imphal, DH SK College Dibrugarh, Karimganj College, Nowgaon College, St. Anthony's

College and Tinsukia College joint in Commerce education. At the University level the Gauhati University was the first ever University in the North Eastern India where Undergraduate and post graduate Commerce Classes were started in the University. In 1948 itself i.e. the year of its inception.

Later Dibrugarh University was established in 1965 along with a good number of independent full-fledged Commerce Colleges affiliated to Dibrugarh University were established during seventies and eighties. From 1962 Gauhati Commerce College was catering to Commerce education, only after eighties colleges like K. C. Das Commerce College, Nogaon Commerce College are some of the important colleges has emerged. In the all India ranking in the enrolment of Commerce in 1970-71 Assam was ranked 13th in 1970-71 in enrolment in 1995-96 it came down to 16th and 17th in 2003-04.

Most of the colleges in Assam and other parts of India treat commerce as a subject like Political Science, History or Geography as a result of which many of the emerging papers in business area could not be introduced in Commerce stream and the MBA institutes takes the full benefits of the changing market demand.

Commerce discipline is yet to become a popular academic discipline in this region of India.

Major areas of Problems

Out of the total enrolment in Commerce only about 8% students opt for M.Com. / higher education and 92% stop with graduation. Table-I depicts the students enrolment Facultywise in 2005-06, it has been observed in the table that Faculty of Commerce/Management is 1986146 (18.01%) which is almost equal to Science Faculty, i.e. 2255230 (20.45). Therefore it is an indication that today students opt commerce by choice. It has also been observed that more concentration of Commerce education is found in industrial and Urban areas.

Table - I

STUDENTS ENROLMENT : FACULTY-WISE : 2005-2006

Sl. No.	Faculty	Total Enrolment	Percentage to total
1.	Arts	4976946	45.13
2.	Science	2255230	20.45
3.	Commerce/Management	1986146	18.01
4.	Education	161009	1.46
5.	Engineering/Technology	795120	7.21
6.	Medicine	348485	3.16
7.	Agriculture	63962	0.58
8.	Veterinary Science	16542	0.15
9.	Law	336356	3.05
10.	Others	88224	0.80
	Total	**11028020**	**100.00**

Source : UGC Annual Report 2005-06.

Yet Commerce is not properly understood as a discipline by educationists', administrators and government. This is treated at par with subjects like Physics or Chemistry or Maths. In the University System, there is only one department of Commerce while under Science discipline there are department of Physics, Chemistry, Biology and so on. Therefore it is not being recognized as a discipline comprising marketing, accounting etc. as full fledged departments. Indiscriminate expansion of Commerce education has resulted in qualitative degeneration. The students failed to take up jobs requiring knowledge of general subjects or jobs that demand knowledge of a technical or specialised nature e.g. Commerce graduate is not accepted appreciably in the job market.

However, the several reasons for the present state of affairs have been identified by Reddy (1998).

- The syllabi of commerce are not related with competitive examinations. Commerce graduate are not eligible for teacher training courses like B. Ed. in many states Commerce education has not been introduced at school level in many states. There is no preference or reservation for commerce graduate either in employment or in admission to professional courses like CA, ICWA, CS, MBA etc.
- In most of the cases, the department, are run with a skeleton staff and hence there is a greater reliance on visiting or guest faculty. The Departments represent more of academic model than professional model. Moreover, there is heavy dependence on the concepts, cases techniques, etc. borrowed from USA.
- Poor teaching in many colleges forcing many students to go for tuitions which means additional cost and effort. There is lack of proper infrastructure in the college/ universities. It is sometimes remarked that many colleges are virtually academic slums. There is paucity of funds, reading material in regional language, are not well-structured.
- Inadequate teaching aids and untrained and ill-equipped teachers, discourage students to take up commerce. Moreover, there is lack of practical exposure both to the teacher and taught. Commerce teacher is a jack of all trade, perhaps he is the only person who is expected to teach all the subjects. Actually commerce is theoretically taught with no practical exposure.
- Because of defective admission policy based on academic scores, in many cases students who are not able to get seat in other courses opt for commerce.

Suggestions

1) Business education should include both personality development and on-the-job training.
2) The delivery of knowledge should be systematic. Case studies, Role playing and mock exercises should be included alongwith the traditional lecture method.
3) A learner centered approach must be accepted.
4) Industry visits by the students should be encouraged at least once in a year.
5) Good quality research is necessary to support Indian context based business education.
6) Commerce educators must adopt the latest teaching methods and techniques of analysis.
7) Group discussions must be made compulsory for the students opting for major subjects particularly.
8) Students of Management and Commerce should be given an orientation in industrial and business experience.
9) No preference for commerce graduates either in employment or in admission to professional courses like CA, CS, ICWA or MBA should be done.
10) Faculty of Commerce should also attend workshops on mental health of college students alongwith other academic training programmes.

Conclusion

Assam is not at all lagging behind in terms of human resources if developed and trained properly, it can also show tremendous performance. Meticulous planning is what is required at present. The curriculum of commerce education must be framed according to the needs of the present business world and the faculty imparting commerce education must be fully equipped with professional and technical trainings. Innovative methodology must be introduced in teaching rather than adopting the age old technique of monotonous lecture.

Practical knowledge must be given alongwith theoretical knowledge. It is therefore a challenge particularly for the educators to uplift this neglected area of so called liberal education of commerce, with utmost effort to give a professional touch to this discipline. ❐

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ANNEXURE - I

STAGE-WISE ENROLMENT OF STUDENTS UNIVERSITY TEACHING DEPARTMENT/ UNIVERSITY COLLEGES & AFFILIATED COLLEGES : 2005-2006

Sl. No.	Stage	University Deptts. University	Affiliated Colleges	Total (% to Grand Total)	Percentage in Affiliated Colleges
1.	Graduate	950892	8854085	9804977 (88.91)	90.30
2.	Post-Graduate	347096	691714	1038810 (9.42)	66.58
3.	Research	64161	6555	70716 (0.64)	9.27
4.	Diploma/ certificate	64644	48873	113517 (1.03)	43.05
	Grand Total	**1426793**	**9601227**	**11028020 (100.00)**	**87.06**

Source : UGC Annual Report 2005-06.

E-JOURNAL CONSORTIA AND DIGITAL LIBRARY WITH REFERENCE TO UGC-INFONET

Prasanta Kumar Deka*

Introduction

Today consortium has become a buzzword for the libraries of higher educational institutions of the country. The root of Library consortia development grows upon the traditional library co-operation through union catalogue, inter-library loan, etc. Consortia increase the buying power of individual libraries and maximize opportunities for co-operative collection building and for resource sharing. The individual libraries find it impossible to purchase all the relevant information due to the rising price of information and explosion in the production of the knowledge. And also the new technologies change the productions processes and services of the commercial publishers and scholarly societies. Majorities of the scientific journals are now found in electronic editions along with the print editions and some new journals are only available in the electronic format. There are some integrated electronic journals available in the market by the publishers, database producers, aggregators, etc. which throw a big challenge to especially the academic libraries. These advancements radically change also the user expectations from the academic libraries. They want the same technological developments in the libraries also. All these are compelling the academic libraries too, move towards the consortia.

Origin of Consortia

According to Kopp (1998) Melvin Dewey wrote about library cooperation in an issue of the library journal in 1886 and

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1887 E. A. Mac presented his views on cooperation vs. competition in the same journal in 1888. ALA has formed a cooperation committee whose report was published in ALA Bulletin in 1880s. During a symposium organized by ALA on the tropic "the library of tomorrow" in 1939, R. D. Downs presented a futuristic view of library cooperation in his paper "one for all"; a historical sketch of library cooperation 1930-1970. During 1970 the US office of Education commissioned the System Development Corporation (SDC) to carry out a nationwide study of the academic library consortia to develop a fund of descriptive and prospective information about the activities of academic library consortia and provide guidance of libraries that were forming or planning to form consortia.

Why Consortia

According to SDC report the main reason for the formation of the consortia was perhaps the thinking that consortial approach offers an attractive solution to many outstanding problems of the participating libraries. With the progress in library automation, use of computers in bibliographic processing and database searching gained boost to reduce sharing and consortia formation.

Potter has identified two main reasons for the libraries for formation of consortium. The sharing of existing physical resources is the main reason and the purpose of identifying and addressing the common needs arising from developments in information technology as other. The growing importance of Internet and www, web 2.0 and possibility of offering a variety of electronic resources across the Internet is also a major factor in the formation of consortia. Specially the digital library consortia have came up due to the increasing awareness that the electronic resources are going to play more and more important role, which are summarized below—

- an interest in cooperative projects that might benefit all students and faculty of participating libraries.

- Providing enhanced library services with an emphasis on access to new electronic resources, bibliographic databases and services offered through Internet, www and web 2.0.
- Controlling building costs by providing regional storage facilities.
- Expending inter library borrowing which has evolved into providing as many electronic resources as possible at the lowest cost to consortia members
- To endure that faculty and students across all consortia members have equal access to electronic resources.
- Better sharing of existing resources.

Current Scenario

During last couple of decades the formation of library consortia has shown steady growth mainly due to the developments in electronic communications. Consortia are no more restricted to the developed countries. Some of the leading consortia of the world are Ohio-Link (a consortium of 84 Ohio Universities, Colleges, Community Colleges and State Library of Ohio); TexShare (a consortium of 700 Texas academic, public and medical libraries; VLVA (Virtual Library of Virginia, a consortium of academic libraries in Virginia); IDAL (The Illinois Digital Academic Library); ARL (Association of Research Libraries); etc. The list is very long and cannot be shown here. The above library consortia are in hundred in the United States and it is not possible to describe them here (Singh : 2005).

Besides the United States a number of efforts in the formation of library consortia are being made throughout the world. In Brazil, Electronic library for Scientific Journals has come up for the universities and research institute in Sao Paulo through resource sharing and cooperation. HEAL-Link is a consortium of all academic and most research libraries in

Greece. CALIS (China Academic Libraries Information System) is the biggest consortium in Asia. It came into existence in 1998. The major breakthrough and recognition in consortia approach came in the form of establishment of a Consortium of Consortia in mid 1990s. The name was later on changed to International Coalition of Library Consortia (ICOLC) (Singh : 2005).

Indian Scene

Many efforts have taken place in the country for formation of library networks mainly due to the radical changes in the functioning of the libraries. The fact that financial crunch in these libraries forced them to find out some sort of cooperation. As a result formal library networks came into existence, such as CALIBNET in 1986, DELNET in 1988, MALIBNET, etc. Establishment of INFLIBNET by UGC in 1988 gave a real boost to library automation activities in the country. Many libraries in India came together voluntarily for resource sharing and the most prominent among them was the consortium of Astronomy libraries in India. The participating libraries were Indian Institute of Astrophysics Library, Inter-University Centre for Astronomy and Astrophysics Library, National Centre for Radio Astrophysics Library, Nizamia Observatory Library, Physical Research Laboratory Library, Raman Research Institute Library, Tata Institute of Fundamental Research Library and Uttar Pradesh State Observatory Library.

Even after two decades of cooperative efforts for resource sharing among the libraries in India, there is not even a single successful programme that could be used as a point of reference to replicate in other libraries. The main factors that affected these kinds of efforts were more human and attitudinal than technological or economical. However, things are changing and the information environment is more conducive today. The advent of Internet have provided the tools to tackle the problems faced earlier mainly the physical movement of

information resource which no longer is required. As a result successful consortium like INDEST and UGC Infonet: E-journal consortia have come up.

FORSA Consortium

The Indian Astrophysics Consortium called Forum for Resource Sharing in Astronomy (FORSA) is a typical example of homogenous group of members wherein the libraries have common area of interest and establishing the consortium is slightly easier than in heterogeneous type of members. The FORSA consortium consists of five members who joined the consortium for negotiating licensing for astronomy journals and identified a subscription agent as a supplier of journals. Under the consortium Nature journal was also subscribed by six libraries those committed to share the license fee to access the Nature electronically (Thamaraiselvi : 2005).

CSIR Consortium

The Council of Scientific and Industrial Research (CSIR) in India has 40 scientific laboratories involved in basic and applied research in various disciplines. Many of the laboratories have well equipped libraries, and some of them act as the main information centres in different subjects functioning as consultant libraries at the national level. Access to electronic journals through the use of state-of-the art technology is possible in many of the libraries belonging to these laboratories. Each of the laboratories have a well established library documentation centre that is also backed up with strategic information support from the National Institute of Science Communication and Information Resource (NISCAIR), a constituent establishment of CSIR formed with the merger of INSDOC and NISCOM. (Thamaraiselvi : 2005).

As a first step, in recent past NISCAIR on behalf of CSIR has entered into an agreement with Elsevier Science to access

its odd 1,500 e-journals and further intends to strengthen its information resource base by subscribing e-access of more and more journals published globally. CSIR consortium extended its access by creating appropriate agreements on consortium basis with the other providers of E-journals.

INDEST Consortium

It is one of the successful examples of consortia formation in India. It was conceived as a strategic cooperation called the Indian National Digital Library in Engineering Science and Technology (INDEST) based on the five project proposals submitted to three major ministries of the Govt. of India, namely the Ministry of Human Resource Development (MHRD), the Ministry of Information Technology (MIT) and the Department of Biotechnology. INDEST is a fully functional consortium since 2003 and the funds for its operation are being provided by the MHRD. INDEST is a three level structure. The level 1 consists of seven Indian Institute of Technology and Indian Institute of Science Bangalore. The level 2 comprised of the National Institutes of Technology and other Institutes centrally funded by the MHRD. In level 3 are the individual libraries. At present one member at level 3, for most information INDEST website http://indest.iitd.ac.in may be visited. Some of the full text as well as bibliographic databases available to member libraries under INDEST is given below (Access right may differ depending on the level of the member library).

Full text databases are Elsevier's Science Direct, ACM Digital Library, IEL Online, Springer journals, Emerald complete, ABI/Inform, Ebscohost, ASCE journals, ASME journals, Nature online, etc. Chemical Abstract Service, MathScinet, Inspec, Compendex, etc provide bibliographic databases only.

UGC-INFONET E-Journal Consortium

The UGC-Infonet is an ambitious program of the UGC to interlink all the universities in the country with cutting edge technology. This consortium has been the joint effort of UGC, India and the ERNET India, New Delhi under Ministry of Information Technology. The executing agency of this consortium is the INFLIBNET Centre located at Ahmedabad. Under this programme it is proposed to use ICT and Internet to transform learning environment from a mono-dimensional one to a multi-dimensional one. UGC-Infonet has become a boon to a higher education system in several ways. And in the long run, each university will become a hub for the colleges affiliated to them. The INFLIBNET centre has been able to realize one of its objectives by setting up a major communication network of universities through UGC-Infonet. It has successfully inter-linked 149 universities. It has become a vehicle for distance learning to facilitate spread of quality education all over the country. It also acts as a tool to disseminate education materials and journals to the remotest of areas. It has become widely used resources for research scholars for having the most up-to-date and reliable information. It has an intranet for university library automation. It also establishes a channel for globalization of education and facilitates the universities in marketing their services and developments. The member libraries will have access to the e-resources being made available under this programme. The infrastructure provided through UGC-Infonet is a minimum bandwidth of 256 kbps to 2Mbps. At present the following resources are available to UGC users (http://www.inflibnet.ac.in).

Bibliographic databases are Chemical Abstract Service, Biological Abstract; Royal Society of Chemistry consists of Analytical Abstracts, Catalysts and Catalyzed Reactions, Chemical Hazards in Industry, Laboratory Hazards Bulletin,

Methods in Organic Synthesis, Natural Product Update. Full Text databases are American Chemical Society, Royal Society of Chemistry, American Physical, Institute of Physics, American Institute of Physics, Cambridge University Press, Project Muse, J-STOR, Kluwer Journals, Springer Journals, Emerald, Nature, Science Online, Encyclopedia Britannica (National Site Licensing), Elsevier Science, etc. Portals are Ingenta- Gateway Portal and J-Gate Gateway Portal.

Salient Features of UGC-Infonet

The following are some of the most important features of UGC-Infonet :

- Scalable Architecture to grow nation-wide terrestrial backbone using fiber optic links.
- Integrated satellite WAN supporting broadband and SCPC technology.
- Comprehensive Network Management systems overall monitoring of the network.
- Linkage with other academic and research networks all over the world.
- Security for data and virus protection using firewalls and intrusion detection systems.
- Dedicated Data Centre for Web hosting, e-journals and Mail Boxes.
- Broadband Multimedia and Video Channels for Distance Learning.

UGC-Infonet Digital Library Consortium

To promote higher educational system, its standard quality research and bridging the digital divide amongst Indian Universities, INFLIBNET has initiated UGC-Infonet Digital Library Consortium under UGC in the year 2004 under 10th

Five Year Plan. By this, centre has been able to realize one of its objectives by setting up a major communication network of universities and its successfully interlinked 149 universities through this consortium, which has been planned, implemented and monitored by the centre. During the last three years, effective implementation and execution of this programme has made it as one of the largest and successful consortium around the world. Under the programme, over 4500 high quality peer reviewed priced full text scholarly journals in Science & Technology, Social Science and Humanities are provided free of cost to 124 universities through UGC-Infonet infrastructure. Centre has developed a website of UGC-Infonet Digital Library Consortium. Users can get information about the UGC-Infonet Digital Library Consortium, e-resources, details of member universities, user help guides and usage statistics, etc.

E-Journal Accessibility to Universities of North East Region

Access to electronic resources requires good ICT infrastructure, availability of satisfactory number of PCs in network environment and good speed of INTERNET connectivity. If any of these is not available, these facilities remain unutilized. Other factor, which is also responsible for usage is awareness among users. Statistics reveal that most of the universities in the region are not making desired use of E-journals due to some or the other reasons. But despite the best efforts of INFLIBNET, universities in the region are yet to catch up with mainstream. Access to E-journals in the NE Region is given to five universities in the year 2004. These universities are NEHU, Tezpur University, Gauhati University, Manipur University and University of North Bengal. These universities were given more than 1700 full text journals from different publishers. These resources are :

Sl. No.	Name of Publisher	No. of Journals/ Databases	Access from
1	AIP/APS	27	1997
2	American Chemical Society	31	Vol. 1 Issue 1
3	Annual Reviews	29	1994 onwards
4	Biological Abstracts	1 Database	1969 onwards
5	Cambridge University Press	72	1997
6	Chemical Abstract	1 Database through STN	1907 onwards
7	Chemical Abstracts	1 Database	1907 onwards
8	Elsevier Science-Life Science	34	1995 onwards
9	Emerald	28	1995
10	Encyclopedia Britannica	1 Database	Complete collection
11	Ingenta Portal	1 Product	1997 onwards, some back access as well.
12	Institute of Physics	36	Vol. 1 Issue 1
13	J-Gate Portal	1 Product	2000 onwards
14	JSTOR	517	Vol.1 Issue 1
15	Kluwer Academic	647	1995 onwards
16	Nature	1	1997
17	Project Muse	222	1999 onwards
18	Royal Society of Chemistry	24 + 6 Databases	1997
19	Science Online	1	1997
20	Springer Link	533	1995 onwards

Source : PLANNER- 2005

In 2005 INFLIBNET has extended the access of E-Journals to four more universities in NE Region. Hence Arunachal Pradesh University (now Rajiv Gandhi University, Itanagar), Assam University, Dibrugarh University, Nagaland University became part of the UGC-Infonet: E-Journal consortium. Keeping in view the demand from various places, resources from Taylor and Francis, Blackwell, Mathscienet, Portland press and Project Euclid have been subscribed under the consortium and access is given to all 124 universities. Here it may be mentioned that e-journals of Library and Information Science at Gauhati University has been stopped by the INFLIBNET because of non-use of journals by the users. When the e-journals were provided by the INFLIBNET, the university had dial-up Internet connection, which remains out of order most of the time. That is why the statistics showed zero. And now the university has leased line in the library, then the subscription of LIS journals are not available to the users of LIS. The director of INFLIBNET has announced during valedictory session of PLANNER- 2007 at Gauhati University that very soon the e-journals of library and information science will be made available to the users of Gauhati University.

Conclusion

With globalization of education and competitive research the demand for the journals has increased over the years. Due to insufficient funds, libraries have been forced to discontinue the scholarly journals, which have great impact to the users. In order to, provide the current literature to academic world; UGC has initiated the UGC-Infonet Digital Library Consortium. Timely initiative of UGC is a big boon to academic circles in the country, which enables them to access large number of scholarly journals from reputed publishers, aggregators and society publications. Under this consortium, about 4500 full text scholarly electronic journals from different renowned

publishers across the globe can be accessed. The consortium provides current as well as archival access to core and peer-reviewed journals in different disciplines. The whole programmes have been implemented in different phases. So far 124 Indian universities, which comes under the purview of UGC, have been provided access to these journals and it will gradually be extended to affiliated colleges as well. It covers almost all areas of learning like Arts, Humanities, Social Sciences, Physical and Chemical Sciences, Life Sciences, Computer Sciences, Mathematics and Statistics etc. and other subject areas are to be added in near future. The programme is wholly funded by the UGC and monitored by INFLIBNET centre. The UGC-Infonet: E-journal Consortium was launched during the concluding day of UGC's Golden Jubilee celebrations by the former honourable President of India, Dr. A. P. J. Abdul Kalam at Vigyan Bhavan on 28th December 2003 by dedicating a bouquet of e-journals to the nation and since 2004 the INFLIBNET has initiated UGC Digital Library Consortium under 10th five year plan. □

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TAGORE'S HEROINES : IN THE LIGHT OF DIFERENT ASPECTS OF WOMEN

Shrabani Bhadra*

The importance of novel and short stories of Tagore is great, because here the scope for presentation of the problem of life is far greater and as a matter of fact the problems arising out of the complexities of man-woman relationship and their possible solutions have also been portrayed in greater detail. In the present paper an attempt has been made to focus on Tagore's feminist outlook and his outlook on women's progress in the social set-up of his own times in the context of the centuries-old patriarchal concept and practice in the country through a discussion of the lives and problems of a few selected women characters of his novels and short stories.

The stories of Tagore present before us a variety of women who differ in their nature, character and personality. Their outlook differ but they are all conscious of their personal rights. Many reforms initiated by the intellectuals and thinkers influenced by the woman. The revolt is strongly felt in the stories of Tagore. Women in the stories of Tagore fight for their justice boldly and the strength of women-mind is reflected at every step as they are ready to exhibit their potential.

One of the important women in Tagore's creation is 'Damini' the rebel woman, is the heroine of the novel 'Chaturanga' (1916). The novel whirls round the young pretty widow, Damini. Proper names can become connotative. 'Damini' in Bengali means 'Lightning' which she indisputably is, as she exudes the light and the heat of the lightening flash. We meet her first as a rebel against the excessive piety and

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submission to the Guru, Lilananda. Damini a widow, but an image of fullblossmed youth burning with the passion of physical desires and egar for enjoiying life. In the eyes of Sribilas, the narrator of the novel, 'Damini' is, as it were, the lightning hidden within the folds of sravan clouds. Outside, youth has overbrimmed her physical features; within flickers of flame are burning scintillatingly. Damini turns a rebel after the death of a non-complaisant husband (sibtosh) who does not care to satisfy her psycho-physical needs during their brief conjungal life, Bengali novels before 'Chaturanga' portrays society proscribed aberrations of Hindu widoehood and their servere consequences as 'Rohini first for illicit love escapade with Govindalal and then for betrayal and dual loyalty in Bankim Chandra's 'Krishna Kanter Will' pay the price of their aberrations by their lives. Damini is not a direct decendant of those unfortunate widows; but she is a much more developed version of hapless widowhood. She is much more bolder, more introspective and more resilient.

Rabindranath's 'Yogayog' (1929) portrays a clash between two antipodal concepts of marital love and sex as represented by a commercially successful wealthy merchant Madhusudan and a finely-turned sensitive 19-year old woman, Kumudini nurtured on the Hindu ideal of 'womanhood' and traditional concept of wifehood. In Madhusudan's concept of maritial relation with wife there is nothing as love, fine sense and sensitive behavior, for he understands that the wife is the symbol of captive sex which can be exacted by authoritarian force. She is nothing but another item in the inventory of his possessions. His idea of the woman has been moulded from a very narrow mercantile vision 'Madhusudan has seen women very briefly among the daughter-in law of the house. They perform the daily chores of the household, engage in quarrels, whisper family secrets to each other and even shed tears over trifles.' This fictive reality of loveless sex has made Kumudini a rebel woman. An Indian feminist poet Kamala Das says to the

real-life tragedy of a similar kind for whom marital love is a much craved-for but elusive reality—"The love that she receivers from her husband is nothing but 'an empty gift, an empty container, good for show.' She therefore, asks her woman- persona as—

> "woman, is this happiness, this lying buried
> Beneath a man ?"

Kumu rebels against the mismatch by dissipating her soul. So long Kumu has repeatedly said, "You bear with me,"—today the rebels mind says "How can I tolerate You?" she can not say of the child born out of such loveless lust. A couple of incidents which aggravate Kumu's bitterness and widens the breach between Kumu and Madhusudan. The hapless Kumu is shown to be trapped in gestation and child birth which do not result from sex-love. Pravat Kumar Mukhopadhay writes in 'Rabindrajibani' (vol. 3 page 339) that — "The situation in which Kumu became pregnant is in a way 'legalized rape' by another name." Recent feminist studies focus on the importance of 'women's mothering' and the effect it has, especially its social implications on producing 'a fundamental structure of expectations in women and men concerning mothers' lack of separate interests from their infants and total concern for their infants welfare.

'Mrinal' is embodiment of the liberated women in the story "Stir Patra". Woman like Mrinal is rare in Bengali literature. Particularly by the time of the First world war, no author has devised means to evolve the woman character to that exemption. The author, Tagore, never took woman as an object of pleasure. According to him woman should be glorified as a woman, not as a wife blindly following of the age old custom. In this context we can remember the times from Tagore's essay, 'Narir Manusatya' — "*Amader deshe meyder pakshe lesh matra satantra dabi korle purush mahale tumul uttejana upasthit hoi. Biswa jagate Kothao bangabashir najya adhikarer swadhinata*

nei.Rashtrakhestre amra parabash, samaje pade-padei badhagrastha. Amader ekmatra abadh adhikarer khestra amader stri." Rabindranath's mind was exercised over the question of woman's emancipation since quite a few years before this revolutionary discourse on Mrinal's individualism and emancipation. Even since the beginning of the 20th Century in Bengal, especially in the middle class society of urban Bengal, individualism became a strong force in life. In the mother-in-law dominated family the identity of the woman does not lie in attaining the position of the daughter-in-law-more important identity lies in the realization of a close independent family-exclusively conjugal relationship. This sense of individuality expresses itself in a desire for an independent existence for the woman as woman, quite distinct from her husband.

In the story of 'Dena Paona', Nirupama, the heroine of the story, silently records her remonstrance against the system of dowry prevailing in the society by getting shelter in the lap of death. She secretly kills herself but does not submit herself to injustice and torture.

In the same way, 'Haimanti', the brilliant heroine of the story, named on her, is a woman of extraordinary personality. She is above narrow mindedness and has natural inclination to protest against the bad customs.

In this way Rabindranath has made a discourse of the traditional Indian way of life in the circular structure and has registered a triumph of patriarchy by highlighting the pitfalls of the women's unsolicited empowerment. Throughout of his life Tagore thought on this subject and made heroic affords to inspire the woman that she should realize her position not as a woman but as a human being. He truely believed that women are placed at a position of great importance. Sometimes as a wife sometimes as a mother or a sister or daughter, a woman has strengthened the relation among the different members of

the family. Women are the peerless creation of God. So, his stories dwell upon the theme of equal right for women and their fullest development. Hence Rabindranath Tagore is the most progressive author, as no other writer in Bengali literature has given a galaxy of such strong mined Indian women till now. ❐

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WORKING CAPITAL MANAGEMENT

Manoj Kumar Kedia*

Introduction

In popular sense working capital means the capital required for meeting day-to-day operational needs of a business enterprise. Working Capital is the life line of every business concern. No business firm can progress without adequate Working Capital. Inadequacy or mismanagement of working capital is the leading cause of business failure.

The concept of working capital has been a matter of great controversy among the financial experts. Broadly speaking, different views on working capital can be categorized into two groups, viz., gross concept and net concept. According to gross concept working capital refers to an enterprise's total current assets, while as per net concept working capital represents excess of current assets over current liabilities.

Objectives of Working Capital

In general term ,working capital management is concerned with the problems that arise in attempting to manage the current assets, current liabilities and the inter-relationship that exist between them. The object of working capital management is to manage the concern's current assets and current liabilities in such a way that an adequate working capital is maintained which provides a business with operational flexibility.

Importance

Working capital Management has acquired important position and great significance in the recent past. It is reflected

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by the fact that financial manager spend a lot of time in managing current assets and current liabilities. Arranging short term financing, negotiating favorable credit term, controlling the movement of cash, administrating accounts receivables and monitoring the investment in inventories consume a great deal of their time.

A business enterprise requires adequate working capital for the following reasons –

(a) To meet the day to day requirements during the period of its operating cycle.

(b) To make optimum use of plant and machinery for purposes of full capacity utilization.

(c) To provide proper liquidity and to increase the profitability of the concern.

Kinds of working capital :

On the basis of concept, working capital is classified as gross working capital and net working capital. This classification is important from the point of view of Financial Manager. On the basis of time, working capital may be classified as Permanent or fixed working capital and Temporary or variable working capital.

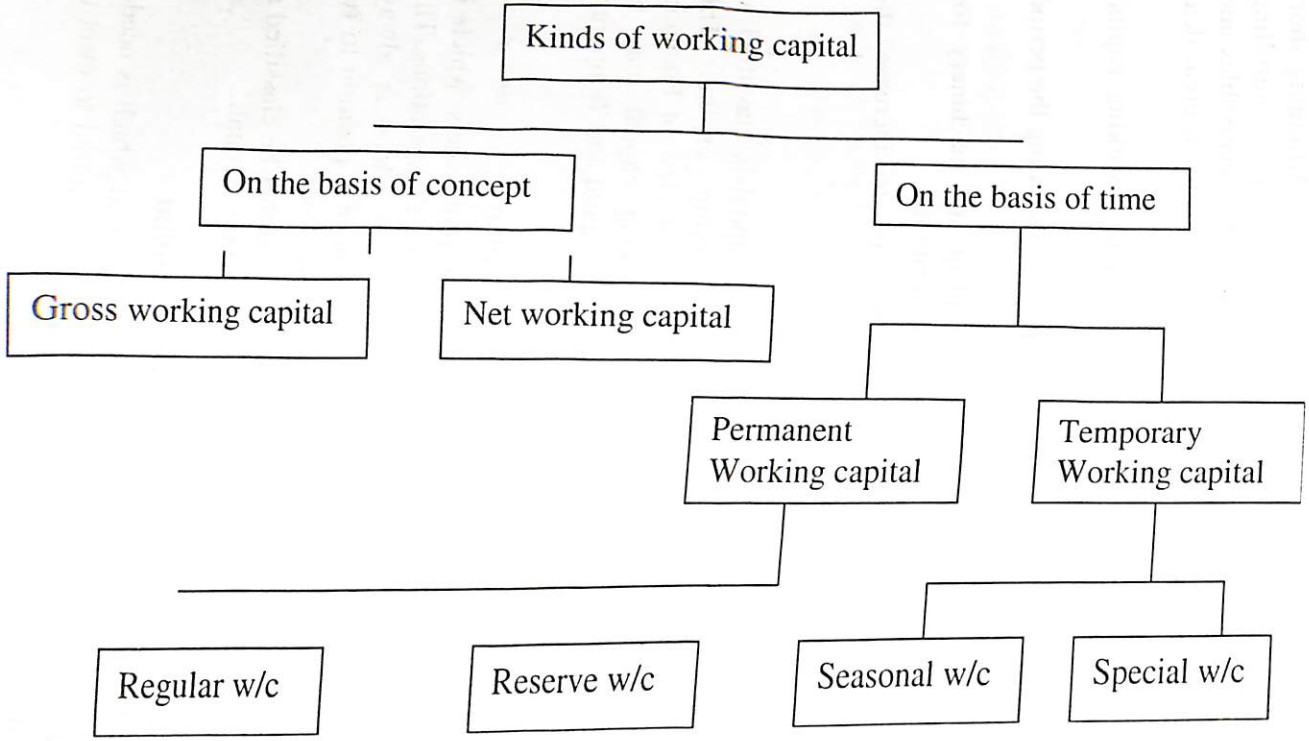
1. Permanent or regular Working Capital

It is the minimum amount of current assets which is continuously required by a firm to carry on it's operations. This is the minimum level of working capital which is always maintained by a firm, so that it might be in a position to run the business in the dullest season of the year.

The permanent working capital can further be classified as regular working capital and reserve working capital.

2. Temporary or seasonal working capital

It is the extra amount of working capital which is needed during the busier season of the year .It is required to meet the seasonal demands and some special working.


Kinds of working capital
On the basis of concept
On the basis of time
Gross working capital
Net working capital
Permanent Working capital
Temporary Working capital
Regular w/c
Reserve w/c
Seasonal w/c
Special w/c

Determinants of Working Capital

The quantum of working capital requirement for a business is determined by its size, yet there is every likelihood that it may not be exactly in the same proportion. With the expansion of the volume of business, the requirement of working capital may go up or may even go down, depending upon a number of internal and external factors.

Internal factors

These factors are within the control of management. More emphasis is needed to study such factors for the management of working capital. These factors are :

(i) **Inventory turnover :** Higher turnover ratio results the lower amount of working capital required.

(ii) **Time taken in conversion of receivable into cash :** Allowing of less time in collection of receivable leads lower the amount of working capital needed .

(iii) **Terms of purchases :** The higher is the lag of time for payment is the lower requirement of working capital.

(iv) **Credit standing :** A firm with high credit rating is required to have less working capital than a firm having a low rating.

External factors :

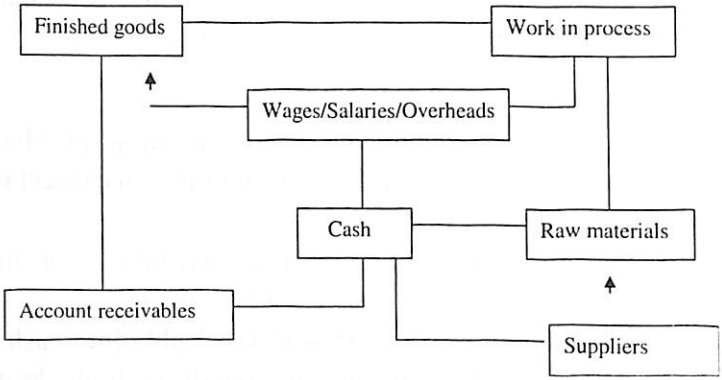
These factors are outside the control of management. Such factors are :

(i) **Time required for the manufacture of goods :** The longer the time required for the manufacture of the goods, the larger is the requirement of working capital.

(ii) **Cyclical and seasonal changes :** During the upswing of the cycle and the busy season usually a large amount of working capital is required.

Working Capital Cycle :

Current Assets are of short life span. They are transformed into other assets forms. A typical cycle of transformation can be depicted as under :



Working Capital Cycle

A company buys raw materials for cash , processes them into work in process to finished goods by spending money on wages, salaries and other administrative and factory overheads. Goods are sold on credit which results in accounts receivables. When the customers pay their bills, the firm draws out its profit and replenishes the cash balance.

Mathematically, operating cycle O is defined as

$$O = R + W + D - C$$

Where, O = Duration of operating cycle
R = Raw materials and stores storage period
W = Work in process period
F = Finished goods storage period
D = Debtors collection period
C = Creditors payment period

Circulation system of working capital

The funds of a manufacturing concern are obtained from various sources such as issue of shares, the issue of debentures,

long term and short term borrowings, and ploughing back of profits of business .A huge part of generated funds is used to purchase fixed assets like plants and machinery , land and building etc, while the remaining part of the generated funds is used for day to day operation of the business i.e. to pay wages and overhead expenses for raw materials processed. On sale of finished goods either cash is received or account receivable are created. In this process profits are generated. A part of the profit is used to pay tax, interest and dividends while the remaining part is ploughed back in the business. This cycle goes on throughout the life of business, as shown in Fig. 2.

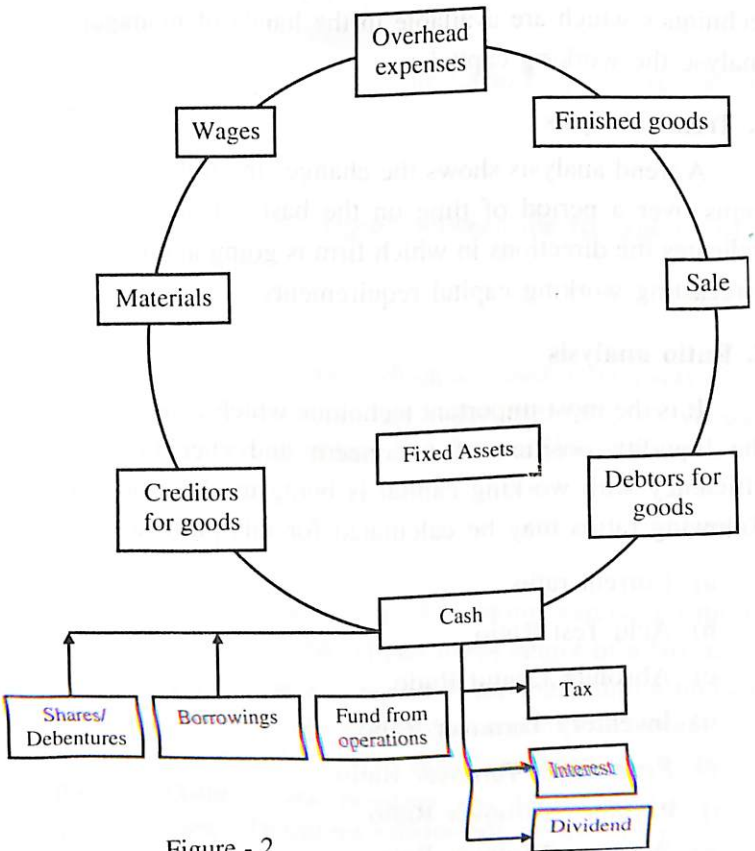


Figure - 2

Circulation system of Working Capital

Techniques of Working Capital Analysis

Analysis of working capital is very important to find out proper answer to the following questions :

(a) Is the amount of Working Capital adequate or inadequate?

(b) Is the management using working Capital efficiently and effectively ?

(c) Will the firm be able to pay it's short term obligations as and when they mature? Etc.

The following are some of the commonly used tools and techniques which are available in the hands of management to analyse the working capital :

1. Trend analysis

A trend analysis shows the changes in an item or group of items over a period of time on the basis of standard year. It indicates the directions in which firm is going and thus helps in forecasting working capital requirements.

2. Ratio analysis

It is the most important technique which is used in judging the liquidity position of a concern and checking upon the efficiency with working capital is being used in the firm. The following ratios may be calculated for this purpose—

a) Current ratio
b) Acid Test Ratio
c) Absolute Liquid Ratio
d) Inventory Turnover Ratio
e) Receivables Turnover Ratio
f) Payables Turnover Ratio
g) Working Turnover Ratio

3. Fund flow analysis

This technique helps to analyse changes in working capital components between two dates. It shows changes in types of current assets, as well as source from which working capital has been obtained.

4. ABC Analysis

The materials are divided into a number of categories for adopting a selective approach for material control.

5. Economic Order Quantity

It is the size of the size of the lot to be purchased which is economically viable.

6. Lead time

It is the period that elapsed between the recognition of a need and its fulfillment.

7. Statistical Technique

The Statistical techniques which are used in the analysis of working capital management are : (a) Measures of central tendency (b) Measures of dispersions (c)Analysis of time series etc.

Conclusion

The firm should maintain a sound working capital position. Working capital is the life blood and nerve center of a business. Just as circulation of blood is essential for maintaining human body, adequate working capital is very essential to maintain the smooth running of a business. Both excessive as well as inadequate working capital position are dangerous from the firm's point of view. Therefore various components of working capital should be managed in such a way so as to have a good liquidity coupled with adequate profitability and high financial strength. ❐

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