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Let noble thoughts come to us from every side
Rig Veda

CONTENTS

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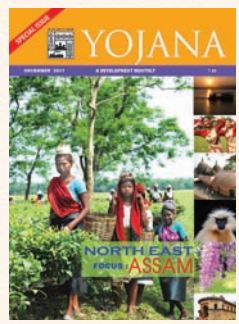
NORTH EAST

(Map not to scale)

About the Issue



The eight north eastern states of India are characterized by their unique cultures, diversity of ethnic groups, rich natural resources and flora and fauna. Flanked by hills and the mighty Brahmaputra river slashing a central path from north to south, the north east is constituted by the States of Arunachal Pradesh, Manipur, Meghalaya, Mizoram, Nagaland, Tripura, Assam and Sikkim. The NE region covers an area of 2.62 lakh sq.km and accounts for 7.9 of the total geographical area of the country. This region is land-locked with long international borders and only a chicken neck corridor connecting it with mainland India.

Due to its peculiar physical, economic and socio-cultural characteristics, the economy of the North East has a distinctive identity. Despite its rich natural endowments, this region represents one of the least developed - economically and industrially -regions of the country.

In view of being a strategically and geo-politically sensitive frontier, Government of India is emphasizing on bridging the gaps in infrastructure, communication, health, education and other integral areas of development of the region with the rest of the country.

The theme for the December issue of Yojana is North East with focus on Assam. Assam is the gateway to the North East and has a history dating back to the Vedic ages and has been known successively as *Pragjyotisha* and *Kamrupa*. *Asom* meaning 'unparalled' or its anglicized version Assam is a comparatively modern name. Demographically, Assam is the most populous state of the region and economically it is the most developed of the eight north eastern states. Yet, compared to other developed states of the country, Assam lags behind in almost all economic spheres. Insurgency and law and order problems also have had a deleterious effect on the development of the state.

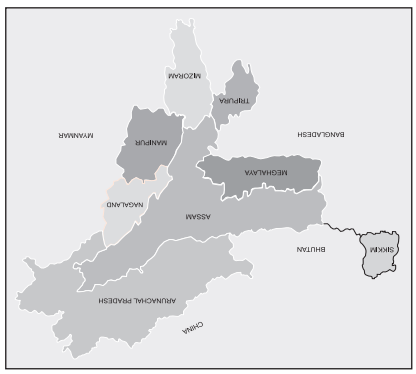
However, the state economy during the first four years of the Eleventh Plan registered an average annual growth of 6.76 percent (GSDP at constant 2004-2005 prices). The growth during the period was due to the result of annual average growth of agriculture and allied sectors at the rate of 4.86 percent, industry sectors at the rate of 2.07 percent and service sector at the rate of 9.7 percent. Economic Outlook 2010-2011 has also indicated that Assam with low per capita income is catching up with other prosperous states in the period 1999-2000 to 2008-2009.

In recent times, efforts have been made to establish manufacturing industries based on the available natural resources and promote small-scale industries based on raw materials available. The Look East Policy also needs to be examined to open up Assam and the North- East to South-East Asia to facilitate free movements of goods and people between this part of India and the South East Asian countries. The tea industry, tourism, small scale industries are some areas in which there is immense scope. The major challenges therefore are developing the power, transport and road sectors. The state also has a pool of highly qualified technically skilled people. It has a large number of institutions of higher education, and Assam can produce a sizeable workforce for information based service industries, since these industries will require low investments in physical capital and infrastructure. All these issues need to be addressed holistically and region specific policies formulated to speed up the process of development.

In this issue we bring to you articles on various aspects of development in the North East in general, and Assam in particular.

Look East Policy: A Receding Hype or A Realizable Hope?

Madhurjya Prasad Bezbaruah



Time is ripe for taking up more intensive diplomatic initiatives and decisive steps forward to give the 'Look East' policy a substantive content from the Northeast perspective

THE 'LOOK East' policy (LEP), initiated by the Government of India in the early 1990s, generated considerable optimism in India's Northeast region. Beset with partition-inflicted geographical isolation and persistent economic retardation for decades, the region suddenly saw in the policy an opening of opportunities for breaking free from the shackles of isolation and progressing by linking with the prosperous Southeast Asian economies. These expectations have however remained mostly unrealised for nearly two decades now. The present paper looks into the contents of the policy and then takes up the question whether the policy can deliver the expectations of the region from it.

The Policy and its Manifestation

Dated back to 1992, the 'Look East' policy has in fact never been formally stated. In the words of Pudaite, a former Indian diplomat hailing from Mizoram who was involved in shaping the policy, it broadly refers to "the ongoing process of a series of initiatives for broadening and deepening our economic and other cooperation with the countries in the dynamic growth regions of Southeast and Northeast Asia" (Pudaite 2007: 8). Coming at the heel of India embarking upon a market-oriented economic reform programme, the conscious initiative for "deepening and broadening" of ties with the East and Southeast Asian countries was understandably inspired by success of these countries from their market-based outward oriented development approach. In practice, manifestation of the policy can be seen in the form of India's expanding trade relation with countries of East and Southeast Asia and attempts to forge closer economic ties with these countries by involving in multi-country regional formations.

Following the adoption of the Look East Policy, trade relationship of India with the eastern countries expanded rapidly. Apart from a dip in the volume of trade during the East Asian economic crisis in the late 1990s, India's trade with the

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Association of Southeast Asian Nations (ASEAN) region has had a rising trend (Sen et al 2004). The composition of the Indo-ASEAN trade has also undergone change from predominance of primary products to manufactures (Sarma and Mehta, 2002). In the last decade, India's trade ties with China have also had an upward trend.

In a bid to further enhance economic ties with the eastern neighbours, India has got engaged with these countries in several regional formations such as BIMSTEC, Makon Ganga Cooperation (MGC) and Kunming Initiatives. Efforts are now on for formation of India-ASEAN Free Trade Area.

Initially conceived as a group for economic cooperation among Bangladesh, India, Myanmar, Sri Lanka and Thailand, BIMSTEC was expanded in 2004 to include Nepal and Bhutan and renamed as Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation. The group has already adopted a Framework Agreement for a BIMSTEC Free Trade Area, which is scheduled to be established over a period of nine years starting from 2006. The Mekong-Ganga Cooperation (MGC) was launched in Vientiane, Laos on November 10, 2000 when officials from India, Myanmar, Thailand, Cambodia, Laos and Vietnam issued a 'Vientiane Declaration' on the framework for cooperation. As of now the goals of this project have been kept limited mainly to promotion of tourism, improvement of surface and air connectivity, development of IT network, fostering closer social ties through cultural exchanges and university level networking among the member countries. Adopted in a conclave of non-official think tank groups and businessmen in 1999 in Kunming, the capital of Yunnan Province of China, the Kunming Initiatives aim to explore ways of sub-regional economic and cultural cooperation encompassing Bangladesh, China (especially its South-Western part), India (primarily the Northeast region) and Myanmar (BCIM). The main thrust of the forum has been to exhort government concerned to improve communication between South-western region of China and the North-eastern region of India by developing appropriate road, rail, waterways and air links. More specifically, a call was made to revive the ancient silk route between Assam and Yunnan – the target being on opening the Stilwell Road. The pace of concretization of the different formations has however been uneven and substantial progress has been made so far only in case of BIMSTEC.

The LEP and India's Northeast Region

The Look East Policy generated considerable optimism in the Northeast region of the country which had persistently lagged behind the rest of India in pace of economic development ever since the time of independence (Bezbaruah 2010). Partition of the country in 1947 snapped most of its connectivity with the rest of India and the world. Resultant geographical isolation and the consequent hike in the cost of movement of man and material to and from the region suddenly halted the industrialization process taking place in the region during the colonial period. The prospect of opening up eastward and connecting to the prosperous East and Southeast Asian economies aroused expectation of being freed from this shackle of geographical isolation. But as the initial euphoria settled down, several doubts started surfacing, questioning the prospects of such expectations turning into reality.

Will the LEP by-pass the Region?

Doubts have been raised about Northeast India being able to produce significant exportable surplus to meaningfully take part in the trade. Such doubts are however not necessarily warranted. For, opening up of trading may unleash new dynamics leading to emergence of new opportunities. Assam, for instance, can look to export its excess refinery products in the nearby markets than marketing the same in the distant parts of India which will involve higher transport cost. Indian manufactured products originating outside the region are now informally exported across Indo-Myanmar border. Once trade in these items across this border is legalised, the Indian manufacturers will be able to explore and exploit markets in the east more extensively. The way the Chinese have established production centres near the border and even inside Myanmar to penetrate into cross border markets, the Indian manufacturers can set up production base in the Northeast for catering to the markets in Myanmar and beyond. There are now added economic incentives for doing so as an attractive package of fiscal and other concessions has been provided for new industrial units in the region under the North East Industrial and Investment Promotion Policy 2007 of the Government of India.

Even if the region does not produce exportable goods in any significant scale, the region will still be able to export variety of services, such as transportation, hospitality, financial services, healthcare and education. The ripple effect of trade in services will benefit the goods producing sectors of agriculture and manufacturing at the secondary level.

The critical question in this context is whether the enhanced trade between India and her eastern

neighbours will flow through the Northeast India-Myanmar corridor. To the extent that the merchandise needs to be transported between mainland India and Southeast Asia, the continental route through Northeast India and Myanmar has a competing alternative in the form of the maritime route across the Bay of Bengal. Summing up the issue Baruah (2004: p 23) writes, "Northeast India thinks Southeast Asian countries as their neighbours. But in the maritime sense the east coast of India – Orissa, Andhra or Tamil Nadu – is also next-door to Southeast Asia. Indeed, historically mainland India's ties with Southeast Asia is more maritime-oriented than continental. As it has been in the past, even in modern times it is cheaper and less troublesome for India to trade with Southeast Asia by sea than by land. The land route not only goes through a difficult physical terrain, there is a perception that the route is full of danger. It may be tempting, therefore, for India to have relationship with Southeast Asia that is primarily maritime rather than continentally oriented."

It is true that little of the expanding India-ASEAN or for that matter the China-India trade, has moved through the Northeast India-Myanmar continental route. With the existing state of connectivity, the land routes today are perhaps not conducive for India to trade with countries beyond Myanmar. But once the ongoing surface connectivity initiatives across the Northeast India–Myanmar region are implemented, the cost calculations well turn in favour of the continental route. The Asian Railway and Asian Highway projects initiated and pursued by UN-ESCAP are to connect West and South Asia with East and Southeast Asia through Northeast India, Myanmar and Bangladesh. Further, there are several other ongoing projects for improving surface connectivity across the Northeast India-Myanmar region. These include the proposals to extend Moreh-Kalewa road to Kalemyo and Mandaley in the heart of Myanmar, to connect Champhai in Mizoram with Tidm and Falam in Myanmar and to connect the Northeast region to the port Sittwe on the Bay of Bengal by developing Kalodyne River in Mizoram and Myanmar as a navigable waterway. As these projects get completed, the connectivity scenario will change markedly and the Northeast India-Myanmar can then turn into an active trade corridor between South Asia and East Asia.

Will Myanmar Block the Way? Will the China Factor Ease?

More than the connectivity problem, formidable blocks in Northeast India's prospect of opening up eastward remain in the form of the state of affairs in Myanmar and the India-China unease relating to the region.

Between Northeast India and the prosperous East and Southeast Asia stands Myanmar. Not only has the economy of the country remained backward but the economic system there is also anachronistic. Its currency at the official exchange rate is overvalued about 150 times. Modern banking system is virtually non-existent. Though Indo-Myanmar Border Trade agreement has been there since 1995, the official border trade has long been reduced to a trickle. Informal border trade (an honourable sounding phrase for open smuggling) has stagnated following abolition of quantitative trade restrictions by India under the WTO agreement (Bezbaruah 2007). Unless the economic system in Myanmar is reformed, or at least an arrangement is worked out to trade with and through Myanmar at the unofficial exchange rate, it is difficult to foresee the Northeast Indian economy finding a link-up with the prosperous economies beyond Myanmar. Fortunately, there have been some hints of positive development in Myanmar in the recent months.

Despite the upswing in the volume of trade between India and China, little of this traffic has crossed over the border in India's northeast region. Considerable mistrust persists between the two countries regarding exchange and communication across India's north-eastern border. China's periodic claim over Arunachal Pradesh has not made matters easier in this regard.

Conclusion

To enable Northeast India to profit from the 'Look East' policy, it will be necessary for the Government of India to engage the immediate eastern neighbours of Myanmar and China for greater cross country cooperation and closer economic ties. Indeed such a process is an imperative to address the trans-border problems of drug-trafficking, arms smuggling and movement of insurgents that afflict the region. Government of India's policy for addressing the problems of the Northeast region includes components like placing the states in the region in special category for fiscal devolution, earmarking fund in a non-lapsable pool to be invested for clearing backlogs in infrastructure and basic services, and incentive package for inducing industrial investment. It is now becoming increasingly clear that the policy requires another dimension that will be in the purview of the Ministry of External Affairs. Keeping the door shut or taking up only half hearted approach to countries surrounding the region in the name of India's security concerns will amount to missing out on an opportunity for the region. Time is ripe for taking up more intensive diplomatic initiatives and decisive steps forward to give the 'Look East' policy a substantive content from the Northeast perspective. ❑

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Micro Finance in the North East

Amiya Kumar Sharma

This is a great balancing force in the region and has contributed to positive development in all aspects of the region

IN ORDER to appreciate the development of the micro finance movement in the NER one has to look at the background of the development of the region with respect to the government funds being expended, the banking scenario and the adjustment to the situation by the society. Any leader in Assam these days is able to point out the most striking aspect of development history of undivided Assam since the beginning of the planning process in India - that the undivided Assam's per capita income was higher than the all India average in 1951 and today it is almost 30 percent less than the Indian average. Definitely something more than the mere loss of connectivity after the formation of East Pakistan must have happened.

The Central Government has been giving funds for the development of the region which, based on the per capita income looks to be sizeable. But when it is viewed in the context of the geographical area to be developed and infrastructure needed, it is not really enough. In fact the Shukla Commission mentioned that the gap was more than Rs 80,000 crore in 1997 at prices of that time. Even the North Eastern Council calculated that to reach the all India level of per capita income by 2020, there would have to be investment of about Rs 1 lakh crore per year in the region. These numbers tell us only one part of the story, although an important part.

But even without the government meeting all the needs, the region could have developed faster had the private initiatives been supported properly by the banking system. But once again it is common knowledge that that has not been so and this is brought repeatedly by the Credit-Deposit ratio which is much lower than the all India average. The region's economy is mainly based on the primary sector and the banks normally prefer to give loans for non-primary sector activities.

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But even then it is seen that the minimum target of 18 percent that the sector deserves according to the banking norms is not met although somehow the priority sector lending has been met most of the time. There are problems related to information asymmetry but that is everywhere in India. What is more striking is that the officials are mostly from the outside the region and they work in the region with a lot of fear in their hearts. Naturally, when someone is offered disproportionate incentives to go and work in the NER, the first reaction would be to read between the lines and come up with a scary scenario about the region.

Aversion to work in the NER is further contributed to by the media who are wont to report only the bomb blasts in the region. One wonders how many of them do report, for example, that one rarely comes across beggars on the streets in the NER. More academically, how many of them know that while the per capita income in the region is lower than the Indian average, the poverty percentage is better (lower) than the all India picture!

Besides the fact that there is better income distribution in the region, there is something else which perhaps explains the fact that NER's poverty scenario is very 'encouraging' in spite of its low per capita income. And that could be the system of community living – an aspect of the social capital of the region not easily noticed in the rest of India. In most of the communities in the region, while the poor members are given food and other assistance by the other members there is also a system that the common pool of funds can be used to lend to members for other needs. Perhaps it is for this reason that exploitation in the sense of landlord-tenant has not been common. Such loans from the community pool are expensive by banking standards, but then banks are not there to cater to such clients. In Assam the '*sanchays*', in Manipur - the '*Marups*' - are well known institutions. Some *sanchays* can give loans up to one lakh within minutes. Even while not dealing with the loans per se, the communities do come to assist the people by organizing for such loans from the members. Thus micro finance in the NER has been there since ages, but not as in the form propagated by Md Yunus or NABARD.

Looking back one can confidently say that Rashtriya Grameen Vikash Nidhi's (RGVN) birth in 1990 signaled the growth of present MF in the region. With its returnable grants scheme innovated mainly by Sri S M Palia - formerly with IDBI - RGVN helped the small NGOs dealing especially in livelihoods of the poor, get hold of a small sum to be revolved amongst the people. By 2010 the number of such organizations had shot up to nearly seven hundred in the NER – the number being inclusive of a few NGOs operating like SHGs. Today most of the NGO- MFIs in the region owe their existence to RGVN. RGVN taught them the fundamentals of fund management and accounting. It has been noticed that the NGOs in the region were more adept at collecting savings from the field, as done by the *sanchays* and the *Marups*. This is because of the lack of banking facilities. Quite a few NGOs were formed out of the '*sanchays*' because of the possibility that it would be able to borrow from RGVN and also from the formal financial institutions in future. It is also true that banks and financial institutions received the NGO-MFIs much better if they were already a partner of RGVN.

By 1995 RGVN set up its own direct lending programme called RGVN-CSP because it was felt that although many NGOs were doing MF at that time they would not be able to serve all the corners in the region. Thus RGVN-CSP was the first MF organization in a sense, although it did not have any registration on its own. Initially it was aimed to be registered as a section 25 company called 'Luit Micro Finance'. Today it is registered as the RGVN (NE) MF Ltd., a public limited NBFC.

Meanwhile RGVN's partners started growing in size and today quite a few of such organizations have outstanding portfolio of more than Rs one crore – quite high by NER standards. Smaller 'NGO – MFIs' are more than two hundred in number in the region. These NGOs are not pure MF operators and have various other activities. NGOs dealing only with MF are very few in the region. Perhaps they know that loans from the financial institutions are not going to be easy for them. Thus they have to play a balancing act even though the government grants and even donor funds do not come easily to them.

Some other organizations which have contributed to the development of MF in the region are SIDBI, NABARD, NEDFi. SIDBI too was instrumental in promoting MF in the region. Initially it tried with some small loans to NGOs – although these were not in the form of pure MF. A second phase of SIDBI loans to MF- NGOs started around the middle of the last decade. This

was mostly to the existing partners of RGVN like Adarsha Sangha in Tripura, Nightingale Charitable Society in Assam. In any case SIDBI's assistance came as a big stepping stone for the NGOs that were selected.

NABARD gave more emphasis on SHGs. The NGOs that it supported with revolving funds for MF included RGVN, ASOMI in Assam, YVO of Manipur, to name a few. MFIs who are registered as NBFCs are very few in the region, perhaps not more than ten. Some NGOs are purchasing old NBFCs to cross the hurdle of 'collecting' Rs 2 crore to register a new one.

NEDFi took up a scheme for MF to reach the remote areas since there was pressure on it - and it was unable to serve all the corners as a new organization. Initially it took off from where RGVN had left - to choose the larger NGO partners of RGVN and give them larger sized loans. Its first loan was to SDCC, an NGO in Assam and soon it reached many NGOs all over the region. NEDFi was very proactive in trying out the traditional institutions for carrying out MF. Its experiment with the village council in Nagaland was a learning experience and even SBI tried to follow it up later with such funding to village councils in Nagaland. It is worth mentioning that the traditional institutions will need some special training before they can be used as banking institutions. Government or the RBI should take up that activity since there has been much discussion on this. It will help disburse loan without collateral in most parts of the region where land is community owned.

Government of Assam has not really been encouraging the formation of NGOs, especially the NGO-MFIs. There is the requirement of renewal by the NGOs every three years and the difficulty in registration and renewal make most people stay away from forming NGOs. In the state, most NGOs were formed for non-livelihood activities like advocacy, environment, nature, gender etc. but once the NGOs learnt that they could also do MF it became a very attractive tool to assist the people without depending on grants. Some of the *sanchays* were formed when the youths did not want to go through the trouble of getting an NGO registration. Two things happened recently and almost simultaneously.

One, thanks to the Chief Minister and some dynamic officers in the Government of Assam Rs. 10 crore was made available to the Assam Financial Corporation to help NGO-MFIs in Assam receive funds at cheaper rates so that the borrowers in turn could borrow at a low rate. Everywhere else in India the authorities cried about the high interest in the MF sector but did nothing much to prevent this –exception being Andhra Pradesh. In that light the step by the Assam Government was a laudable step. A few good NGOs were selected and were given loan funds.

Two, around the same time a circular was issued by the Finance Department of Assam, that NGOs cannot engage in MF – nor SHG promotion since these are profit making activities. This came as a big blow to the NGOs and the MF sector in the state; as it is, the Andhra Pradesh crisis had almost brought lending by the commercial banks to the NGOs to a standstill. The commercial banks in the case of MF loans were the last to come to the scenario. But as soon as there was some problem in Andhra Pradesh and the one created by the Assam Government and even the All India Financial Institutions were quick enough to 'show' helplessness regarding NGO loans and even grants. Some of them went to the extent of discouraging the collection of savings that the NGOs were carrying on – so that the NGOs were left in a more hopeless position.

Today, the MF situation in the NER is like in the other parts of India; but worse because of the confusion in the minds of the government officials. This confusion is also created by the presence of many fly-by-night 'cheat' funds which have been taking the people of the region for a ride every now and then. There is also some fear in the hearts of the NGO-MFIs of the region that they may be taken out of 'business' by the big MFIs like Bandhan, Ujjivan, Arohan etc. who have started their operation in the NER.

In spite of all this, the NGO-MFIs in the NER have been more well–meaning and the cut-throat competition which is hurting the poor as seen in Andhra Pradesh and other places is not seen here until now. One very important aspect to be pointed out is that in the NE there is an extra-judicial force - that of students' associations and organization which will not tolerate any wrong doing affecting the poor people of the region. Once again this is part of the social capital of the region keeping the things under control. This is a great balancing force in the region and has contributed to positive development in all aspects of the region. ❑

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Nuclear Power is our Gateway to a Prosperous Future

APJ Abdul Kalam
Srijan Pal Singh

Our nuclear programme is one of the indispensible keys to our future and our technological leadership, political leadership and every citizen of the nation must realize this

EVERY SINGLE atom in the universe carries an unimaginably powerful battery within its heart, called the nucleus. This form of energy, often called Type-1 fuel, is hundreds of thousands of times more powerful than the conventional Type-0 fuels, which are basically dead plants and animals existing in the form of coal, petroleum, natural gas and other forms of fossil fuel. Imagine a kilometre-long train, with about 50 freight bogies, fully laden with about 10,000 tonnes of coal. The same amount of energy can be generated by 500 kg of Type-1 fuel, naturally occurring Uranium, enough to barely fill the boot of a small car. When the technology is fully realised, one can do even better with naturally occurring Thorium, in which case the material required would be much less, about 62.5 kg, or even less according to some estimates.

Energy and economy

Energy is the most fundamental requirement of every society or nation as it progresses. Look around you: every step into progress comes with an addition of demand for energy-cars, ships and aircraft to move, hospitals to give quality healthcare, education, as it follows the model of e-connectivity, production of more and better goods, irrigation for better farming.

Today, India finds itself going through a phase of rapid ascent in economic empowerment. Our focus for this decade will be on the development of key infrastructure and the uplifting of the 600,000 villages where 750 million people live. All this will need massive energy. It is predicted that the total electricity demand will grow from the current 150,000 MW to at least over 950,000 MW by the year 2030.

Dr. A.P.J. Abdul Kalam is former President of India and Mr. Srijan Pal Singh is an expert in Sustainable Development.

Analysing the international scenario on nuclear energy

So, will we allow an accident in Japan, in a 40-year-old reactor at Fukushima, arising out of extreme natural stresses, to derail our dreams to be an economically developed nation? When a few European countries, particularly Germany, decide to phase out nuclear power that should not become a blanket argument to take a view against our nuclear programme.

The decision of Germany suits its current scenario. It is a relatively power-sufficed nation and economically developed — so it can afford to lose a few plants. More important, Germany has completely exhausted its nuclear resources. Thus, nuclear energy never fits into its goal of energy independence. India, on the other hand, is the leader of the new resource of nuclear fuel called Thorium, which is considered to be the nuclear fuel of the future.

The Indian population is misled when it is said that some Western nations have ended their nuclear programme, or that Japan is reconsidering nuclear power plant expansion. The study indicates that most of the prosperous nations are extracting about 30-40 per cent of power from nuclear power. In India, we are not generating even 5000 MW of nuclear power from the total of about 150 GW of electricity generation, most of it coming from coal.

We should be careful not to be carried away by the barrage of anti-nuclear news. What is needed for our India, we Indians have to decide.

Kudunkulum Nuclear Plant

India is blessed with the rare, and very important, nuclear fuel of the future – Thorium. We cannot afford to lose the opportunity to emerge as the energy capital of the world. India has the potential to be the first nation to realise the dream of a fossil fuel-free nation, which will also relieve the nation of about $100 billion annually which we spend in importing petroleum and coal. Besides, we are also importing millions of tonnes of CO_2 and other greenhouse gases, which are a hazard to the environment and human health.

The greenest sources of power are definitely solar and wind. But solar and wind power are not stable and are dependent excessively on weather and sunshine conditions. Nuclear power, on the other hand, provides a relatively clean, high-density source of reliable energy with an international presence. Today, there are 29 countries operating 441 nuclear power plants, with a total capacity of about 375 GW(e). The industry now has more than 14,000 reactor-years of experience. Sixty more units, with a total target capacity of 58.6 GW, were under construction.

Much of the destructive power of nuclear accidents is compared against the benchmarks of the atomic bombing of Japan by the U.S. forces during the Second World War. Pictures of mushroom clouds looming over cities, charred buildings, and massive death scenes are awakened to form our opinion of nuclear disasters. But that is far from the reality. You cannot compare a nuclear bomb with a nuclear power plant. Civilian nuclear applications in the form of a power plant are designed to deliver small amounts of energy in a sustainable manner over a far larger time frame.

Humankind's ability to combat nuclear challenges

We need to put the Fukushima-Daiichi events in the historic frame of nuclear accidents and analyze them. While there was huge loss

to property and disruption of normal life, there was no direct loss of life due to the accident. As a silver lining, the way the accident was handled - compared to the Chernobyl disaster of 1986 - showed how much progress we have achieved in nuclear emergency management over a period of two and half decades. The Fukushima-Daiichi plant was almost five times as big in terms of power generation and contained about nine times the nuclear fuel at the time of the accident. Yet, with better emergency management learnt over the years, the maximum radiation was less than 0.4 percent of that released during the Chernobyl disaster.

On 6th November 2011, both of us visited the much talked about 2000 MW Kudankulum nuclear plant to understand the plant's safety features and how it is addressing the concerns of the people which have inflated as an aftermath of the Fukushima Nuclear Event. We spent the whole day there meeting scientists and experts, meeting the local people and also studying the various facilities of the plant first hand. At the end we were absolutely satisfied to understand that this plant is equipped with the latest technologies when it comes to safety.

There are four important aspects of safety in a nuclear power plant which have been addressed in the plant.

1) **Structural Integrity Safety:** The structure of the plant has been made with the highest safety standards which doubled containment and hermetically sealed to be safe against earthquakes. To counter any risk from Tsunami and cyclones, the plant is elevated, to a minimum height of 6 metre (pump house) and the auxiliary diesel sets are at a height of 9.3 metre with a redundancy of four times in the diesel generators. In the case of Fukushima, one of the primary reasons for structural collapse was the explosion in the hydrogen which got out of control. To counter this, Kudankulum plant has installed 154 Hydrogen recombiners across the plant which can absorb any leaked hydrogen and prevent any structural damage.

2) **Thermal Hydraulic Safety:** The most advanced safety feature in the Kudankulum plant is the installation of the Passive Heat Removal System (PHRS) which is latest in technology to ensure rapid cooling of the reactor in the event of a reactor problem. The PHRS is a unique steam recirculating system which can continue to cool the plant in the event of the failure of AC power and even when the worst possible scenario of coolant malfunction has occurred, without leaking any radiation in the atmosphere. There is also mechanism to rapidly cool the reactor in emergency situation using an elaborate system of showers which are installed in redundancy across the plant.

3) **Neutronic Safety:** In any nuclear plant the most important cause of failure can be the loss of ability to control the neutrons being generated which is done by a system called control rods. Besides the control rods, the Kundankulum Plant has uniquely implemented the latest technology in this domain – The Core Catcher. This is basically an underlying structure with Gadolium oxide which would "catch the neutrons" in the event of a highly unlikely meltdown. The core catcher is the ultimate defense which would, without any human intervention, or need of external power supply, cool down the fuel and reactor.

4) **Waste Management:** A popular myth is that nuclear waste is dumped into the oceans which kills marine life and contaminates water. This is completely false. Yes, many decades ago, some of the nations used to dump nuclear waste in deep oceans away from habitat but that practice is over now. With the closed loop cycle the waste generated per year from 1000 MW plant is less than 3 percent and that, after vitrification would not occupy a space of about 6 cubic metres.

Another argument which surrounds the nuclear debate is that nuclear accidents and the radiation fallout as the aftermath would not only harm the exposed generation but also continue to impact generations to come. If available facts and scientific inquiry were given more weightage this argument will in all probability be proved a myth. Post Hiroshima and Nagasaki bombing in 1945, the U.S.

government established the Atomic Bombing Casualty Commission (ABCC) in 1946 to assess the late-effects of radiation among the atomic bomb survivors. In 1974, it was reconstituted as a joint venture between the U.S. and Japan as the Radiation Effects Research Foundation (RERF). The ABCC and the RERF have extensively studied the long-term impact of radiation and nuclear disaster across generations for over six decades now. Contrary to popular belief, the findings clearly state that the effect of such exposure is limited only to the exposed generation alone.

In the wake of the recent natural disaster impacting the Daiichi plant in Fukushima, two concerns are prominent. The first is that of safety against the plant's disaster, and the second relates to the environmental impact and the nuclear waste which the plant generates.

Let us consider the second issue first.

Opportunity cost of nuclear energy

a) Abstinence from nuclear power is an incomplete response without the logical alternative. In economics, there is a concept called "opportunity cost," which refers to the cost incurred when one chooses the next alternative. Some part of the future need, although only a small fraction, would come from solar and wind sources, with great unpredictability. A part would be offset by hydro-power too. But in all probability we will continue to increase our reliance on fossil-based fuel power generation methods.

Every year, human activities are adding about 30 billion tonnes of CO_2 into the atmosphere. The IPCC estimates that 26 percent of this emission (about 7.6 billion tonnes) is a direct consequence of electricity generation requirements. The WHO estimates that about 1.3 million peoplelose their lives as a result of urban outdoor air pollution alone, and about 140,000 are causalities to adaptation challenges of climate change. Thus, the pollution caused by power generation activities, and the climate change associated with them, are directly or indirectly responsible for about 481,000 deaths every year. Comparatively, in the case of the worst civilian nuclear disaster ever at Chernobyl, the United Nations Scientific Committee on the Effects of Atomic radiation (UNSCEAR) predicted up to 4,000 cancer cases (often curable) due to the accident, besides 57 direct causalities. Moreover, fossil-based fuels are fast depleting, and their scarcity is already inspiring geopolitical instabilities around the world.

Safety issues of nuclear power

b) Throughout the history of nuclear power generation there have been four major incidents of plant failure — the Kyshtym accident in fuel reprocessing in 1957, the relatively smaller Three Mile Island meltdown (United States), the much bigger Chernobyl accident (USSR, 1986) and the recent Japanese incident at Fukushima. The first accident was purely due to underdeveloped technology, and much of the blame for the next two disasters is attributed to human error. Even in the case of the Fukushima disaster of 2011, there were extraordinary natural forces in action — the rare occurrence of the tremendous stress load of an earthquake coupled with the unprecedented shear load of a tsunami. The occurrence of four failures in six decades cannot be made out as a case for completely disbanding the technology.

Let us take a few examples. In 1903, the Wright brothers translated into reality the remarkable dream of controlled human flight. In 1908, the first flight disaster occurred, which severely injured Orville Wright and killed his co-passenger. Today air accidents kill more than 1,500 people every year. Imagine whether we would be flying between distant cities, across oceans and continents, if the incident of 1908, or the ones later, were used as a reason to disband human flight? The mighty ship Titanic sank on its first voyage killing more than 1,500 people. The very first attempt to send man to the moon, Apollo-1, met with an accident and killed three prominent astronauts. It took another 10 missions, with mixed results, before Apollo-11 finally made it to the moon in 1969.

The Indian space programme, which is now ranked among the best in the world, started with a failure in 1979 when our first rocket, instead of putting the satellite into a near-earth orbit, went into the Bay of Bengal. I was the Mission Director of the launch, and we were accused of putting a few crores of rupees into the sea. We did not wind up our dreams. The mission continued and the next year we were successful. The argument is, of course, that all failures and accidents propel us to think and develop better and safer technologies towards better service. Improvement, and not escapism, should be our step forward.

Nuclear fuel of the future: Thorium

Let us introduce a lesser-known member among radioactive materials — Thorium. Thorium is far more abundant, by about four times, than the traditional nuclear fuel, Uranium, and occurs in a far purer form, too. It is believed that the amount of energy contained in the Thorium reserves on earth is more than the combined total energy that is left in petroleum, coal, other fossil fuels and Uranium, all put together. And information revealed in an IAEA, International Atomic Energy Agency Report (2005) on Thorium fuels indicates that India might have the largest reserves of Thorium in the world, with over 650,000 tonnes. This is more than one-fourth of the total deposits of Thorium; in comparison, we have barely 1 percent of the world's Uranium deposits. Thorium has many other advantages. It is estimated that Thorium may be able to generate (through Uranium-233 that could be produced from it) eight times the amount of energy per unit mass compared to (natural) Uranium. In the much debated issue of waste generation also, Thorium has a relative advantage. It produces waste that is relatively less toxic.

Being the largest owner of Thorium, and also being amongst the nations which will see the highest surge in power demand with its growth, the opportunity is for India to vigorously pursue its existing nuclear programmes with a special focus on research and development on the Thorium route as the long term sustainable option, which we are already undertaking.

The power of the nucleus is mighty and the future of humanity lies in harnessing it in a safe and efficient manner. Affordable, clean and abundant energy provided by nuclear sources is our gateway to a future that is healthy, learned and connected — a future that will span deep into space and crosses the boundaries of current human imagination.

Conclusion: History is written by those who stood for their ideas

I was asking myself "What did I learn from great thinkers who have brought transformation? From them I learnt no crowd mongers and no easy routes have ever brought progress and change to the nation. It is only the individual, the mighty mind and soul, which have transformed the worlds, brought the innovative transformation and he and she had the courage to stand alone for their idea and contribute which in course of time has been respected by the masses. I always cherish how Prof. Satish Dhawan can build a high performance, space organization which has today sent so many satellites in the orbit or how minds like Dr. C. Subramaniam and Dr. M.S. Swaminathan brought the green revolution which today has enabled us to produce 235 million tonnes of food from 50 million tonnes in 1960s. They stood against the fear of failure, didn't they? Our nuclear programme is one of the indispensible keys to our future and our technological leadership, political leadership and every citizen of the nation must realize this. ❑

National Manufacturing Policy

The Union Cabinet has approved the National Manufacturing Policy that aims to create 100 million jobs by 2022 and develop mega industrial zones with world-class infrastructure and flexible labour and environment regulations.

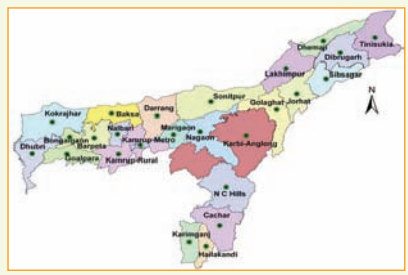
The Cabinet Committee on Economic Affairs headed by Prime Minister Manmohan Singh approved the policy that also aims to increase the share of manufacturing in the economy to 25 percent from the current around 16 percent.

According to the policy, the government would help establish 'national manufacturing investment zones' with world-class infrastructure and investment friendly regulations to boost manufacturing activities.

With over 220 million people estimated to join the work force in the next decade, the manufacturing sector will have to create gainful employment for at least half this number.

The policy envisages specific interventions broadly in the areas of industrial infrastructure development, improvement of the business environment through rationalisation and simplification of business regulations, development of appropriate technologies especially green technologies for sustainable development and skill development of the younger population.

ASSAM


Dhemaji
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Sonitpur
Golaghat
Jorhat
Kokrajhar
Baksa
Darrang
Nalbari
Morigaon
Kamrup-Metro
Nagaon
Karbi-Anglong
Dhubri
Bongaigaon
Barpeta
Goalpara
Kamrup-Rural
N C Hills
Cachar
Karimganj
Hailakandi

Infrastructure Scenario for the North East

Krishna Dev

Infrastructure development is a fundamental prerequisite for realizing the vision of progress towards peace and prosperity and for creating an investment climate and market development in the North East

THE NORTH Region (NER), "seven sisters" comprising of the States of Assam, Arunachal Pradesh, Manipur, Meghalaya, Nagaland, Mizoram and Tripura and it also includes the state of Sikkim. The region is known for its unique culture, handicrafts, martial arts, and scenic beauty.

The region is ethnically distinct from the rest of India and has strong ethnic and cultural ties with Southeast Asia, with strong ethnic cultures that had escaped Sanskritization in the ethnic groups of Kuki and some other tribes. Linguistically the region is distinguished by a preponderance of Tibeto-Burman languages. The most marked characteristics feature of this region is the low density of population in all areas other than Assam and Tripura. The very low densities in many parts of the region are attributable to the nature of the terrain and the population of this region as its rapid rate of growth which has tended to be substantially higher than the national averages. North East India is the gateway to and for South East Asia. It is the most prosperous region of India and plays a crucial role in the strategic and economic partnership. Approximately 4500 km of boundary is shared with the neighbouring countries viz. Nepal, China, Bhutan, Myanmar and Bangladesh. The problems including insurgency, unemployment, drug addiction, and lack of infrastructure are pulling the states into the backwardness. Since the beginning of the economic liberalization in the 1990s, various studies have shown that this region is lagging behind the others in terms of development.

It is recognized that the eight states form a special category, various organization, programmes,

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groups were set up to boost the development of the region: the North Eastern Council (NEC) was constituted in 1971 as the nodal agency for the economic and social development of the region, Hill Area Development Programme (HADP) in 1974, Task Force for study of Eco-development in the Himalayan region in 1981and an Expert Group on National Policy for Integrated Development in the Himalayas in 1992 were set up by the Planning Commission. The North Eastern Development Finance Corporation Ltd (NEDFi) was incorporated on August 9, 1995 and the Ministry of Development of Northeastern Region (DoNER) was set up in September 2001.

Of late there is a wide recognition among policy makers that the main stumbling block for economic development of the Northeastern region is the disadvantageous geographical location. The coming of globalisation propagates deterritorialisation and a borderless world which is often associated with economic integration. The 98 percent of its borders shared with China, Myanmar, Bhutan, Bangladesh and Nepal, the Northeast India has better scope for development in the era of globalisation. As a result, a new policy developed among intellectuals and politicians that one direction the Northeastern region must be looking to as a new way of development lies with political integration with the rest of India and economic integration with the rest of Asia, with East and Southeast Asia in particular as the policy of economic integration. With the development of this new policy the Government of India directed its Look East policy towards developing the Northeastern region. This policy is reflected in the Year End Review 2004 of the Ministry of External Affairs, which stated that: "India's Look East Policy has now been given a new dimension by the UPA Government. India is now looking towards a partnership with the ASEAN countries, both within BIMSTEC and the India-ASEAN Summit dialogue as integrally linked to economic and security interests, particularly for India's East and North East region."

As mentioned it is the most important region of India but after the Independence and formation of the States this region is lagging far behind with rest of India in most of the parameters of the development and growth. Infrastructure development is a fundamental prerequisite for realizing the vision of progress towards peace and prosperity and for creating an investment climate and market development in the North East. In fact, this is a basic prerequisite for development and has strong complementarities with measures to improve health and education as well as transport, industry and services. Expansion in the supply of basic infrastructure is extremely important for the development of the region. Apart from delivering essential services that improve the quality of life and livelihoods, these elements of the infrastructure are crucial for establishing a stable and peaceful society and hence for the progress and prosperity of the region as well as India.

Transport

Transport is of great importance in the region to strengthen its integration within itself, with the rest of the country and its neighbours, as well as to transport people and goods more effectively within and out of the region. It is a vital input for the proposed shift from subsistence agriculture to cash crop based farming, as well as the planned development of industry and the service sector. Most of the area in the region is hilly and undulating with low population densities, accompanied by low per area production of goods. In the hilly terrain, what it is in the NER (except in Assam and some parts of other states) development of inland waterways is the most expensive. Similarly, rail connectivity in such a terrain is not only time consuming but would need huge investments, probably beyond the means of the nation. It is road connectivity which would play a dominant role in fulfilling the transportation needs of the public. Air connectivity would certainly play a role for a limited segment of people and goods.

Construction of roads is of the highest priority for both Central and State Governments in the region. In the Eleventh Plan, under the various interventions of the Department of Road Transport and Highways, a very massive road construction initiative has started. The completion of this initiative has the potential to change the connectivity quality in the North Eastern Region.

The major network of transportation of goods and passengers in the North Eastern Region is the road network of 82,000 kms. This network is most developed in the Assam (35000 kms) and Arunachal Pradesh (15000 kms). The five other main States in the region have networks ranging from 5000 kms. to 9000 kms. The vast majority are the unpaved (Kutcha) roads, which are generally unsuitable for transport of heavy goods.

The Department of Road Transport and Highways has been paying attention to the development of National Highways (NHs) in the North-Eastern region and 10 percent of the total allocation is earmarked for this region. The total length of NHs in the NE, including Sikkim, is 6880 Kms and these are being developed and maintained by three agencies-the State PWD, Border Roads Organisation (BRO) and National Highways Authority of India (NHAI).

Special Accelerated Road Development Programme for the North Eastern Region (SARDP-NE) would cover improvement/ construction of 8737 kms road. The Phase-A of SARDP-NE would provide the connectivity of all State Capital towns with NH through at least 2 lane road covering 2304 km has been approved for implementation and Phase-B which would provide 2-lane connectivity to the remaining 51 District Headquarter towns of NER (there are in all 85 District Headquarter towns of NER, 23 are already connected by 2-lane road and connectivity to 11 District HQ is provided under Phase-A of SARDP-NE).the length to be covered is 4570 Kms. The likely target date of completion of Phase A is 2012-13. Phase-B of SARDP-NE will be taken up in the 12th Plan.

To provide rail connectivity to all States in the North Eastern Region is a national priority. The railroad network is limited to 2500 Kms and lies almost entirely within the State of Assam (2466 Kms), with short stretches in Tripura (45 Kms) and Arunachal Pradesh (1 Kms). Only 960 Kms of this network consists of standard gauge track suitable for haulage of bulk goods and the majority of the network is made up of narrow gauge track suitable for small trains and transportation of passenger and transportation of smaller cargo.

Similarly, there is an urgent need for a rail link into Sikkim. The more important issue from the long-term point of view is strategic planning that will develop the rail network with the aim of increasing interstate connectivity. In addition, rail connectivity has to be integrated with developments in the other avenues of transport being proposed for the NER as a whole (World Bank 2006). Some useful rail links are already under planning and a few of them have almost been completed and are likely to be broad gauged. These are Jiribum to (near) Imphal and Dimapur to (near) Kohima. Another line from Azara (near) Guwahati airport to Byrnihat in Meghalaya is in progress.

In general, air connectivity is also expensive in the hilly areas because of the terrain, which is the reason for the paucity of airports in other hill areas in the country: (most have versions of a helipad). In NER, air travel has been made possible by central subsidies for air travel to and from NER (excluding Assam).

Despite this, air connectivity was extremely unreliable prior to 2002 as the limited traffic made the use of Boeing jets uneconomical and led to irregular flight schedules. However since 2002 the introduction of smaller ATR planes has made flights within NER somewhat more reliable though Kolkata still seems to be the hub rather than Guwahati. On the other hand, Guwahati seems to be more the natural hub for air traffic within NER. Air connectivity needs substantial investments and participation from both the Government and private investors. The Sixth Sectoral Summit of NEC on Air Connectivity in Aizawl declared inter-alia the objective of "operationalizing upto 50 airports/ airstips in the North Eastern Region by the end of the Eleventh Five Year Plan, and providing upto 600 flights per week within the region, by using the appropriate type of aircraft, making the required improvements in existing airports/ airstrips in a time bound manner".

A number of infrastructure developments have been proposed to expand the inland waterway network linked to NW-2 and improve port facilities. A 45-metre -wide canal stretch is planned for the Brahmaputra River

from the Bangladesh border to Dibrugarh, 750 kilometres east, with a permanent terminal at Pandu, 24-hour navigational facilities, and floating terminals at nine locations along the canal. For the Barak River, there is a proposal to construct a 40- metre-wide channel for the entire waterway, including four terminals at strategic overhaul locations. Such investments would enable the further development of several cargo routes and ferry service routes along NW-2.

There is also a range of other waterways besides NW-2 that could be developed and contribute to the economic growth of the Northeast and promote Indo-Myanmar crossborder trade. The third major option for increased inland water transport is the further development of the international Indo-Bangladesh Protocol route for water transport.

The development of this route would increase options for goods movement to and from the Northeast and peninsular India through the Sundarbans and Bangladesh, improving the accessibility of the Northeastern Region.

Power

There is a huge potential for the power generation in the region. Apart from this almost every North Eastern state is deficit in power. This power deficit is a major constraint in the economic development of the region which is important for the growing state of industrial and other economic activities based on power in the region. The states need to develop their internal transmission grids to avoid incurring wasteful expenditure on wheeling power from the central grid. Power consumption also has remained virtually stagnant in most of the NER states over a period of time, with the exception of Meghalaya and Sikkim shows the lack of economic activities in the region. In Manipur power consumption has actually declined and is stagnant in Assam. This shows the differential growth in economic activity in the NER states.

At present the states are not in a position to generate enough power even for their own requirements, even though power generation has increased substantially in every state after 1996-98. However, generation seems to be stagnant after 1999-2000. States like Meghalaya are in fact identifying less power-intensive areas like high-level tourism, IT sector, horticulture and so on as thrust areas in their industrial policy rather than large industrial projects.

For the future, ambitious plans have been drawn up for making NER not only self-sufficient in power but also the 'power house' for the rest of the country. As can be expected the main source of power is likely to be hydel and the focus state would be Arunachal, even though in Assam, the power supply source has changed dramatically in 2006 from thermal to hydel.

In addition, since power projects are capital intensive, most of the commissioned projects are (or would be) in the central sector or under public-private partnership (PPP) mode. The increasing role of the centre in power generation in the NER states mainly implemented through NEEPCO.

As noted in the Pasighat Declaration, the total power potential in NER is about 50,000 MW. According to NEC Vision 2020 the estimated hydro-power potential of Arunachal is around 50,000 MW. The state is expected to generate an additional 22,584 MW hydel power by 2020 in 166 hydel projects, of which only 88 MW is to be created under state projects, the rest will be under central and private projects. In the Twelfth Plan alone 15,251 MW of additional power is to be generated. Finally, about 42 percent of the additional power is to be generated by private hydel projects.

A two-pronged strategy needs to be adopted for power generation with focus on small/ localized hydel and Thermal and Non-renewable energy (NRE) projects for catering to local needs. There is also a need to install high capacity hydel and thermal power projects with associated transmission lines for first meeting the demand for power of NER and thereafter that of the rest of the country. A clear and coherent policy is required to be evolved for NER which takes into account the special characteristics and needs of the region, so that the benefits of power availability reach the people of the region.

To achieve these objectives, top priority attention needs be paid to the Small Hydro Power Programme (SHP) for NER, to be supplemented by other sources of

new and renewable energy such as biomass and solar energy.

Telecommunications and Information Technology (IT)

Telecommunication plays a vital role in connecting people with the rest of the world and improving their economic well-being as does physical communication. Since physical infrastructure in NER is either limited or is expensive, telecommunication becomes an even more important mode of communication. The teledensity of the North East is low in comparison to the rest of India and only Mizoram has a teledensity higher than the national average. Further, the rate of increase in teledensity in the region is slower than the national average, which could be due to the limited expansion of exchange capacity.

Cellular mobile services were introduced in the region only in 2003 after a delay of eight years than the rest of the country for security reasons. There are still some restrictions in border areas and no signals are allowed within 500 metres of the international border. This restriction is particularly harsh to the North East states where a significant population lives in border areas and, therefore, should be removed as early as possible. To address the situation, BSNL declared the year 2007 as the "Year of Development of Telecom Network in NE Region".

The most important infrastructure required for the development of telecommunication including mobile technology is optical fibre networking and broadbanding. It would be difficult to get the services of a dedicated communication satellite for the region and therefore, erection of towers and spreading optical fibres presents the viable option for the region. Alternatives like utilizing the power transmission and distribution network etc. should be explored for optimizing costs.

The telecommunication revolution in the country has led to a dramatic increase in Internet connectivity in the country, which has made possible the revolution in Information Technology. That Internet usage is low in the North East is clear from the insignificant number of connections in NER, being a low 15,303 in 2002, just 0.48 percent of the total number in the country. This increased in 2003 but was still less than 1 percent (0.88 per cent) of the total. It is thus reasonable to conclude that the NER states have not been impacted by the telecommunication revolution as much as the rest of the country. The low Internet penetration is particularly worrying given the long-term plan of rapidly increasing the spread of IT services in the region.

While telecommunication technology is essential for the spread of information technology in the region, the development of the latter is an essential prerequisite for the development of the region. Information technology cuts across all sectors and technological upgradation and development of every sector depends on the progress made in its spread in the region. This would require significant strengthening of the infrastructure for the development of the IT and ITES sectors in the region. Information technology is necessary for the management of information required for grassroots planning. The compilation and collation of data on physical, human and financial resources right from the village level, preparing the plans, their implementation, monitoring and evaluation in a systematic manner requires the application of the technology. The most important application of the technology is in governance; e-governance is particularly important to ensure that the large public investments produce expected outcomes. A pro-active and responsive administration will be greatly facilitated by e-governance.

Technology helps in both education and healthcare. The spread of information technology education could help the region to become an important hub for IT and ITES industries. It will also provide productive employment opportunities to the youth which can trigger the development process in the region. In the healthcare sector, information technology has an important place in the development of e-medicine. Considering the importance of IT infrastructure for the development of virtually every sector in the economy of NER, this should be of utmost priority. Given its complementarity with the power and telecommunication sectors, the plan for the development of the sector should be calibrated in a coordinated manner. ❑

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Boosting the economy through MSMEs

Sunil Kr Saikia

MSME in India is considered now to be a panacea for creating wealth, generating employment and providing new and better goods and services

IN INDIA, the Micro, Small and Medium Enterprises (known as MSME) today occupies an important role in directing the development process for growth and prosperity of the country. During the past 65 years, this sector has contributed significantly towards building a stable and sound national economy. Today, MSME comprises of 95 percent of the total industrial enterprises in the country, accounting for 45 percent of total industrial production, generating over 80 percent of industrial employment and about 40 percent of country's export. At present the MSME sector contributes 8 percent of the country's GDP. The Government of India as well as all the State Governments therefore, have been adopting a number of initiatives for the development of MSME for increasing income generating activities, solving acute unemployment problem, utilising all natural and human resources optimally, earning more foreign exchanges and eradicating the regional imbalance of the country. MSME in India is considered now to be a panacea for creating wealth, generating employment and providing new and better goods and services. The present MSME sector is shown in Table-I.

Table-I Indian MSME Sector – At a Glance*

• MSMEs: 285.16 lakhs • Employment generated: 659.35 lakh • Production : At current Prices Rs. 8,80,805 crores • Exports : Rs. 202017 crores • MSMEs account – Industrial Production : 45% – Exports : 40% – GDP Share : 8%	• Ownership pattern : – Proprietorships : 94.49% – Partnerships : 0.68% – Corporate & Others : 4.82% • Manufacturing Units : 28.56% • Service Enterprises : 71.44% • Registered MSME: 5.94% • Produces Diverse range of products (more than 6000- consumer items, capital goods and intermediates)

*Up-to 31st March 2010

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From Table-I, it can be observed that MSME sector occupies a pivotal role in our country. However, it is also observed that the MSME sector in our country have been facing a tough fight, not only against its own counterparts (MSME), but also from the large and organised sector of the country and also from the multinational corporations (MNCs). To make the MSME sector healthier and to develop a global competitiveness among Indian MSMEs, the Ministry of MSME has passed the MSME Act in 2006 and also introduced 10 different innovative schemes:

1. Marketing Support/Assistance to MSMEs (Bar Code)
2. Support for Entrepreneurial & Managerial Development of MSMEs through Incubators
3. Enabling Manufacturing sector to be competitive through Quality Management Standards & Quality Technology Tools (QMS/QTT)
4. Building Awareness on IPR for MSME
5. Lean Manufacturing Competiveness for MSME
6. Mini Tool Room (MTR)
7. Design Clinic Scheme for design expertise to MSMEs Manufacturing (DESIGN)
8. Marketing Assistance & Technology Upgradation Scheme in MSMEs
9. Technology & Quality Up-gradation Support to MSMEs
10. Promotion of ICT in MSME Manufacturing Sector (ICT)

2. MSME in North East:

The economy of North East on the other hand is characterized by low per capita income, low capital formation, inadequate infrastructural facilities, communication bottleneck and geographical isolation from the mainstream. The region is also characterized by inadequate exploitation of the natural and human resources, for which industrial activities are very low in the entire region and high unemployment rate among the relatively highly literate people. The industrial backwardness is reflected in its total number of enterprises. Only about 1.5 percent of country's MSMEs have been set up in the region. Though, it has a very small number of enterprises at present, but the North Eastern Region offers vast market opportunities.

It is observed that the economy of the North Eastern Region is predominantly an agrarian economy, based on agriculture and horticultural crops etc. The region on the other hand has vast potential for setting up of number of enterprises, based on its own resources like- agriculture, horticulture, forest, jute, rubber, tea, medicinal plants, cane and bamboo, oil, gas, coal, hydro electric ete. These resources can be utilized by setting up number of industries in the region, particularly in MSME sector, including the service sector enterprises. Similarly, the region is also very rich in flora and fauna and traditional arts and crafts, mainly in handloom and handicrafts sectors. Since time immemorial, local artisans have been producing a variety of handloom and handicrafts items, out of which some of the items are really superb, exquisite and unique. These products have attracted many people from both within as well outside the region and to some extent outside the country also.

But due to lack of entrepreneurial zeal of the local people, particularly the youth and also lack of availability of skilled and semi-skilled labours in the region, poor infrastructural facilities, lack of adequate power supply, lack of encouragement from the commercial banks and financial institutions, limited R & D facilities and lack of proper marketing knowledge, lack of hand holding support etc, the development of the MSME has remained tardy. The social and cultural taboos are also responsible to a large extent for not developing industries in the region. However, at present a number of Organizations/Institutions have been involved in developing the entrepreneurship and enterprises in the region. At present, apart from the Directorate of Industries and Commerce in all the states of the north east including its District Industries and Commerce Centre (DICC), Directorate of Rural Development (DRDA), State Industrial Development Corporations (SIDCs) like ASIDC and AIDC (Assam), TIDC (Tripura), MIDC (Meghalaya), MANIDCO (Manipur), APSFDC (Arunachal Pradesh), Sikkim Industrial Development Investment Corporation (SIDICO) etc, State Institute of Rural Developments (SIRDs) like SIRD (Assam), SIPAR (Tripura) etc, State level Handloom and Handicrafts Development Corporations like AGMC (Assam), MHHDC (Meghalaya), MHHDC (Manipur), SHHDC (Sikkim), THHDC (Tripura) etc. have been involved in developing entrepreneurship and enterprises in their respective

states. Under the cenral sector also, there are a few Organizations/ Institutions like Indian Institute of Entrepreneurship (IIE), North Eastern Technical and Consultancy Organisation (NEITCO), North Eastern Consultancy Organisation (NECON) with its headquarter at Imphal (Manipur) etc. In addition, organization like Micro, Small and Medium Enterprises Development Institute (MSME-DI), National Small Industries Corporation (NSIC), Khadi and Village Industries Commission (KVIC), North Eastern Handloom & Handicraft Development Corporation (NEHHDC), North Eastern Regional Agricultural Marketing Corporation (NERAMAC) etc. have been operating in the region for developing entrepreneurship as well as micro and small enterprises.

The region occupies a very strategically and geo-politically sensitive frontier zone of the country, sharing 98 percent (4600 km) with international border with the four different countries i.e. Bangladesh, Myanmar, Bhutan and China, while having only 2 percent (33 km) of its border with mainland India. As the region has the unique locational advantage of being situated close to South East Asian countries it has the potential to emerge as a strategic base for domestic and foreign investors to tap the vast potential markets of countries like China, Bangladesh, Bhutan, Myanmar, Thailand, Malaysia, Philippines, Cambodia, Indonesia, etc. To help the local entrepreneurs in the export-import sector, a number of organizations like- Director General of Foreign Trade (DGFT), Agriculture and Process Food Export Development Authority (APEDA), Marine Product Export Development Authority (MPEDA), Export Credit Guarantee Corporation (ECGC), Inland Container Depot (Dry Port) etc. have been established or up-graded and a few Export Promotion Industrial Parks have been set up to help the local entrepreneurs.

3. MSME in Assam

In the state of Assam, the position of setting up of micro, small and medium enterprise (MSME) is slightly better in comparison to the other states in the region. The present status of micro, small and medium enterprises (MSME) in the state is shown in Table-II.

Table-II
MSME Sector in Assam – At a Glance (4th Census)

Sl. No.	Description	Numbers
1.	Total MSMEs in the state	6,03,541
2.	Manufacturing units	1, 00,556 (16.66%)
3.	Service units	5,02,985 (83.34%)
4.	Total Employment generated:	12,34,356
5.	Total MSME in NE Region	8,94,485*
6.	Total MSMEs in India**	285.16 (lakhs)

*Including MSME in Assam
**upto 31st March, 2010
Source: Summary of Results of Fourth Census of India,2006 & IIE, Guwahati

In Assam, apart from the Directorate of Industries and Commerce (now known as Commissioner of Industries and Commerce), a number of other organizations/institutions have been created for the development of entrepreneurship as well as enterprises in Assam. In Assam, the concept of developing entrepreneurship was first introduced in the year 1973 when Government of Assam under the Chief Ministership of Late Sarat Chandra Sinha introduced a scheme called 'Half a Million Jobs' and this was entrusted by creating a separate organization called Entrepreneurial Motivation Training Centre (popularly known as EMTC) under the State Planning Board. The Government of Assam also requested SIET Institute (now known as MSME-NI), Hyderabad to be associated with EMTC mainly on training and research in the field of entrepreneurship development. Nine EMTCs branches were set up in different places of Assam. Similarly in the year 1973 North Eastern Industrial Consultancy Organisation (NEITCO) was created by development financial institutions and banks to cover all the states in N.E Region including Assam. In 1979, SIET Institute, Hyderabad separately set-up its NER Centre at Guwahati. This SIET Institute became NISIET (NER Centre) in 1984 and Indian Institute of Entrepreneurship (IIE) in 1994. In addition, organizations under central sector like Micro, Small and Medium Enterprises Development Institute (MSME-DI), National Small Industries Corporation (NSIC), Khadi and Village Industries Commission (KVIC) have been operating in the state as well for the region. Other organizations like Office of the DC (Handicraft), National Commission for Scheduled Caste & Scheduled Tribes Development, NIRD, RGVN, CAPART, NEHHDC,

NERAMAC etc. and a number of NGOs, Industry Associations/ Forums etc. have been engaged in developing entrepreneurship and small enterprises in the region. Under the State Government also, a few organizations like Assam Small Industries Development Corporation (ASIDC), Assam Industrial Development Corporation (AIDC), Assam Government Marketing Corporation, (AGMC), Assam State Hills Industrial Development Corporation (SHIDC), Assam Trade Promotion Organization (ATPO), Assam Financial Corporation, Assam Electronics Development Corporation, Assam Khadi & Village Industries, Assam Live Stock and Poultry Development Corporation, Assam Industrial and Infrastrural Development Corporation, Assam Government Marketing Corporation etc. have been set up in the state.

In addition to the above, the Government of Assam with or without help of the Government of India has created some Industrial infrastructual facilities for the benefit of local entrepreneurs. The list of such facilities created are shown in Table-III.

Similarly, a few Specialized Industrial Parks have been either created or will be created soon, which are shown in Table-IV.

These facilities would definitely motivate and boost the local youth to set-up more and more enterprises in the near future. In addition, the work on a huge gas cracker project is going on in upper Assam, which is expected to be completed by the end of 2012. As per Assam government estimates, the Gas Cracker Project would help to set-up at least 500 downstream enterprises and create employment of more than one lakh people, Assam is already famous for its tea and petroleum industries. Apart from these industries, Assam is also famous for its traditional cottage industries like handloom and handicrafts, bell/brass metal industry, pottery/terracotta etc. There are about 7,00,000 looms in Assam, all of which are mostly traditional. Assam produces about 10 percent of the total natural silk of India, in addition to muga, the famous golden silk of the entire world. The bell-metal and brass-metal industries on the other hand, produce products like plates, tumblers, pots, *sarais* etc with a total annual production of marketable finished goods of around 300 tonne. By the turn of the new century, Assam had 63.7 percent of the permanently registered micro, small and medium units in the region. Of these, the agro-based sector and timber and wood-based sectors have had the maximum share in the number of total micro, small and medium enterprises registered in the state. Recently, Clustering efforts are surfacing well in the plains of Assam, particularly in sectors like handloom, jute craft, *eri* spinning, bell and brass metal in MSMEs.

Table-III
Existing Industrial Infrastructure in Assam at a glance

Sl. No.	Particulars	Number
1.	Industrial Estates	16
2.	Mini Industrial Estates	6
3.	Growth Centres	11
4.	Integrated Infrastructure Depot	10
5.	Common Service Workshops	2
6.	Export Promotion Industrial Park	1
7.	Industrial Growth Centres	3
8.	Commercial Estates	64

Source: Collected from Commissioner of Industries & Commerce, Assam, 2011

Table-IV
Specialized Industrial Parks in Assam

Sl.No.	Particulars	Number
1.	Food Park at Nalbari	1
2.	Bamboo Park at Jagiroad	1
3.	Jute Park at Kharupetia, Udalguri	1
4.	Textile Park at Silapathar	1
5.	Plastic Park at Tinsukia	1
6.	Mega Agro Hub at Boko	1
7.	Growth Pole Project at Kamrup	1

4. Problems of MSME in Assam

There are a number of reasons for slow growth rate of MSME sector in the state, among them the

following may be considered as the major factors.

1. The infrastructural constraints is well known to everyone. MSME sector in the state suffers from problems like frequent power failures, bad rail and road communications, high production cost due to high labour cost, high transportation costs, high inventory costs etc;
2. The dearth of entrepreneurial talents is an inhabiting factor to accelerate the process of industrialization in the state;
3. Lack of financial support and help from banks and financial institutions.
4. Stiff competition from outside products mainly on cost factor and packaging, finishing and credit facilities;
5. Inadequate R & D and testing facilities for most of the MSMEs in the state;
6. Non availability of packaging facilities (like bottles, containers, cork, packaging materials etc) locally, for which the enterprises have to maintain more inventories;
7. Lack of adequate testing facilities available in the region.
8. Inadequate storage facilities, particularly after harvesting of a seasonal crop/horticultural item;
9. Barring a few urban areas, the marketing network is totally unorganized, for which the units have to incur additional expenditures to distribute their products.
10. Another major obstacle in the state is the lack of proper techno-economic information with the concerned government departments and financial organizations;
11. Inadequate marketing support from government level organizations;
12. Lack of awareness among entrepreneurs about various new schemes launched recently in the state.

5. Strategy

In order to build a proper and effective strategy for the development of our economy through the MSME sector, some of the important strategies could be- motivating and changing of the mindset and attitude of the local youth for taking up various entrepreneurial ventures, improving the infrastructural facilities by providing adequate power supply, timely finance from the commercial banks and financial institutions, providing of required information quickly (including facilities and incentives on appropriate policies and schemes of the central and state government) by local DICC and other promotional and developmental organizations. The local youth should also change their attitudes and mind-set and give proper weightage certain important issues like identifying and finalizing an enterprise based on scientific market survey and analysis, continuous R & D efforts, product innovations, improving the quality of products and its design, shape, size, colour etc, developing effective linkages both inside and outside the region, penetrating more in semi-urban and rural areas in the region, utilizing more of government and private level emporia, more efforts on sales promotion and advertisements, more concentration on appropriate value added products, speed up new product development process cycle etc. Some of the products from this state as well as from the north eastern region have high potential in the export market for which systematic efforts could be made on product identification, techniques of entering into the export market, finding buyers or importers, knowledge of preparing proforma invoice, calculation of export pricing, delivery of the products, packaging, export documentation formalities, export logistic etc.

In conclusion, we can say that Assam and the entire north-eastern region has enough resources to develop the micro-enterprises sector. For this, the region needs a positive attitude of the people in general and changing of the mind set of the local youth in particular along with sincere efforts from the concerned government and non-government departments, organizations, institutions etc. The local youth must come forward with full determination and dedication to work hard. The region at this present hour needs a thriving, vibrant and strong enterprise, particularly in the micro and small enterprise segments for all round economic development of the region. ❑

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Health Status of Women in the North-East

Sonalika Chaturvedi

Historically, the north east women of India have had a strong role in societal building through movements as well as participation in wars

THE NORTH East consists of eight Indian states, Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim and Tripura, bound in the north by China, Bangladesh in the south-west, in the east by Myanmar and on the north-west by Bhutan. West Bengal's fifty-six kilometre corridor links this geographically separate region from the rest of India.

The stern intra-tribal and inter-ethnic differences teemed with demands for autonomy have led to an economic and political unrest in the region. This makes the problems of rural people worse as the geographical detachment makes them vulnerable through poor economic growth, lack of infrastructure and misuse or decay of resources natural to the region.

In 1997, the Shukla Commission highlighted the deficits plaguing the North-East Region, namely, poor infrastructure, deficit of basic needs, a lack of two-way understanding within the rest of India and a deficit of resources.

To cover up these deficits several schemes and programmes have been introduced in the North East to expedite the process of development and growth. The Sixth Schedule in this regard has been of landmark importance as it is ''a self contained Code for the governance of the tribal areas.'' This has given region at autonomy for governance and urban and rural development through setting up of Autonomous District Councils, which has been positive for these states.

Background of Women in the North East

Historically, the north east women of India have had a strong role in societal building through movements as well as participation in wars. The concept of female solidarity is strong amongst the women and they have enjoyed a foothold in economic autonomy as well.

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Manjusri Chaki-Sircar's book, *Feminism in a Traditional Society: Women of the Manipur Valley,* emphasizes how, for instance the Naga women have considerably impacted, the economic policies of the rulers at that time. Manipuri women have actively participated in the economic decisions of their communities with a strong sense of 'self-sufficiency.' In fact, table 3 shows low crime rates against women in these states which shows the status and respect that women in the north-east command. The emergence of women's groups and movements such as Assam Pradesh Mahila Samiti in 1926, Nupi Lan (or Lal) movement in 1939 by Manipuri women, Bodo Women's Justice Forum and others has seen a resurgence of women's empowerment and suffragette activities.

Over the course of years the education of women in the north east has attained importance. The traditional activities undertaken by women such as weaving, indigenous craft-making and farming activities have given way to rather contemporary occupations with the gradual spread of education. Even so, unemployment remains a burning issue as most women still have no control in decision-making or resources and thus are generally occupied as marginal workers. The unemployment figures in table 3 portray women's workforce opportunities and subsequent participation.

Visible from table-1, the sex ratios in most of the North East states is a lot better than that of other states and is mostly above the national average of 940.

Table 1: Sex Ratios (Census 2001 & 2011) of North Eastern States

North East States	Sex ratio (females per 1,000 males)	
	Total population	
	2001	2011
India	933	940
Sikkim	875	889
Arunachal Pradesh	893	920
Nagaland	900	931
Manipur	974	987
Mizoram	935	975
Tripura	948	961
Meghalaya	972	986
Assam	935	954

These figures are significant for an economically backward region which has outstripped the sex ratios of more developed states of Punjab, Delhi, Gujarat and Haryana. This is indicative of low instances of abusing the scientific determination of female foetus, better knowledge of contraceptives and its usage, symptoms of the 'burden of the bride' that is, dowry and bride-burning.

However, there have been numerous studies which proclaim adverse juvenile sex ratio due to their preference to have male offspring. Though the sex-ratios are towards the increase table-2 also shows the reason for having high fertility rates is due to the desire to have male children, which accounts for the large family size of most north east India's households.

Socio-economic indicators such as education and unemployment among women, however have a different story to tell. As can be seen from table 3, most women are not suitably employed in workforce and their level of education can vouch for lack of skills and opportunities.

Table 2: Percentage of Women in the North Eastern states desiring Female Children

States	Percentage of women who wanted more daughters than sons
	2005-06
Sikkim	5.9
Arunachal Pradesh	2.1
Nagaland	9.8
Manipur	4.2
Mizoram	22.7
Tripura	3.4
Meghalaya	17
Assam	2.1

Even though Mizoram and Tripura have about 90 percent and 84 percent female literacy rates it is evident from the table that the unemployment of women is rampant in these states as well as others. Arunachal Pradesh's 27 percent unemployment rate is a positive indicator as most north eastern states surge ahead of the national literacy average for women.

Another vital and basic indicator of women's status and well-being is the state of the health sector in north east. Health covers dynamic aspects of development and for women it is deemed a prevalent and competent indicator of their socio-economic growth and development including rights, standards of living and status in society.

This paper looks at the health of women in the north east over the past decade to map the situation and status of women's health, which is a more accurate indicator of women's status in this region.

North-Eastern Women and Health

Health indicators are useful

index of measurement as they help gauge the reach, delivery, accessibility and governance of opportunities to a decent standard of living and facilities. In this scenario, particularly, women's health can empathically predict the status of not just women but the health infrastructure in the region.

Looking at the sex ratios of the eight states of the north east, as seen in table 1, women have mostly been given equal opportunities. However there is scope for improvement especially in Arunachal Pradesh, Nagaland and Sikkim. A further focus on other health indicators such as maternal mortalitiy and affecting factors would help expedite the lowering of mortality ratios and boost women's numbers at par with men.

According to the World Health Organisation report, almost three-fourths of maternal mortality occurs during the period of delivery or in post-partum. In this scenario, skilled personnel play an important role and ensuring their availability cannot be more emphasised.

The NFHS data shows that only 47 percent of births were delivered by skilled personnel all over India. This is especially disturbing for the rural areas where 75 percent of the births occur and only 37 percent are handled by skilled personnel. In the north east region, in table 5, save for Mizoram, all the states have poor utilisation of health services. There may be availability of health infrastructure to women, the utilisation of these is minimal and the opportunity to health, safety and hygiene is missed. Hence the necessity for social media and communication is of utmost importance.

However, the incidence of teen pregnancies of women between ages 15-19 is far less prevalent in the north east than other areas. Except for Tripura and Arunachal Pradesh, teen pregnancies are much below the national average of 4 percent. Taking sociological factors such as culture and religion, it is evident that the other states which are predominantly Christian, have better sex-ratios, lower mortality and lower teen pregnancies.

An important aspect of women's health is the usage of contraceptives and its knowledge amongst the masses. Table 5 shows the small percentage of women in the north east who indulge in safe sexual intercourse. Though the national average itself is quite poor as

Table 3: Literacy and Unemployment Rate of women in the North East

States	Female Literacy Rate	Percentage of women unemployed for 12 months before NFHS 2005-06	Crime Against Women
	2011	2005-06	
India	65.46		--
Sikkim	76.43	68.7	6.80%
Arunachal Pradesh	59.57	27.3	13.40%
Nagaland	76.69	54.1	2.10%
Manipur	73.17	35.9	7.30%
Mizoram	89.4	54.4	15.10%
Tripura	83.15	67.9	42.50%
Meghalaya	73.78	58.8	9.20%
Assam	67.27	70.2	31.80%

Table 4: Health Infrastructure available to North East Women

North East States	Percentage who received all recommended types of antenatal care	Percentage of births delivered in a health facility	Percentage with improved source of drinking water	Registered government doctors per million population	Percentage using solid fuel for cooking
Arunachal Pradesh	6.5	28.5	85	371.4710253	67.7
Assam	9.6	22.4	72.4	76.53451707	75.8
Manipur	10.5	45.9	52.1	247.0355731	64.7
Meghalaya	8.1	29	63.1	196.8891514	72.2
Mizoram	8.7	59.8	85	391.6960439	34.1
Nagaland	1.9	11.6	62.8	144.6340758	76
Sikkim	27.2	47.2	77.6	371.1952487	52.4
Tripura	10.6	46.9	76.1	202.7163998	80.4

Table 5: Teen Pregnancy, Health Services Utilised & Usage of modern contraceptive in the North East			
North East States	**Teenage pregnancy (2005/06)**	**Utilization of services (2005/06)**	**Modern contraceptive use (2005/06)**
India	4%	46.60%	48.50%
Arunachal Pradesh	3%	30%	37%
Nagaland	1.90%	25%	23%
Manipur	2.10%	59%	24%
Mizoram	2.50%	65%	60%
Tripura	4.50%	49%	45%
Meghalaya	1.50%	31%	19%
Assam	3.20%	31%	27%
Sikkim	Not available	54%	49%

only 49 percent married women use modern contraceptives the usage in north-east is minimal except Mizoram. The rise of HIV/AIDS in this region is another resultant of ignorance of modern contraceptives. NACO in 2006 has called the north east spread of HIV/AIDs an 'emergency' with over 50,800 people of the 2 lakh infected Indians primarily from Nagaland, Manipur, Mizoram and Meghalaya.

To address the specific needs of north eastern states, the NACO has established the North East Regional Office or NERO headquartered at Guwahati. Since 2008, NERO specifically functions as facilitator of the National Aids Control Project-III through planning, implementing, building capacities and monitoring and evaluations. The year 2010-11 has focussed on strengthening the existing systems and stepping the capacities of these systems.

Concluding Remarks

The north east region is turbulent and the conflicts have had their effect on women's health. There needs to be focus on governance systems as several PHCs (Primary Health Centres) which are non-functional and are often used as temporary security posts. This is a serious dampener to the existing health facilities and in such a situation there is always a security threat, so doctors mostly run private practices, which are steeply expensive whilst the PHCs remain vacant. There is a dire need for doctors to penetrate the interior regions with the booming population and high HIV/AIDS incidence. Mere health camps are not the solution, there has to be greater push through state intervention.

On the whole, women in the north eastern states enjoy a comfortable position, yet the darker side includes the wasted infrastructure and precedence to high-risk diseases. The 12th Five Year Plan needs to address these issues and tap on the positives that already exist. The already strong women's networks and forums in the north east can work on this sector and move forward. ❑

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Table 6:Status of Facilities in North East under National AIDS Control Programme as on December 2010									
North East States	**State AIDS Control Society**	**Number of ART Centre**	**Number of NACO supported Blood Banks**	**Number of Community Care Centre**	**Number of Integrated Couseling &Testing Centre**	**Number of Sexually Transmitted Infection Clinic**	**Number of Targeted Intervention**	**Number of Drop in Centre**	**Number of Red Ribbon Clubs**
Arunachal Pradesh	1	12	0	35	16	21	0	20	18
Assam	3	32	3	83	23	58	2	6	50
Manipur	7	3	9	54	10	54	4	35	32
Meghalaya	1	5	0	9	8	12	1	11	11
Mizoram	1	10	2	27	8	41	7	20	18
Nagaland	5	8	4	60	11	39	14	50	31
Sikkim	1	2	1	12	6	7	1	85	7
Tripura	1	6	2	18	9	18	0	11	14

DO YOU KNOW?

SAARC

What is South Asian Association for Regional Cooperation (SAARC) ?

The SAARC is an organisation of South Asian nations. In the late 1970's, President Zia-ur Rahman, proposed the creation of trade bloc consisting of South Asian countries. The Bangladeshi proposal was accepted by India, Pakistan and Sri Lanka during a meeting held in Colombo in 1981. In August 1983, the leaders adopted the Declaration on South Asian Regional Cooperation during a summit which was held in New Delhi.

The heads of Seven South Asian Countries of SAARC i.e. Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan and Sri Lanka signed the charter to establish the South Asian Association for Regional Cooperation (SAARC) on 8th December, 1985. Afghanistan joined SAARC as a Member at the Fourteenth Delhi SAARC Summit in April 2007.

What are the main objectives of SAARC ?

- To promote the welfare of the peoples of SOUTH ASIA and to improve their quality of life
- To accelerate economic growth, social progress and cultural development in the region and to provide all individuals the opportunity to live in dignity and to realise their full potentials
- To promote and strengthen collective self-reliance among the countries of SOUTH ASIA
- To contribute to mutual trust, understanding and appreciation of one another's problems
- To promote active collaboration and mutual assistance in the economic, social, cultural, technical and scientific fields
- To strengthen cooperation with other developing countries
- To strengthen cooperation among themselves in international forums on matters of common interests; and
- To cooperate with international and regional organisations with similar aims and purposes.

What are the Principles of SAARC?

- Cooperation within the framework of the ASSOCIATION shall be based on respect for the principles of sovereign equality, territorial integrity, political independence, non-interference in the internal affairs of other States and mutual benefit.
- Such cooperation shall not be a substitute for bilateral and multilateral cooperation but shall complement them.
- Such cooperation shall not be inconsistent with bilateral and multilateral obligations.

What is SAFTA (South Asian Free Trade Area)?

SAPTA was envisaged primarily as the first step towards the transition to a South Asian Free Trade Area (SAFTA) leading subsequently towards a Customs Union, Common Market and Economic Union. In 1995, the Sixteenth session of the Council of Ministers (New Delhi, 18-19 December 1995) agreed on the need to strive for the realization of SAFTA and to this end an Inter-Governmental Expert Group (IGEG) was set up in 1996 to identify the necessary steps for progressing to a free trade area. The Tenth SAARC Summit (Colombo, 29-31 July 1998) decided to set up a Committee of Experts (COE) to draft a comprehensive treaty framework for creating a free trade area within the region, taking into consideration the asymmetries in development within the region and bearing in mind the need to fix realistic and achievable targets.

The SAFTA Agreement was signed on 6 January 2004 during Twelfth SAARC Summit held in Islamabad, Pakistan. The Agreement entered into force on 1 January 2006, and the Trade Liberalization Programme commenced from 1st July 2006. Following the Agreement coming into force the SAFTA Ministerial Council (SMC) has been established comprising the Commerce Ministers of the Member States. To assist the SMC, a SAFTA Committee of Experts (SCOE) has been formed. SCOE is expected to submit its report to SMC every six months. The SAFTA Agreement states

that the "the SMC shall meet at least once every year or more oftenas and when considered necessary by the Contracting States. Each Contracting State shall chair the SMC for a period of one year on rotational basis in alphabetical order."

Where is the Secretariat situated and how it functions?

The SAARC Secretariat is based in Kathmandu, Nepal. It coordinates and monitors implementation of activities, prepares for and services meetings, and serves as a channel of communication between the Association and its Member States as well as other regional organisations.

The Secretariat is headed by the Secretary General, who is appointed by the Council of Ministers from Member States in alphabatical order for a three year term. The SAARC Secretariat and Member States observe 8 December as the SAARC Charter Day.

What are the Working groups of SAARC?

Working Groups (WG) formulate and over see programmes and activities within the framework of SAARC to strengthen and promote regional cooperation in their respective areas. The WGs coordinate, monitor and evaluate programmes in this regard. In recommending target-bound programmes and activities, they would also propose mechanisms and sources of finance to implement them. Further, they would also carry out the directives emanating from SAARC higher bodies. Following WGs meet regularly to provide inputs on their respective areas of co-operation:

- Working Group on Biotechnology
- Working Group on Energy
- Working Group on Information and Communication Technology (ICT)
- Working Group on Tourism

What are the Regional Centres of SAARC?

The SAARC Secretariat is supported by following Regional Centres established in Member States to promote regional cooperation. These Centres are managed by Governing Boards comprising representatives from all the Member States, SAARC Secretary-General and the Ministry of Foreign/External Affairs of the Host Government. The Director of the Centre acts as Member Secretary to the Governing Board which reports to the Programming Committee. The regional centres are;

- SAARC Agricultural Centre (SAC), Dhaka
- SAARC Meteorological Research Centre (SMRC), Dhaka
- SAARC Tuberculosis Centre (STC), Kathmandu
- SAARC Documentation Centre (SDC), New Delhi
- SAARC Human Resources Development Centre (SHRDC), Islamabad
- SAARC Coastal Zone Management Centre (SCZMC), Maldives
- SAARC Information Centre (SIC), Nepal
- SAARC Energy Centre (SEC), Pakistan
- SAARC Disaster Management Centre (SDMC), India
- SAARC Forestry Centre (SFC), Bhutan
- SAARC Cultural Centre (SCC), Sri Lanka ❑

SAARC Summit in Maldives

The curtain came down on the Seventeenth-SAARC summit in Addu (Maldives) recently with the South Asian grouping's leaders pushing for trade liberalisation and a host of initiatives that include setting up a Rapid Action Force to combat natural disasters. Closing the summit, Maldives President Mohammad Nasheed, the host and chair, announced a set of decisions that included commitments to reducing trade barriers, strengthening investment and enhancing connectivity.

It was decided by consensus to direct the SAFTA (South Asian Free Trade Agreement) ministerial council to reduce the sensitive list and non-tariff barriers, Nasheed also thanked India for its initiative in deciding to reduce the sensitive lists for the least developed countries under SAFTA from 480 tariff lines (categories in a country's tariff schedule) to 25.

The SAARC leaders also directed the finance ministers of their countries to explore avenues for more investment in the region. They also decided to conclude a railway agreement and a motor vehicles agreement before the next meeting of the SAARC council of ministers, expected some time in 2012. Nasheed also announced Nepal will host the 18th SAARC summit in 2012.

Agricultural Development in Assam

Rabindra Kr Choudhary

Rice has registered a record production in 2010-11 at 50.86 lakh tonnes which marks a 15.4 percent growth over the previous year and which accounts for more than 5 percent of the country's total rice production

BASICALLY AN agro-based economy, Assam, the largest state of north-eastern region has remained poor because of agricultural backwardness, in the main. The very fact that Assam has to feed 2.6 percent of India's population with 1.4 percent of national income shows what development distance the state has to cover to catch up with the rest of the country. Even the other seven states of north-eastern region stand on better footing since they together earn 1.3 percent of national income to feed 1.2 percent of the country's population. The per capita income-distance of Assam from all India per capita at current prices registered an increase from Rs. 757 in 1989-99 to Rs. 3599 in 1990-2000 and onward to Rs. 20,250 in 2009-10.

The state's agriculture offers livelihood to around 73 percent of its population of whom 57 percent are cultivators, 8 percent are agricultural labourers and another 8 percent are engaged in allied agricultural activities such as-livestock, pisciculture, horticulture, forestry, etc. Thus, the state's economic fate is directly related to the fate of its farm sector. The contribution of agriculture to Assam's state national income is still 40 percent as against only 15 percent in the country as a whole. Such is the importance of agriculture in the state.

Assam in the early years of planning was a food-surplus state, but started to experience deficit since the latter half of second five-year plan due to high population growth on one hand and low level of production on the other. The yield rate of food grains in the period between 1970-71 and 2008-09 increased from 1000 kg per hec. to 1570 kg in Assam as against the corresponding all India average growth from 872 kg per hec. to 1909 kg. The volatile character of yield rate in Assam is mainly due to heavy dependence on monsoon, uncertain weather, occasional floods

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and droughts and large scale pest attacks. Production rises when cultivated land is free from these hazards.

Assam has been lucky in the last few years. The latest data presented by the state's Chief Minister in his recent address to the National Development Council at New Delhi in connection with finalization of 12th five-year plan unfolded that rice has registered a record production in 2010-11 at 50.86 lakh tonnes which marks a 15.4 percent growth over the previous year and which accounts for more than 5 percent of the country's total rice production. If the production can be sustained, Assam would be among the few largest rice-producing states of India. Again, the agriculture and allied sectors of Assam have grown considerably during eleventh plan at an annual average growth rate of 3.2 percent as against 2.9 percent in the country as a whole. Given the huge potential for agricultural growth in the state, the government of Assam has legitimately proposed for incorporation in the plan frame a special agricultural policy that should provide adequate resources and promote the farm sector growth in north-east for a rapid transformation process of the rural economy. This should be in line with the institutionalization of the special infrastructure plan for North-East which was for the first time incorporated in eleventh plan and which has been under implementation process.

The state's agriculture has long been a struggling sector. Thus, infrastructure level is very low, the most important components without which no headway could be made to agricultural stability are effective flood control and soil conservation measures, a wide network of irrigation system, improved power supply, the training of farmers in technicalities of production supported by extension services and adequate credit supply to the farmers. Not withstanding hundreds of crores of rupees being spent every year to save crops and cattle from the furies of floods and erosion, no improvement worth the name could one notice even after decades. Mismanagement, misuse of resources, lack of monitoring, absence of accountability, fearlessness of the wrong-doers, etc. add to the problem. Thousands of water pump sets were installed in last decades, but most of them soon went unoperational owing to either systemic defect or to lack of energy supply.

Apart from this, public investment in agriculture, particularly in R&D activities which could provide cost effective improved productivity methods, is only too meagre. In 1995-96, only 11 percent of the state's total expenditure was spent on agriculture and allied activities and not even 2 percent earmarked for research activities.

It is disturbing to note that irrigation facility which is one of the most important inputs for crop production and sustainable agricultural development has remained at one of the lowest level in Assam. It is a pity that only 5.5 percent of the state's cropland is under irrigation and the irrigated area in ten years between 1990-91 and 2000-01 increased from 2.03 lakh hectares to just 2.26 lakh hectares. This is the data served by the North-Eastern Council Secretariat. How ever, the irrigation department of Assam according to official figures, has increased its coverage from 6.3 lakh hectares in 1999-2000 to 7.39 lakh hectares in 2008-09 out of the state's irrigation potential of 27 lakh hectares.

The statistical anomaly may be explained by the fact that while construction of many irrigation projects has been continuing for many years, they are yet to be completed. Again, many completed projects are lying unoperational for want of repair works and maintenance. Apart from this, most of the small irrigation projects, especially with respect to shallow tube wells became infructuous only after few months of installation. All these are claimed to be irrigation facilities and, hence, this statistical anomaly.

According to agricultural experts, the size of operational holding below 2 hectares is uneconomic and, so, are either small or marginal holdings. Except for Tripura and Manipur, the average size of holding is less than 2 hectares. The same for Assam is the smallest at 1.27 hectares as against 6.8 hec. in Nagaland, 3.7 hec. in Arunachal Pradesh, 3.6 hec. in Punjab and 1.6 hec. in the country as a whole. 63 percent of the state's total operational holdings are below 1.0 hectare size, while uneconomic holdings comprise 84 percent of the total number. Such extensive scale of tiny plots under the existing pattern of technology are unsuitable to scientific cultivation, proper tilling and use of improved implements. Naturally, the expenses on labour-time, cattle-power and other inputs are high and result in low productivity.

Assam happens to be the third largest jute-producing state of the country. Though updated data on its

cost structure is not available, the study made earlier by the Centre for Monitoring Indian Economy puts the jute production cost of Assam at 10-20 percent higher than in Bihar, West Bengal and Orissa, the same may be said of most items of food crops, particularly same may be said of most items of food crops, particularly rice] wheat and pulses, leading to their large scale imports from outside. The recent unrest among jute growers of Assam emanates from the disproportionate cost-price structure and, hence a support base and concessional treatment might perhaps be extended to them. As against 2.6 percent of India's population in Assam, the gross cropped area of the state currently works out to 2 percent as also its productivity lower than the Indian average by more than 10 percent. Hence, the only way to bridge the gulf is to raise the per hectare productivity to much higher than the all India level as in case of rice harvest of the state, accounting for 5 percent of the country's total in 2010-11. Even with this unprecedented rice production, the foodgrains, produced in the state works out to 2.3 percent of the country's total, i.e 0.3 percent or 7 lakh tonnes less than the proportionate equality to population.

Apart from one lakh hectares of waste land, large scale damages are done to crops by floods or doughts. A study report of Asian Development Bank said that the ever-widening Brahmaputra has been eroding for the last 34 years an annual average of 3,900 hectares of land which are mostly cultivable. The productivity of land under food grains being around 1600 kg per hectare, the annual loss of crops in Assam would come to around 6,240 tonnes a year due to land erosion alone.

With respect to allied agriculture, live stock farming is a distinct advantage in Assam with its cattle population at 3 percent of the country's total. However, milk production is too poor at even less than one percent in 2008-09 due to unscientific farming, fish production which accounts for more than 2.7 percent of India's total in the same year appears to have a bright future. Egg production needs encouragement because the state produces only 0.8 percent of the country's Production. There is, however, a great possibility of horticultural production in not only Assam alone, but in some other states of north-east also. Of the total volume of fruits grown in the country, as much as 6 percent is produced in the region, mainly in Assam, Meghalaya and Tripura. A special mention should be made of pineapple in which the region enjoys almost a monopoly status with 40 percent of the country's total grown in Assam, Manipur, Meghalaya and Tripura.

From the foregoing analysis of Assam's agricultural sector, what we find is that state's biggest challenge is how to save our crops and cattle from the devastation of floods and erosion censed by the Brahmaputra and its tributaries. Experience has taught us that embankments alone cannot arrest the furies of floods and erosion. Since siltation of river - beds aggravate the problem, what is urgently necessary is to deepen the of river-beds through large scale dredging of rivers. Assam has lost more than 4 lakh hectares of land due to erosion during the plan period. While some of the lost land should be reclaimed from rivers through construction of embankments, about one lakh hectares of cultivable waste land lying in the state should be brought under farming through appropriate measures.

Secondly, since operational holdings are mostly of uneconomic size, determined efforts are needed to consolidate the scattered land into co-operative farming units. Since drought conditions are not infrequent and because of the fact that irrigated area as proportion to cropped area is deplorably low in Assam and much below the all states average, topmost priority should be given to achieve a a quantum jump in the state's irrigation facility. Assam is also not self sufficient in crop-seeds and hence the government should procure the same from outside and supply at subsidized rate to cultivators.

Again, since income earning capacity in the state is poor, the growth rate of agriculture must be substantially higher than the state's population growth not only to achieve self-sufficiency but also to feed the agro-processing sectors. Apart from this, the allied agricultural sector, particularly in the areas of horticulture, pisciculture, dairy farming and poultry production should get special attention not only to improve the state's nutrition status but also to create large employment opportunities.

Assam should make best use of the opportunity thrown by the centre's special green revolution programme which in launched for the benefit of eastern India including north- east region. ❑

The Power Scenario in Assam

H N Das

Future plans must be based on a very careful study of the past experience. It must be remembered that "worldwide evidence suggests that electricity reform works only in the presence of strong, independent regulators, insulated from political and commercial pressure"

AROUND 70 PERCENT of the households of Assam do not have electricity connection. Many people will find this fact unbelievable in the twenty-first century and in a state where loud claims of economic development have been made in the recent past. But this is the most glaring fact about the power sector of Assam today. This figure has been derived from the Budget Speech for 2011-12 in which the Chief Minister had said that "at present around 75 percent of urban households and 25 percent of the rural households are getting power supply." About 87 percent of the people live in rural areas. Naturally, therefore, only 30 percent of the total households are getting electricity supply.

Statistics apart the ground situation is pathetic. A majority of people do not have electricity or gas in their houses. They depend upon kerosene which is in short supply and is very highly priced in the black market. Some quantity of rationed kerosene is distributed by the Government. But the Public Distribution System (PDS) is rather inefficient and corrupt too. In the rural areas many people are forced to use fire-wood which they obtain by foraging around the depleting forests. This in turn has created problems of environmental degradation, climate change and health hazards. The scenario, therefore, is really grim.

The Budget Speech has acknowledged that "against the peak demand of 1100MW, the total power available is around 800MW". This estimate seems to be based on demand from the existing consumers. The potential demand from those who are now deprived has not been included. With the increase in population and the acceleration in the process of economic development power

The author was Chief Secretary, Assam during 1990-95.

demand will go up many times. According to Assam Government's latest estimates the per capita availability of electrical energy was 142 kwh in 2008-09. Later figures are not available. Government statistics are clumsily presented and different sets are not exactly comparable. But 'average energy per capita' consumption in India has been estimated at 682 kwh. As against this the figure has been shown as 10381 kwh in USA and 1616 kwh in China. These figures will show the poor state of affairs in Assam.

An extrapolation of energy demand was made by the State Government itself on the basis of four assumptions. It was projected that peak demand of electricity in Assam would grow to 2163 MW in 2011-12, 2572 MW in 2012-13, 2763 MW in 2014-15 and 3423 MW in 2019-20. The assumptions made were : 100 percent household electrification by 2012; GDP growth to catch up with nation; 10 percent annual growth in industry; and, captive generation to come back to grid @10 percent annually. These are realistic assumptions. However, the forecasts did not come true nor did the Government make any concentrated efforts to improve the power supply position. That is why demand remained at only 1100 MW and supply at 800MW in 2010-11 as had been admitted by the Chief Minister.

There have been protests all over the state against Assam State Electricity Board (ASEB)'s failure to meet the requirements of the existing consumers. Except in Guwahati city power is not supplied regularly in any other town. In the villages people get power hardly for a few hours in the day. People, therefore, have become restive. In some places agitations were mounted. In a few locations disturbances and damage to public and private property also occurred in protests against power cuts and outages. People have lost valuable domestic gadgets due to voltage fluctuations. Students have suffered due to power shut downs. Businesses have to make alternative arrangements for power supply through generators. Households have to fix up inverters. The cost of such alternative arrangements are tremendous. The social cost of alternative energy sources used up is also large. It has its repercussions on the other sectors of the economy. These sectors are made to suffer due to shortage of kerosene, diesel, furnace oil etc.

The Chief Minister has given a rather bright picture about the power scenario in Assam in his Budget Speech. He has also given targets for improvement on all fronts. Critics and the general public are, however, sceptical about the Government's ability to achieve such targets. They also doubt the sincerity and devotion of bureaucrats and technocrats engaged in the power sector. They feel that excuses have been made up to explain away the failures to achieve the past targets. In most cases the causes of such failures were neither analyzed nor any corrective steps taken. Everyone believes that the situation must change and steps must be taken to ensure future success.

Several experts have given ideas and constructive suggestions in the media for the State Government and ASEB to adopt. It is not known what is the authorities' reaction to such suggestions. I feel that the authorities concerned must change their attitude and examine these ideas and suggestions carefully instead of dismissing these as unwarranted criticism.

I have carefully gone through the detailed proposals of ASEB. These have been again briefly outlined in the Governor's Speech of June 7, 2011 and the Chief Minister's Budget Speech of July 11, 2011. I feel that these measures alone cannot meet the emerging situation. A systematic approach is required to solve the problem.

In any plan drawn up now the utmost emphasis must be given on administration and management reforms. The steps taken in the recent past do not appear to have yielded the desired results. It has been claimed that "a 250 million US dollar Asian Development Bank (ADB) funded Power Sector Reforms Programme has brought about substantial changes in the power sector and promoted efficiency in generation, transmission and distribution of Power". But people have yet to see the improvements. Therefore, future plans must be based on

a very careful study of the past experience. It must be remembered that "worldwide evidence suggests that electricity reform works only in the presence of strong, independent regulators, insulated from political and commercial pressures". (Economic Survey, 2010-11).

In Assam "aggregate technical and commercial losses" are very high. It has been claimed that such losses have been brought down from 42 percent to 27 percent (and to 25 percent) in the past five years. Certain steps have been spelled out to improve the situation by taking up construction of new substations, replacing of damaged distribution transformers and handing over of selected Feeder lines to franchisees. It must be realized, however, that large-scale power theft is the main cause of power losses. Urgent steps must be taken to stop such thefts and to punish the culprits.

Moreover, any plan for future power generation in Assam will have to be based on a proper configuration of contributions from different sources. In regard to the traditional sources former President APJ Abdul Kalam has emphasized that nuclear power "provides a relatively clean, high density source of reliable energy with an international presence." India's plans have given due importance to nuclear power. My own research, way back in 1975-77, had clearly brought out the superiority of nuclear power as an economic option in the southern region of India. However, in Assam it may not be necessary to consider any nuclear power stations for the present because our hydel and thermal resources are quite substantial. Besides, the long gestation period of nuclear power projects will not suit our time profile. We need power rather urgently. Therefore, short-term planning will have to be given priority.

In regard to thermal power generation a number of projects need attention. Such projects include completion of 1250 MW Bongaigaon Thermal Project, 37 MW Lakwa Waste Heat Recovery Plant, 100 MW Namrup Replacement Project, 1000 MW coal-based proposed Margherita Thermal plant, 100 MW gas-based Amguri Thermal Plant and revival of the 60 MW Chandrapur Thermal Plant. When completed these projects will increase thermal power supply to Assam. In addition, certain hydro-electric power projects are also expected to make some contributions. These include the 150 MW Lower Kopili Hydro Electric Project and a group of five small Hydro Projects out of which the 4 MW Champamati Project has been already completed.

Assam is expecting to get substantial contributions from central sector power projects in the North Eastern Region. From the Bogaigaon Project of NTPC and the Palatana Project of ONGC, Assam will get 250 MW in the first phase and 600 MW when these are fully commissioned. Another 208 MW will be available from the Lower Subansiri Hydro Electric Project.

In regard to finance there should be no difficulty if the position is properly explained to the Government of India and the requirements are included in the Twelfth Five Year Plan which is being finalized now. For the Rajiv Gandhi Grameen Vidyutikaran Yojana which will cover the "Unelectrified Villages" (UEV) certain indications about financing have been given in the State Budget for 2011-12. Similarly, the other schemes and projects being taken up for power development can be financed through budgetary and borrowed resources.

The most important point is to ensure that the gap between power demand and power supply is bridged. If the demand is expected to go up to 3423 MW by 2019-20 and if the present supply is only 800 MW the remaining gap of 2623 MW will need to be bridged during the next 8-9 years. Barring what can be expected from the projects under implementation, as mentioned above, and what will be available from the Central Sector projects the rest will have to be obtained from new thermal and hydel projects. It is the exercise for drawing up of such new projects which must be given top priority in the immediate future. ❑

Cost-Effective Innovations for Betterment of Humanity

The innovator has also received enquiries from countries like the United States for exploring possible technology transfers for his technologies

KANAK GOGOI, since childhood, always had a dream and hobby to do things unique and different and innovate things for the betterment of humanity in a cost effective way. In 1996 he set up a small garage at his home in Mathura Nagar, Guwahati. From a businessman and product designer, Kanak has evolved into a serial innovator. Over the years, he has primarily developed transportation solutions encompassing air, land and water.

Background

Kanak (47) hails from Tekelbora village in North Lakimpur District of Assam. His father, Buduram Gogoi, worked as a clerk in the land reforms department.

Kanak completed his primary education and high school at Laluk. After his High School he went to Jorhat and joined the pre-university course. Dropping out of the course, he decided to stay back at Jorhat. To earn a living, he started collecting milk from villages around Jorhat and selling it in the city.

He continued the milk business for three years. He supplemented this income by doing other odd jobs. While working at various mechanical workshops in Jorhat, his thirst for technical knowledge increased. In spite of being financially insecure, he had found a new confidence in his abilities. He started his own signboard workshop in rented premises. In the year 1986, Kanak's hard work paid off and his signboard business earned good revenues. He diversified into the transportation business after investing in a taxi and matador. Unlike job work, this business experienced wild swings and needed social networking. Kanak could neither manage nor compete in this business and ended up in the red.

The news of his bankruptcy filtered back to his village. His parents got worried and asked him to come home for the second time. Kanak refused, as he was confident

that he would live to fight another day. He sold all his belongings and shifted with one taxi to Guwahati. He was back to square one and now had to start things right from the scratch. Finally he settled down to be a general order supplier to various parties and government departments.

Genesis of innovation

The first innovation Kanak made was an air gun, almost soundless, when he was a student of class six. He won the first prize when he displayed it in an exhibition. But the gun was thereafter taken away from him for safety. It was only after he settled down to be a general order supplier that he could focus on his childhood dream of building cars, planes and boats.

Gravity operated cycle: He has built an arrangement in the bicycle to harness the repeated downward movement of the rider on a spring-loaded seat. This would charge a spring that would release the energy and make the cycle move without much pedaling. The rider on the cycle appears like galloping on a horse as he sits on a reciprocating seat fitted to the fulcrum lever. Due to the eccentricity of the rear wheel and the spring loaded lever arm, the person on the rider's seat gets lifted up with changes in the levels of potential energy and spring recoil. Against this, gravitational force again pulls the rider down. Prior art does not disclose any comparable model where the principle of gravity, rider's weight and conservation of energy have been combined.

TRYGO X, a three wheeler: He developed it to fulfill the wishes of his seven year old daughter. As she was tired of traffic jams in the city, she asked him to develop a small vehicle that could smartly zip in and weave through the city traffic. The TRYGO X could weave in a lane with a span of 6 feet, and sharply turn and park perpendicular to the curb. It can travel at 60 km/hr and has an average mileage of 30 km/litre.

Kanso hybrid car: This is a new concept hybrid car without gears that runs on solar power as well as on fuel. The car has a 100 cc engine powered by four solar panels generating 320 watts of energy. The engine of the car is basically powered by battery power. The battery charger is hybrid, during daytime the battery can be charged by solar power and at night or in emergencies the battery can be charged by the fuel.

Retrofitted rickshaw: This is a rickshaw fitted with a differential to enable each driving wheel to rotate at different speeds, while supplying equal torque. The low rolling resistance and lightweight made the vehicle energy efficient and comfortable to drive and handle.

Compressed air car: This is a car with a unique arrangement; integration of motorcycles and Maruti car engines, run with compressed air. Kanak claims to get a maximum speed of 120 km/h in this car.

Some of the other innovations that Kanak has come up with are Powered hang glider using a 2-stroke motorbike engine in 2001; Aeroboat (Shallow bottom boat propelled with on board aero-propeller) in 2002; Amphibian boat using on board aero-propeller in 2003; Water bicycle; Treadmill bike; and "Kontilo" 5.5 hp Mini Tractor for ploughing, tilling and rural transportation both for hilly and plain terrain

Product application and dispersion

After a lifetime of effort and struggle, Kanak's innovative spirit seems to be finally getting recognition at the national and global platforms. He received the Vocational Excellence Award for the year 2007-2008 from Rotary International, Durgapur. He also attended the International seminar on Renewable Energy at New Delhi and Husum, Germany in 2008. NIF facilitated participation of the innovator in a Fab Lab conference organized by the Massachusetts Institute of Technology at Chicago, USA in 2007. The innovator has also received enquiries from countries like the United States for exploring possible technology transfers for his technologies. ❑

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Primary Education in Assam

Subhrangshu Sekhar Sarkar
Papori Baruah

A lot needs to be done in the arena of primary education in Assam. The main challenge lies in bringing the never enrolled and drop out children into the school education system

THE MODERN age of education in Assam began with the annexation of Assam with the British Empire in accordance with the treaty of Yandaboo in 1826. In 1840, Late W. Robinson was appointed as the first Inspector of Schools. In that period, the political and social scenario of Assam was unstable and very less importance was given to education sector. The British Government had taken initiative with the help of some local people to improve the education system in Assam. As a result, by the year 1875, the number of educational institutions for general education increased to 1,293. Most of the changes and developments have occurred since independence in 1947. After independence, the Government has taken major steps in education sector as it was the vital factor to national progress and security. The construction of Gauhati University building was taken up during the period and an amount of Rs. 43 lakhs was allocated for the purpose.

In terms of education, Assam has developed into a top educational destination in the North Eastern India as well as the country. To enhance the status of education in Assam, the State Government has introduced many innovative educational policies. The capital city Guwahati is a key destination for higher education for students of the whole of north-eastern region.

Primary school education is most often referred to as elementary school, which is usually composed of grades one through six. The main purpose of primary education is to give children a strong foundation in the basics of a general curriculum, with an emphasis on reading and math. The following are some of the features related to primary education.

A primary education is for children who are approximately five to eleven years old, with an exception for children with learning disabilities and those in Special Education. There are no age restrictions in these instances. The subjects targeted by primary education are reading, mathematics,

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social studies, science, physical education, and health. Subjects are not intended for intensive study; rather, they are meant to be taught for general exposure.

Universalization of upper primary education in India is normally discussed in terms of enrolling and retaining all children belonging to the age group 11 to 14. But all children of this age group (11 to 14) cannot be enrolled in upper primary classes unless they complete primary level of education.

UNICEF had targeted that by 2015 all boys and girls should complete a full course of primary schooling. UNICEF advocates quality basic education for all, with an emphasis on gender equality and eliminating disparities of all kinds. Denying children access to quality education increases their vulnerability to abuse, exploitation and disease. Free primary school for all children – is a fundamental right to which governments committed themselves under the 1989 Convention of the Rights of the Child.

Understanding the importance of education, the country has enacted an Act entitled "Right to Education Act" that makes right to education of every Indian child a fundamental right. It is a revolutionary step taken by Government of India in spreading education among children of the country. However, it is not a one-day affair as there has been persistent effort in the country for spreading education among masses. Among important events, 86th Amendment Act (2002) via Article 21A (Part III) of the Constitution of India seeks to make free and compulsory education a Fundamental Right for all children in the age group 6-14 years. In June 2005, the Central Advisory Board of Education (CABE) committee drafted the 'Right to Education' Bill and submitted to the Ministry of Human Resource Development. More than six decades after Independence, the Indian government has cleared the Right to Education Bill that makes free and compulsory education a fundamental right for all children between the ages of 6 and 14. Thus, it is a herculean task on the part of the government to ensure that all children in this age group receive education.

Primary Education in Assam

School education in Assam is imparted through a number of pre-primary, primary, middle, high and higher secondary schools. The Government of Assam has implemented the free and compulsory education policy for students up to the age of 14. Schools in Assam are either state run or under the management of private organizations. The syllabus at primary schools is set by the Directorate of Elementary Education, Assam. While most schools are affiliated to state boards there are several schools in the state affiliated to the Central Board of Secondary Education (CBSE). Under the Right to Education provision, the Government of Assam has decided to have one primary school in a radius of one kilometre and an upper primary school in a radius of three kilometres.

The Directorate of Elementary Education, Assam is responsible for management of elementary education in the state. It strives to achieve the objectives of decentralizing management of schools up to Block level, and organizing activities towards attainment of universalization of Elementary Education (UEE). This Directorate is responsible for administration control, development and expansion, inspection, supervision, monitoring and evaluation of Elementary Education in Assam. In its effort towards Universalization of elementary education, it receives major support from Sarva Shiksha Abhijan.

As per the data published by District Information System for Education (DISE) developed by the National University of Educational Planning & Administration (NUEPA), during 2009-10 Assam has 53,338 primary schools in its 23 districts, where Government schools account for 44,518 representing 83 percent presence. These Government schools are mostly run by the Department of Education aptly supported by the Sarva Shiksha Abhijan Mission, Assam. The total enrolment of children in primary schools during 2009-10 stands at 32,86,215 where children studying in Government primary schools account for 85 percent of the total learners. During the period 2002-03 and 2009-10, 5179 Government primary schools were opened. In 2009-10, Assam has got 13 primary schools per 1000 child population. This figure is not comparable with other states of North Eastern region because of comparative higher population in Assam. The figure for Arunachal Pradesh for the same period stands at 43. But if we compare density of primary schools (per 10 sq km range) in Assam with Arunanchal Pradesh, its stands at 5.25 for Assam whereas it is 0.54 for Arunanchal Pradesh. The ratio of primary school to upper primary schools for Assam during 2009-10 stands at 2.85:1 while the national average is 2.23:1. This situation needs to be improved. Assam has recorded average number of 229 instructional days in 2009-10 as against 224 national average. In infrastructure front, Assam is

lagging behind as the average number class rooms recorded in schools of Assam during 2009-10 stands at 2.6 against national average of 3.1. The average student-classroom ratio in Assam stands at 28 in 2009-10 while the national average is 32. It is interesting to mention that Bihar during the same period has the average student-classroom ratio at 88. Moreover, Assam's position in availability of teachers seems to be modest as 84 percent of total primary schools in Assam during 2009-10 have got 2 or more teachers. In comparison, Arunachal Pradesh has 65 percent of its primary schools are handled by a single teacher. As such, in Assam more than 82 percent of its total primary schools have got a student teacher ratio of less than 60. Assam has on an average 3 teachers per primary school during the period 2009-10 which is equal to the national average. The pupil teacher ratio in Assam during 2009-10 has been 25 which is better than the national average of 33. Thus, Assam's position in the primary education scenario is satisfactory when compared to the national scenario.

About the Role of Sarba Siksha Abhijan (SSA) Mission, Assam

SSA was launched in Assam in 2001-02 along with the rest of the country. Since then, SSA Assam has made a significant progress to expand the horizon of elementary education in the State of Assam. Since its inception, more than 50 lakh children are covered through various SSA interventions. SSA Assam has the objectives of 'all children in school' with a focus on elementary education of satisfactory quality with emphasis on education for life. With the aim of 'universal retention', SSA, Assam has achieved the target almost 100 percent as a very low percent of 3 percent has been recorded as out-of-school as per the data provided by SSA, Assam. The Village Education Register (VER) is maintained to keep the record of out of school children in each village.

SSA, Assam has different components under its jurisdiction for smooth management of elementary education. Besides, it looks after some other segments of learners earmarked as 'Hard to Reach' that comprises of out-of-school children who are put to employment for earning purposes. SSA, Assam is running Sanjogi Siksha Kendra (SSK), Residential Bridge Course for such children.

The SSA has a time-tested system of administration of primary schools in the State of Assam. Each school is managed by a School Management Committee (SMC) which is a body comprising of head teacher and other members of the community. To ensure community participation, SSA has constituted Village Education Council (VEC) in each village to look after the functioning of primary schools situated in the respective village. The VEC is headed by President and Secretary who are selected among respected persons of the village.

Thus, SSA works as a support organization that supplements the effort of the education department of the Government of Assam. SSA, Assam has been actively contributing by providing grants, teachers' training, monitoring & supervision etc. Assam, being special category state, is provided with 90 percent grant by the Central government while 10 percent is provided by the State government. SSA, Assam become the vehicle of the Right to Education (RTE) in providing support to the endevaour of universal education. SSA also provides its support for the education of Children With Special Needs (CWSN) and in this regard the services of Resource Teachers and Volunteers are also provided by SSA.

Discussion and Challenges

On the basis of several studies carried out by the authors in the area of primary education in Assam, following issues are worth mentioning. Attention must be paid to these issues so that the desired objectives are achieved.

1. Natural calamities affect the normal functioning of the centre leading to lower attendance of learners. In rainy days, attendance is very low due to poor road communication etc. This is very true in case of floods, which is a natural phenomenon in Assam.
2. Some areas of the State are found to be prone to malaria; deaths of learners are reported in many cases. Lack of pure drinking water is also noticed.
3. Village Education Council (VEC) has a lead role to perform. It is seen that where VEC President/Secretary is sincere and dedicated, the primary schools also perform well. The selection of an honest, sincere and dedicated person for VEC President, Secretary is of prime importance.
4. Exact calculation of out-of-school children can be made by comparison of Village Education Register (VER) figure with those enrolment figures in primary schools. In most of the cases, VERs are found not to be maintained properly.
5. Sometimes Class IV pass-outs find problem in getting admission in Class V due

to insufficient number and capacity of upper primary school in nearby locality. Hence, in many cases, continuity in education suffers.

6. Mid Day meal in itself is a debatable issue. It has both positive and negative impact. It is seen that children both enrolled and non-enrolled come to school at the time of distribution of mid-day meal. The issue needs a threadbare analysis.
7. Medium of instruction has been a vital issue. It is felt that a bridge language is necessary for perfect dissemination of knowledge in many of the centres.
8. Evaluation records should be maintained on gender basis; the same should be maintained in case of attendance register also.
9. It is seen that though local people are involved for school functioning, however, in many cases community is not aware of the same. Community involvement should be strengthened further.
10. It is seen that due to poor economic condition of the members of SMC/VEC, they are not able to contribute in case of deficiency in annual grant provided by SSA.
11. Enrolment of students in provincialized schools is a burning point these days. In most of the schools where visits were made, it was seen that attendance of students was very poor. Care is to be taken for improving enrolment. For a holistic approach, quantum of annual grant may be linked with the actual enrolment of students. Physical checking of presence of enrolled students are to be carried out at random.
12. Accountability of Teaching Learning Materials (TLM) use in class transactions is to be ensured. It is seen that expenditures for TLM are not properly maintained. TLM preparation record is to be maintained by each teacher so that proper record for each year's TLM fund utilization can be ascertained.

The Way Ahead

To ensure quality of education in primary schools of Assam, creating awareness among the community people for the development of school in their locality is of utmost importance. The people should be convinced that the development of the school in their locality will ultimately help in bringing development of their wards and thus, would help in their economic well-being. Community involvement in school activities should be increased by way of

a) Arranging regular parents' meeting, other members meeting like VEC, matri got etc.
b) Regular exhibition of TLM
c) Arrangement of Workshops, school sports, cultural functions, street play, festivals etc.

Once the community people realize their role and responsibilities towards the schools in their locality, they themselves will monitor the utilization of annual grant and thus can bring a total educational development in the locality.

It is heartening to note that Government of Assam has decided to introduce the National Assessment and Accreditation Council-style gradation for the state's primary schools. Schools which get "A+" will be given awards by the Government while those securing "A" grade will be awarded by the education department. Schools getting "B" grade will be asked to improve while the rest will face censure. Thus, the state education department would assess the performance and award grades to 35,000 odd primary schools in the state.

The Assam Government has also decided to bring in a structural change in the elementary level of education by including Class–VIII in the upper primary level and Class–V in the lower primary level. So far, the upper limit of the upper primary level was confined to Class – VII. The new arrangement has been made as per the mandate of the Right to Education Act, 2009, which has provided for inclusion of the classes between I and VIII in the elementary stage. The State Government is going to introduce an eight-year education cycle in the elementary stage.

Conclusion

A lot needs to be done in the arena of primary education in Assam. The main challenge lies in bringing the never enrolled and drop out children into the school education system. For such purposes, VECs and SMCs have tremendous responsibilities in checking out of school children. One major reason for children not coming to school is parents' ignorance. Thus increasing parents' awareness is vital. There emerges a need for an 'Education Worker' like that of a health worker (ASHA in NRHM) who can move from door to door increasing awareness of the parents and children regarding education and monitoring their attendance. The poor economic condition of parents also debars their children not being sent to school. A plan for convergence of programmes under Rural Development and Social Welfare Department can be thought of in conjunction with the efforts of education department. ❑

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Reviving the Tea Industry

Bikash Singh

The state accounts for 51 percent of India's tea and 13 percent of global tea production. The sector provides employment to around 5 lakh people directly and another 5 lakh on seasonal basis

DESPITE ASSAM'S quest for rapid industrialization especially in the manufacturing sector, centuries old tea sector continues to be the major industry and largest employer.

Assam is the birth place of Indian tea. The state accounts for 51 percent of India's tea and 13 percent of global tea production. The sector provides employment to around 5 lakh people directly and another 5 lakh on seasonal basis. Over 10 lakh persons are dependent on tea industry, be it employment or services.

The turnover of Assam tea industry is 5,000 crores. Tea has evolved as a culture here and the state's production is estimated at 480.2 million kgs (mkgs) last year. At least 2.7 lakh hectares of area are under tea production in Assam.

The fiscal health of the industry which was afflicted by recession is recovering but the industry is yet to get back to its pristine glory. The industry has seen depressed prices for five years starting from mid-1999.

The all-India average auction prices of tea, after scaling a peak of Rs 76 per kg in 1998, started falling from mid-1999 onwards; prices reached low of Rs 56 per kg during 2002 and 2003. Price somewhat recovered in 2006.

Tea faced consistent depression in prices in both the domestic and international markets, a situation that was further compounded by rising cost of production, low productivity due to old age of tea bushes and sluggish growth in domestic demand for tea besides shortage of labour.

In last ten years additional area under tea increased by around 8 lakh hectares globally, China increased 6 lakh hectares (equivalent to current tea are in India) while Kenya and Vietnam combined brought one lakh hectares under tea production. During the same period, India increased by 89,000 hectares.

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Analysts feel that this year owing to favourable weather condition country will be attain crop of around 990 mkgs.

However despite being a tea producer, per capita consumption is low in India. The per capita consumption in UK is around 2.10 kgs, Russia 1.64 kgs, Australia 700 gms, Canada 720 gms, Egypt 970 gms, Pakistan 840 gms.

In India, about 800 million kgs of tea are consumed annually and consumption is increasing annually at the rate of 3.3 percent. Around 85 percent of households in India consume tea. Interestingly tea consumption in tea bastions, Assam and West Bengal is lesser than national average.

The per capita tea consumption in India is around 750 grams while the per capita tea consumption in Pakistan is around 1kg. In Western India the consumption of tea is quite satisfactory. Gujarat consumes around 55 to 60 million kgs of tea annually at least 50 to 60 percent of which comes from Assam and rest is taken from other places of the country.

The per capita consumption of tea in Gujarat is about 1.4 kgs in contrast to the national average of 750 gms. In terms of per capita consumption, Gujarat is the fourth highest after Chandigarh, Lakshadweep and Punjab.

It has been a long pending demand of the industry to unleash sustained generic campaign highlighting the health benefits of tea to attract youths and increase domestic intake of tea.

To address the critical problem of ageing tea bushes, the Government of India announced special purpose tea fund (SPTF). The multi-crore schemes announced couple of years back is meant for replantation and rejuvenation of tea bushes.

The cost of production in India remains the highest among major tea producing nations. Studies undertaken by the Tea Board reveal that 38 percent of all tea bushes have crossed the economic life of 50 years and another 9 percent are in the age-group of 40 to 50 years.

Since the 1970s the Tea Board has been implementing a scheme of replantation and rejuvenation. Despite providing subsidy at 25 percent of the unit cost, the cumulative area replanted has been a meager 63,000 hectares with an average of 1789 hectares replanted per annum.

The reason for the low rate of replanting has been the resource crunch faced by the growers because of the prolonged recession in the industry and the revenue loss during the gestation period.

Under the SPTF the estimated total area to be replanted and rejuvenated over a 15-year period is 2.13 lakh hectares - replantation in 1.71 lakh hectares and rejuvenation in 0.42 lakh hectares (rejuvenation pruning is required in the hilly areas where replantation is not possible).

Of the total area to be replanted and rejuvenated, 46 percent is in Assam, 28 percent in West Bengal, 22 percent in South India and the rest in other tea growing areas. The total estimated cost is Rs.4761 crores, out of which Rs 4360 crores on replantation and Rs 401 crores on rejuvenation.

The programme is targeted at the organized sector comprising about 1600 tea estates spread over 4 lakh hectares. It was estimated that the programme would generate additional employment at the rate of 22 million person days per year, providing gainful employment for dependents of permanent workers residing in the tea plantations.

According to the Commerce Ministry, replantation would increase from the present average of 1789 hectares per annum to 11,359 hectares per annum and rejuvenation from the present average of 626 hectares per annum to 2814 hectares per annum.

The cost of the programme is funded by margin contributions from growers, subsidy from the Central Government, and long-term loans. The estimated outlay for the 2006-07 and the duration of the 11th Plan was fixed at Rs 567 crores.

Tea industry wants increase in the subsidy under SPTF from 25 to 40 percent. The industry also wants the government to incentivise the specialty tea and continue with the incentives offered to the orthodox tea during the 11th plan period.

Indian Tea Association chairman C.S. Bedi during the consultation on the approach to 12th five year plan noted, “Many tea companies have not yet been able to avail of the loan facility under the SPTF for various reasons like unattractive rate of interest, procedural complexities, and adverse credit appraisal by the Agency etc.”

The industry sought interest subvention on the loan finances arranged on their own from banks/ financial institutions. Bedi suggested an interest subsidy at the rate of 3 percent on the applicable rate of

interest on the funds borrowed by the Tea companies specifically for the purpose of the approved activities under the SPTF.

Tea industry in India has witnessed revolutionary change in last 10 years while production from organised sector had declined by 53 mkgs, the emerging force of Small Tea Growers (STGs) has added 160 mkgs. STGs propelled production from 97 mkgs to 257 mkgs.

A survey by the Assam Government and Tea Board has put the numbers of STGs at around 68465 in 14 districts. Interestingly insurgency infested areas of Upper Assam are propelling the growth. Major concentration of the STGs is in tea-rich five Upper Assam districts which accounts for 94 percent of STGs in 14 districts of the Brahmaputra valley. Small growers produce around 29 percent of the total tea production in the State.

Considering the growth prospects in this segment, Government of India has decided to set a separate directorate of STGs.

With global warming affecting the tea bushes and erratic rainfall pattern, the tea planters have sought subsidy for coming up with irrigation facility and dedicated subsidy scheme for rain water harvesting. Last year tea production took a beating following pest attack ((Helopeltis theivora).

Assam lost crop to the tune of 15 million kg. In some gardens, crop loss was much more than the average, their loss was 20 percent to 30 percent as compared to 2009. Tea Research Association's (TRA) Tocklai Experimental Station (TES) in Assam has initiated a joint study with ITC University, Netherlands.

Initial study has established perceptible changes in weather parameters e.g. definite changes in precipitation, temperature and carbon dioxide rise etc. have been observed on long term basis in the North Eastern India.

The study has found that minimum temperature has risen by two degrees and rainfall has over the years followed an irregular pattern. The amount of rainfall in the region is less by at least 200 mm.

The need to focus on quality tea is hotly debated in the industry as the world market is tilting towards quality tea. Assam is overwhelmingly a CTC tea producer.

Assam industry minister, Pradyut Bordoloi observed there is need to produce quality orthodox tea since in world tea market shares of CTC, Orthodox and Green Tea are 41 percent, 45 percent and 14 percent respectively but Assam produces only 8 percent orthodox and 92 percent CTC teas.

The orthodox subsidy scheme of 11th plan has shown positive results and as Bedi pointed out India is once again gaining market in the export of Orthodox tea.

However the increasing social cost is something which the industry wants the government to share in order to add to the competitiveness of the Indian tea in the world.

The major pressing burden on the cost of producing tea in the organized sector is the large amount of expenses on account of the archaic welfare provisions of the Plantation Labour Act.

The Inter-ministerial Committee's recommendations for sharing of the Welfare cost by the Central and State Governments and the Tea Estate has not been implemented yet. The industry argues that the expenses under the head of Social Cost now amount to Rs.8 per kg approximately, which is a major reason for loss of the competitive edge of Indian tea in the international market.

Recently the industry is witnessing shortage of skilled labour. Mahatma Gandhi National Rural Employment Guarantee Programme is attracting work force from tea garden areas.

Besides the industry is facing reverse migration. North Eastern Tea Association (NETA) Chairman Bidyananda Barkakoty informed that around 300 families have left their jobs in a tea estate and gone back to Telangana.

While new areas are coming under tea cultivation in Assam, tea is now brewing in several non traditional areas of Northeast India. While Assam and Tripura are traditional tea growers, states like Meghalaya, Nagaland, Arunachal Pradesh, Manipur, Mizoram and Sikkim are non traditional tea producing areas.

Tripura produces 7.5 mkgs annually. The non traditional areas together produce 2.98 mkgs annually. Arunachal Pradesh produces around 2.34 mkgs, Nagaland produces 0.20 mkgs per annum. Sikkim accounts for 0.16 mkgs, Manipur 0.11 mkgs, Meghalaya 0.10 mkgs and Mizoram produces 0.07 mkgs.

In recent times the auction system has moved from manual

to electronic system, however Guwahati Tea Auction Centre (GTAC) is fast losing trade to Kolkata Tea Auction Centre. In 2009, GTAC sold 138.5 million kgs (mkgs) with average price realization of Rs 110.4 per kg. In 2010 the volume plummeted to 130.36mkg with average price realization of Rs 113.

In 2010 Kolkata auction centre auctioned 154.4 mkg with price realization of Rs 130 per kg.

To increase domestic consumption, GTAC has announced its foray into tea retailing. The auction centre plans to set up a chain of such retail outlets across the state to sell quality tea and boast the sales of the local tea.

Similarly the first integrated tea park of Northeast India will come up in Chaygaon in the outskirts of Guwahati. Around Rs 23 Crore will be invested in the project. The pre -feasibility report of the tea park is already prepared.

According to D.P. Maheshwari, former President, Tea Association of India, "Export in 2011 registered so far up to July continues to display the tragic saga of decline. Against 107 mkg in 2010 till July, this year we could attain only about 90 mkg. We should not take solace in marginal improvement in unit value of export."

It is debatable as to how the industry is positioned today but it heartening to note that several entrepreneurs from different places of Assam are exporting organic tea to International market.

Small tea growers with indigenous methods of organic tea production are taking to foreign markets. Several villagers in Assam have indigenous methods of tea preparation.

Singpho community, which is credited for being pioneers in the discovery of tea have developed 'Tea Coin'. The product is sold under the brand name Phalap (tea is known as phalap in Singpho language). Two grams of tea are packed in coin shape, which can be consumed by dissolving in hot water. They produce a blend of Oolong and green tea.

The Singpho tea has made its presence in USA, Thailand and UK markets. Nearly 400 kg has been exported to Canada, followed by USA with 150 kg, Thailand with 120 kg, UK with 90 kg.

The fundamentals of the tea industry of Assam is strong. However besides clamouring for government support it is high time that the industry comes up with out of the box ideas. New ideas and innovation will be a game changer for the cup that cheers and will help in removing the tag that the industry has earned as "one of most pampered sector".

The industry has seen several ups and downs in past for both economic and non economic factors but ever increasing competition will test sustainability prowess of this industry again and again and only the fittest will survive in this globalized order. ❑

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Tea output up 3 per cent

India's output of tea grew by almost 3 per cent to 111.06 million kg in September, while exports registered an increase of about 9 per cent to 21.04 million kg during the month.

Tea production stood at 108.10 million kg in September, 2010, while exports stood at 19.34 million kg, according to data by the Tea Board.

Tea production rose by 5 per cent to 729.66 million kg in the January-September period of the current year from 692.99 million kg in the corresponding period of the previous year.

Overseas shipments of the brew declined by 9 per cent to 130.28 million kg in January-September, 2011, from 143.48 million kg in the first nine months last year.

India's tea output rose mainly on account of increased production in Assam, which accounts for more than 50 per cent of the country's total output.

Tea production in Assam rose by 7 per cent to 66.96 million kg in September.

In North India, tea production stood at 93.06 million kg in September this year, as against 89.70 million kg in the same month last year. In contrast, output in South India declined to 17.99 million kg in September, 2011, from 18.39 million kg in the corresponding period a year ago.

Media and Development

Prasanta J Baruah

On the whole, Assam can feel proud of having a vibrant media in the State today, equipped with latest technological advances to face the challenges of modern mass media

IN A democratic country, a free press is considered to be the fourth pillar of democracy, alongwith the Legislature, Executive and Judiciary. The Indian Constitution stipulates that the four pillars of our democracy should work hand in hand to usher in justice, equality and development among all sections of our society. It is pertinent to note that for our democratic system to be a success, the four major organs of our system have to work closely to ensure that the people enjoy the fruits of democracy. Development reporting in the media has been a part of the western journalistic scene for a long time. In India, it has acquired prominence only in recent years. It was generally believed that Indian newspapers were too pre-occupied with political events to give much thought to what was happening in the economic field and that political reporting took a substantial percentage of space in the daily columns.

Jan R Hakemulder, Fay AC De Jonge and PP Singh in their book 'Professional Journalism', has pointed out that the problem with development reporting – atleast till India became free – has been that there was little development to report. It was only after India went through a succession of Five-Year Plans that thought was at last given for assessing the results of planning. The Planning Commission itself had a house magazine: *Yojana*, which was primarily devoted to development reporting. The publications of economic dailies like 'The Economic Times' and 'Business Standard' undoubtedly gave a fillip to development reporting in recent times.

Assam has a rich and eventful history of journalism which started with the publication of '*Arunudoi*', a news magazine by American Baptist missionaries in 1846. Published in Assamese primarily with the objective of spreading the message of Christianity, the news magazine covered a wide range of local issues, alongwith news from across the world. Assam came under British rule with the signing of the Treaty of Yandaboo in 1826, when British forces ousted the Burmese, who earned notoriety, for their tyranny from the soil of Assam. British rule however witnessed the introduction of the Bengali

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language in the schools and courts of Assam. The Assamese language was restored its rightful status only after a long and arduous struggle in 1869. Newspapers and magazines published during British rule dealt with local issues and social ills like opium addiction, alcoholism, casteism, etc.

The discovery of tea in Assam and the Anglo-China war of 1833 which resulted in disruption of Chinese tea supply to England witnessed global investment in remote Assam in the tea sector which gradually destroyed the feudal institutions and economy of the Ahom rulers of the past and led to the growth of capitalist economy. Alakesh Baruah in his book "*India's North East: Development Issues in a Historical perspective"*, says that the growth of the tea industry necessarily led to the growth of communication and infrastructure network. Building of roads and bridges were taken up. Navigation by the Brahmaputra River was introduced by Assam Company by a steamer service from 1841. Railway lines were laid from Dibrugarh to Ledo by 1882 by the Assam Railways and Trading Company with the aim of joining the remote tea gardens to the steamer service.

According to Baruah, the whole economy of Assam during that period revolved around the tea industry, though coal and the oil industry sprang side by side. The first refinery in Asia, the Digboi refinery was commissioned in 1901. By 1871, about Rs 18.6 million had been invested in the tea industry. The total investment by 1881 had touched Rs 63.8 million. Investment from 1881-1901 was about Rs 200 million with an average of Rs 10 million invested annually. It was one of the highest investments in a region in British India. The advent of British rule in Assam and the efforts of the Baptist missionaries to spread Christianity through the first Assamese news magazine '*Arunudoi*' (1846), was viewed with misgiving by the local Vaishnavite Hindu leaders. In a bid to counter the activities of the missionaries, the *Satradhikar* (Head) of the Auniati Satra (monastery) in the river island of Majuli, The seat of Vaishnavite religion and culture in Assam, started the '*Asam Bilashini'*, in 1871 by bringing a printing press all the way from Kolkata. The '*Arunudoi*' continued publication till 1880. It was a popular news magazine with a circulation of over 700 during that period. The '*Asam Bilashini'*, however stopped publication after a few years. It was revived by Krishna Kanta Bhattacharyya in 1913 from Jorhat with permission from the Auniati Satra satradhikar. The paper had to face a lot of harassment form the British rulers for its anti-establishment outlook and had to close down.

A successful newspaper of the British period in Assam was '*The Times of Assam*' (1895), edited by Radhanath Changkakati from Dibrugarh, which was at that time the hub of economic activities in Assam. A pro-British paper, 'The Times' was patronized by the government, planters and the business class through advertisements which ensured its economic viability. This newspaper continued publication till 1947 and had the distinction of completing 50 glorious years of publication. The 'Advocate of Assam' was another weekly English paper published from Guwahati.

With the freedom movement in the country gathering momentum in 1920s, the publication of the weekly '*Asomiya*', from Dibrugarh, by the family of cultural icon Jyotiprasad Agarwalla was a significant development. It was considered to be a mouthpiece of the Congress and was critical of the functioning of the British government of the day. Prominent Congress leaders like Dev Kanta Barooah and Omeo Kumar Das edited the paper.

The first Assamese daily newspaper, '*Dainik Batori*', was published from Jorhat in 1935 by Siva Prasad Barooah, a prominent Assamese tea planter. Its emphasis was more on language and literature. Other newspapers of the British period were '*Asam News*', edited by Hem Chandra Baruah from Guwahati and '*Asam Bonti'*, edited by Padmanath Gohain Baruah from Tezpur.

According to Prafulla Chandra Barua, former editor of the Assamese daily '*Dainik Asam'* and author of the book, '*Asomor Batori Kakat: Eti Ruprekha*', the media in Assam in the pre-independence period was mostly engaged with language and literature, a hangover of the days when the Assamese people had to struggle for restoration of the Assamese language as the language of the courts and schools. A major issue of the period was the issue of migration of people from East Bengal to Assam in large numbers. An analysis of this period will reveal that huge British investments in the tea, oil and coal sectors in Assam completely changed the socio-economic scenario in Assam. The influx of labour to work in the tea gardens and land hungry East Bengal migrants who were encouraged by the British rulers to settle in the wasteland areas created serious demographic changes which posed threat to the indigenous people. These concerns were adequately reflected in the pages of the media of that period.

An important reason behind the absence of adequate development reporting in the media of the period may be due to the fact that the Assamese people were not greatly involved in the economic activities of the time. Successful Assamese businessmen were so few that they could be counted on one's finger tips. Most Assamese people did not have the necessary capital to venture into independent business activities. Moreover, the people had to get used to the new business culture the British rulers brought in. The social milieu also looked down upon risky business adventures. An Assamese father would rather give his daughter to a man working as a government peon than to a fledgling businessman. This diversion of the people's attention from the

exploitive economic activities to the social issues also suited the interest of the British rulers.

The country's freedom in 1947 and the accompanying partition brought new problems to the people of Assam. The traditional economic routes through East Bengal (now Bangladesh) were closed down, even as a fresh wave of Hindu Bengali refugees made their way to the state. This led to revival of the old language rivalry between the Assamese and Bengali languages resulting in the language riots of the sixties. Independence, however, ushered in a new trend of aggressive journalism in the media in Assam.

In 1939, even as the Second World War was breaking out in Europe, a young business entrepreneur Radha Govinda Baruah started a new English weekly called '*The Assam Tribune*' from Dibrugarh. With the established 'The Times of Assam' still around, many considered Baruah's initiative as an ill-advised move. However, Baruah went ahead with a professional approach bringing in senior journalist Lakshminath Phukan, then working with '*The Statesman*' in Kolkata as the founding editor of the paper. There was no looking back for Baruah. In 1946, he shifted the Tribune establishment to Guwahati and started 'The Assam Tribune' as the first English daily newspaper of the north-eastern region.

'*The Assam Tribune*' soon became the mouthpiece of Assam reflecting the hope and aspirations of the people. It has today completed 73 years of publication, becoming a part of the lives of the people. RG Baruah launched an Assamese daily '*Dainik Asam*' and weekly '*Asam Bani*' in the sixties, to establish the Tribune group as a respected publishing house of the state. In 1972, the family of freedom fighter, Congressman and former Assam minister Debeswar Sarma started the '*Dainik Janambhumi*' an Assamese daily, from Jorhat which had a good circulation in the upper Assam areas.

The media in Assam in the post-independence period reflected the people's yearning for change. Freed from the shackles of British imperialism which exploited the natural resources of the state without bringing any tangible benefits to the people, the media highlighted demands of the people like construction of the first bridge over the river Brahmaputra at Guwahati to fast track the road and rail communication connecting Assam with mainland India. Demand for an oil refinery in the state to process the huge oil resources in the state took the form of a people's movement in view of the Central Government's reluctance to accede to the state's demand citing security threat from China. An analysis of the role of the media vis-à-vis development during this period would reveal that the media played a positive role to highlight the development initiative of the government, which in the absence of substantial private investment had to play a pivotal catalytic role. The media of the day supplemented the efforts of the government by highlighting the problems and grievances of the people.

The media of the time played a sober, restrained role, though at times emotions took precedence. Reports about corruption and irregularities in execution of government projects and schemes were taken seriously by the government and in many cases errant officers were punished. Social values of the time were so strong that a report in the media about corruption was considered to be a matter of great shame and humiliation leading to social ostracism.

The six-year-long Assam movement (1979-85) against illegal foreigners was a turning point in the media world of the state. It saw the growth of the media industry with the launch of newspapers like '*The Sentinel'* (1983) and the *Asomiya Pratidin'* (1993) among others. It also witnessed the growth of investigative journalism. The social upheaval witnessed during that turbulent period resulted in a massive growth of newspaper readers cutting across all sections of the society in the state.

The Assam movement came to an end with the signing of The Assam Accord in 1985. The post-Accord period has seen an unprecedented media boom in Assam. Today, the state has about 15 daily newspapers in different languages like Assamese, English, Hindi and Bengali, besides, six private TV channels beaming the news 24-hours a day. The intense competition in the Assamese media has resulted in the newspapers and TV channels making all efforts to bring out stories on corruption, anomalies, exploitation, discrimination etc. to attract the readers and viewers. Reporters and photographers in mobile TV vans of these channels are today a common sight in the roads of Guwahati. Improvement in their network has today helped them to reach out to all happening events in the state. Coverage of news in the state has improved to a large extent in the last two decades. This has also increased the media coverage of the development scenario in the state. Close monitoring of developmental projects and schemes by the media in many cases have resulted in checking corruption and anomalies. However, most newspapers and channels are not equipped with adequate manpower and resources to do justice to their work. There are also allegations against a section of the media of adopting unethical practices.

On the whole, Assam can feel proud of having a vibrant media in the State today, equipped with latest technological advances to face the challenges of modern mass media. Greater commitment to the interest of the society and integrity and hard work should usher in the golden era of the media in Assam in the coming days. ❑

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Millennium Development Goals: Way so far

Subhashree Sanyal

Focusing on public private partnership and collaboration with civil society will boost Assam's effort towards reaching the Millennium Commitments by 2015

ASSAM AS a state has occupied an important position in India's political map. According to the Census 2001, Assam has a total population of 26,638,407, constituting 2.59 percent of India's total population and 68.24 percent of the entire Northeast. Ranked 14th in terms of total population in India, the State has a population density of 340 (persons per square kilometre). There are 16 Scheduled Castes and 23 Scheduled Tribes constituting 7.40 and 12.82 percent respectively of the State's population. Bodos are the largest plains tribes in the state. The other tribes include the Karbis, Dimasas, and Rabhas among others.

The economy of Assam is overwhelmingly agricultural, providing employment to more than half of the state's working class. Assam produces nearly half of the country's total Tea. The National Human Development Report 2001 places Assam at the 14th place in terms of the Human Development Index value, among the 15 States compared and at the 26th place among the 32 States compared in terms of the Human Development Index. The region continues to be marked by low agricultural productivity, poor infrastructure, tenuous communications and nascent levels of industrial activity.

Looking at Assam from the perspectives of Millennium Development Goals would help analyze where Assam stands in India's development map and the current overall status of progress of the state.

Eradication of extreme poverty and hunger

Assam has an extremely high proportion of its population living in poverty. Despite a decline in the proportion, more than a third of its people are below the poverty line. The percentage of poor in Assam is the highest among the seven States of the North East. According to the Planning Commission Report,

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There is a rural-urban divide; two out of five people in rural areas are likely to be under the poverty line, while in urban Assam, the incidence is less than one in ten. Rural poverty is much higher (40.04 percent of population in 1999-2000) than urban poverty (7.47 percent of persons), and the incidence of rural poverty is higher than the all India figure of 27.09 percent. The key to poverty reduction therefore lies in the growth of the rural economy of Assam. The state can focus on development of rural economy by promoting local products and micro-finance and other economic generation projects across the state.

Achieve Universal Primary Education

NFHS survey indicates that 72 percent of the population in the 6-17 age groups is attending school in Assam. Assam's achievements in literacy places it in the mid range, with a literacy rate of 64.28 percent, in 2001, from 52.89 percent in 1991. There is large gender gap in the literacy rate for men being as much as 71.93 percent and for women it was more than 15 percent lower, at 56.03 percent. There is a large urban- rural gap as well. Urban literacy is as high as 89.88 percent for males and 81.03 percent for females. The figures for rural areas are more than 20 percent less, at 69.02 percent for males and 52.25 percent for females. The problem of school dropouts in Assam relative to other Indian States has also been brought out sharply in the Economic Survey 2000-01. Assam is known for its quest for higher education. Assam presently has two Central Universities and a number of state and open universities facilitating higher education across the state. Different education schemes and programmes, post-matric scholarships and also rural development initiatives towards education have been implemented to fill in the existing gap in accessibility, infrastructure and also quality of education in the state. Proper implementation and monitoring of these schemes can help in reaching the education goals and targets of the state.

Promote Gender Equity and empowerment

Assam ranks 29 out of 32 in the Gender Disparity Index. There is significant disparity in education, employment and health sectors in terms of gender. Further the tribes in Assam are patriarchal unlike Meghalaya which is matrilineal. The position of women in Assam is not different from that of women in other regions of the country. In fact in some respects, women in Assam are more disadvantaged. Using the equally distributed indices for income, health and education, the GDI for Assam in 2001 is estimated to be 0.537. N C Hills has the first rank in the GDI, while its rank in the HDI is 11. It is followed by Morigaon, Jorhat, Kamrup and Dibrugarh. Gender inequity is most visible in the health sphere and reflected in adverse sex ratios, higher mortality rates and a higher incidence of morbidity. Being patriarchal women also get lesser share of their patriarchal property. If we look at various development indicators, women face problems of illiteracy, malnutrition, early marriage and child birth. Thus gender related discrimination is evident through various indicators which are impacting the holistic development of the state. Promoting of women's rights and ensuring equal participation of women would help bridging this gap.

Reduce Child Mortality

Health indicators in Assam reveal inequity- between districts, and between income and other groupings. There is a rural-urban divide, and a gender gap. Through the 1990s there was a secular decline in the Infant Mortality Rate in Assam from 81 per 1000 live births (1991) to 76 per 1000 live births by the end of the decade (1999). The IMR for urban Assam is substantially lower than the all India average (36 per 1,000 as against 44 per 1000 for India); while in rural Assam the IMR is higher than that for rural India (79 per 1000 against 75 per 1,000 for India) in 1999. The IMR is dependent on many factors. These include the health status of women, antenatal and postnatal medical care, access to medical facilities, and the availability of professional medical practitioners. Ignorance and social factors also play an important role. Early marriage and the preference for male children are contributory factors. In Assam, underdeveloped infrastructure is another reason for high IMRs. This refers not just to facilities for established medical care, but also the inadequacy of good, all weather transportation and communications. The inability to move basic medicines easily, especially at certain times of the year, and the frequent occurrence of natural calamities such as floods, are impediments to better health service provisioning.

Improve Maternal Mortality

According to the records the Maternal Mortality Rate of the state is 390 in [2007-09] compared to 480 in [2004-06]. The major causes of maternal death are septic abortion and eclampsia and this

is mainly noticed among referral patients mainly from lower Assam and parts of Meghalaya. Majority of studies indicate that early effects of malnutrition, poverty and neglect contribute to high MMR. Poor nutrition also leads to anemia among pregnant woman, ultimately leading to high mortality rates during the reproductive age. Early marriage, cohabitation and childbearing contribute to higher morbidity and mortality rates. Inadequate utilization of available medical infrastructure is an extremely important causal factor, and one of the major challenges that needs to be addressed by the healthcare system.

Combat HIV/AIDS, malaria and other diseases

HIV/AIDS is on the rise in Assam. As per latest figures released by the Assam State AIDS Control Society, there are 4,251 people living with HIV, the virus that causes AIDS. The jump in the number of people infected with the virus has increased from 364 in 2001 to 4,251 in April this year. Malaria has been, and continues to be, a major problem. It is a disease that thrives in the terrain and climatic conditions of the State. The state government has been using the Anti Malarial Programme to combat malaria and provide preventive mechanisms for the same. Despite these measures, the incidence of malaria continues to be high. The containment of malaria should continue to receive the highest attention of the health care system.

Ensure Environment Sustainability

Assam is a flood prone state. Majority of the times in a year the state is affected by floods along with earthquakes. The topography of the land does not allow sustainable livelihood alternatives. According to Environment Sustainability Index, Assam stands 60 on ESI scale. Assam is rich in natural resources, minerals, forests and water and has vast tracts of fertile land. It is primarily an agrarian economy, with 74 percent of its population engaged in agriculture and allied activities. Cereals like paddy, wheat and plantation crops like tea are grown extensively. Amongst mineral resources, oil takes the top place. Oil was first struck more than one hundred years ago and the oil well of Digboi and other areas is a major source of fuel for not only the North-East but for the country as a whole.

The state of Assam has a rich forest cover encompassing nearly a quarter of its land area. Roughly half of the forests are reserved. Blessed with plentiful rainfall, the forests are a reserve of such commercially useful produce like timber, bamboo, stone, cane, etc. Bamboo is the best natural engineering material on this planet. One of Government of Assam's objective is to promote bamboo as a substitute for wood, to make it the timber of the 21st century.

Develop a global partnership for development

Assam as a state has a lot of disparity in development of the regions, while the northern part of Assam is pacing towards development inspite of security disturbances; the lower part of Assam is still gaping under serious under-development. Districts like Cachar seems to be suffering from stagnancy due to prolonged periods of lack of infrastructure and other developmental resources. There is a need to bring holistic development across the region. Assam being the gateway to the North East has always enjoyed a prominent position. Development of infrastructure, roads, easy communication services, healthcare, sanitation and ensuring safe drinking water is the need of the hour. The state with the partnership of Civil Society Organizations and other development authorities like DoNER and NEC can bring about global partnership and progress in the state.

Conclusion

Assam as a state is blessed with a lot of natural resources. The state is lagging behind in terms development and infrastructure primarily. Though the government is focusing on development of North Eastern Region there is a special need to explore need based intervention in the state. All government programmes and policies implemented in Assam often lack fruitful implementation due to infrastructural constraints and smooth fund flow. Further the government can look into the intra-state development disparities. The development process of Brahmaputra Valley region is speeding up at large with very little for the lower Assam valleys like Barak. This developmental gap needs to be bridged which can be solely done through political efforts. Government can also focus on local development of backward regions by promoting special production and marketing of products typical to the region. Focusing on public private partnership and collaboration with civil society will boost Assam's effort towards reaching the Millennium Commitments by 2015. ❑

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The Lost Revolution

I K Barthakur

The new high yielding paddy, ripened in about a hundred days. It formed its milk in the glumes almost two months earlier than the traditional varieties

MR. DASS had volunteered his plot of land for the demonstration. He was a needy small farmer but his ideas looked ahead. When the village was informed about the new seeds, which gave three times the traditional yield and would mature in early October instead of December, he had immediately seized the opportunity while the timorous farmers of the village, had not. His secret hope was to sow another crop of mustard, potatoes, vegetables, and wheat, after harvesting the paddy crop in the month of October, which was not otherwise possible because the traditional paddy crop did not truly vacate the land until December-January.

Everyone, off and on, came to see the promise in the lush greenness of his little field. His paddy had thrown up more than thirty tillers each paddy hill as against nine or ten of their own traditional varieties. The abundant flowering of the new paddy variety plants and that too as early as in the month of August, brought to them a twinge of regret for having missed such an opportunity. As they watched the progress appreciatively, they decided to borrow or buy from him some seeds of the new variety for the next year.

The lesson was perfect. What was more, Mr. Dass was going to reap not only a bumper crop, but he would do so much earlier than they would harvest their-traditional 'Sali' (kharif) paddy. Most of them had already exhausted their stock of rice and were eking out a daily quota to last them until the harvest of their paddy. Since most of the farmers had no surpluses to sell, they had no cash to buy rice from the open market.

However, Mr. Dass was expecting to harvest his paddy crop in early autumn well in time to sow a second crop, while, the others, would still be waiting for their paddy to mature. Secretly they felt jealous as well as sorry.

Mr. Dass, his wife and their four children, spent most of their time sitting near the field, cherishing their hopes and dreaming of prosperity.

The authors is Member, North Eastern Council.

When the crop became ready, it was harvested with much fanfare. The Extesion Officer [EO] along with the Village Level Worker [VLW] and of-course the whole village had assembled to see the results.

However, the drama took an unexpected turn. There was no rice inside the 'bumper' glumes. *"Patan, patan, patan"* (empty), was the verdict. The entire village scoffed at the failure of the experiment. Their earlier jealousy intensified their mirth.

Mr. Dass could not believe it. He was crestfallen. He felt humiliated and cheated. The high hopes and dreams of all these months had been shattered into shame. He and his family had become the laughing stock of the entire village.

That night, no food was cooked in their home. Everyone, including his wife and three children, slept hungry. He had gone to the forest on the pretext of easing himself, and had wept tears of bitterness at his lost hope. He took a decision.

He would expose the folly of the agricultural experts who had deprived him of his rice and brought ridicule upon him.

He remembered that the Chief Minister of the State was visiting the District Headquarters about 16 kilometres away from his village. He carefully filled a gunny-bag with the *'patan'* paddy, borrowed a bicycle from his brother-in-law, and took off to tell his pathetic story.

He could not meet the Chief Minister at the Circuit House, because it was full of senior officers, public leaders and sentries barred his entry. However, he learnt that in the afternoon the Chief Minister would be visiting the lift-irrigation project only five kilometres away and for a meeting with the local farmers. He was surely a farmer and had a real problem.

He bicycled off early, took up a strategic position and patiently awaited the arrival of the Chief Minister.

The long convoy of cars and jeeps arrived about two hours late. He was able to identify the man who was profusely garlanded, to be the VIP. He had seen his photograph in the local newspaper, which the schoolteacher and village headman always read. In the melee that followed the arrival of the VIPs, he succeeded in attracting the Chief Minister's attention. He quickly blurted out his rehearsed outburst. His land holding was very small. He was a poor farmer. He had put his land under new seeds as suggested by the Village Level Worker and, the results had been disastrous. He had lost his entire crop. He produced the bagful of *'patan'* paddy as evidence.

The Chief Minister was kind and sympathetic. He looked round and told the District Collector (DC) standing behind him to look after the interests of the poor man. The DC promptly passed on the directions to the Sadaer Sub-Divisional Officer (SDo) who was standing conveniently nearby. The SDO efficiently wrote down a message on a slip of paper and gave a chit to Mr. Dass, saying, "Come tomorrow, meet so and so, and give him this paper. He will go with you and settle the matter in your favour."

Finally, Mr. Dass received compensation equal to the value of a traditional harvest he would have made from his piece of land, had he not volunteered for the experiment and sown the seeds of the high yielding varieties [HYV] of paddy.

But many more, Dasses, Phukans, Bhuyans, Baruas, Boros, Basumataris, Saikias, Kalitas, Kakotis, Kotokis, Kacharis, Neogs, Brahmas, Bordolois, Lalungs and others, had also volunteered for the experiment and faced similar problems. Not all were so lucky about the compensation.

Based on similar experiences, the results began to pour in from other districts. "The short duration varieties of paddy produce *'Patan'* and are thus unsuitable for Assam conditions". No one troubled to investigate, "What produced *'patan'* and, Why?"

What had really happened was this: The high yielding 'wonder seeds' were creating a 'green revolution' throughout the country under the aegis of the Five Year Plans. Samples had reached all the States, including Assam, for field trials. The States distributed them to the districts. The districts divided them among administrative sub-divisions, and they, in turn, among all the development blocks. The development blocks distributed them through various extension officers, to the VLWs, each of whom had a number of villages under his 'charge'. In their enthusiasm to share and show-off the wonder seeds, they parceled them out into small village demonstration plots, one each in their charge. The tiny demonstration plots came to be dotted all over the State. This was a great example of equality in sharing!

The plants grew beautifully. Full fertilizer support was provided in the mini-kits. The dark green stands of the paddy had tillered profusely in the tiny-experimental plots. These had stood out in healthy contrast and promise, among the traditional fields that surrounded them. They began flowering and forming milk much earlier than the common variety, popularly known as the traditional varieties of Sali paddy, in Assam.

The new high yielding paddy, ripened in about a hundred days. It formed its milk in the glumes

almost two months earlier than the traditional varieties that take, from seed to seed, about 150-165 days to mature, and the traditional varieties of paddy were harvested as late as December to early January. Thereafter, about two million hectares (about twenty lakh) vast paddy lands remained vacant until July-August. However, the harvested paddy stalks, host insects and pests in their stubs. During the long vacancy of the fields, they multiply into hungry new generations waiting, ravenously for the rich rice milk, from the ripening of the next paddy crop.

When the hungry pests and insects had smelt the paddy milk in the trial plots of the new early-maturing varieties, they had converged flying, from all directions hopping, jumping, crawling and creeping, from all directions to the experimental fields. The "*Gandhai Pukh*" (stinkbug) which came flying, led the attack with the little sucking pipe of his proboscis. He and his tribe of invaders from far and wide, sucking milk out of the paddies, and left pink marks to tell the tale. These, happily sucked away the grain leaving behind only tiny pink marks. The little creatures also faced competition from thousands of little birds.

We read much in appreciation of the '*Tokora Sorai*' (the weaver birds) who weave lovely long nests with a number of doors and rooms that are illuminated with glow-worms stuck into the weave. They furnish these rooms with soft comfortable mattresses made of grass fluff and soft feathers. Despite these lovely homes for nesting, they seem to prefer to sleep in the open, perched on nearby trees or electric wires.

When the scent of ripening paddy milk of the early maturing varieties invited them to an early dawn feast, their swarms had descended on the fields 'like dark clouds'. They selected convenient perches on the paddy stalks and with their little beaks deftly cracked the paddy pods open, and, drank the milk and they left the glumes in place, refilled with empty air, so that outwardly everything appeared normal. By the time people arrived and raised alarms to scare them away, they themselves were ready to leave for a satiated rest.

They were followed by the waves of '*Bota Sorai*', another type of small bird. These swarmed into the experimental fields a few days later because they relish doughy or semi-solid rice. They too could do a lot of damage by breaking the rice paddy-pods with their beaks. However, this time they went away disappointed because the glumes had already been sucked empty, firstly by the '*Gandhai Pukh*' [Stinkbug] and then by the '*Tokora Sorai*'.

The small experimental fields of early-maturing paddy thus received a concentrated onslaught from all these swarms. They came, mobilising in strength from long distances, because none of the other fields in their purview had yet begun to exude the inviting aroma of the ripening paddy. They all converged on to the few isolated experimental plots instead of distributing themselves, as in normal years, over the miles and miles of traditional paddy fields.

If larger areas were put under the experiment, it would have been possible to protect them, to some extent.

However, the real villains who shut the doors to the 'green revolution' and prosperity and who went undetected and remained free, were not the insects and the birds who through the bounty of Nature, and on human folly, relished their field day among tearly maturing experimenters. The grand folly that foiled all the plans and the efforts of so many progressive farmers who had trusted, and toiled for a new found hope, was due to the organisers who had begun so well, way back in those fateful mid-sixties.

Erroneously, they had concluded, merely by compiling the information communicated to them, that the new varieties were, by themselves, responsible for producing *'patans'* [empty glumes] and, therefore, unsuitable for Assam.

This, therefore, slammed the doors shut on the 'green revolution' and the economic prosperity of the entire North Eastern Region. The price was heavy indeed, and had paid by the State, its people and the country as a whole. The loss ran into millions of tonnes of additional food grains each year that, were never produced for more the four decades, as well as the wide-ranging consequences, including of agricultural and industrial shortages, and over all growth of the States that continue to remain tardy . No wonder, Assam has slid backwards and into greater and greater dependence, even for its daily plate of rice, from sources far away. Financial burdens on transport subsidies mounted.

The harvest of economic progress and in food security continued to be consumed, ruthlessly by the utter lack of vision in decision-making, rather than by the birds, pests and insects that ravaged the ripening grains of the farmers like Mr. Dass.

Now, how to regain the confidence of the people, because of the *'patan'*, 'if' and 'when' it is tried again?

When reason has seen the reality and shown the path to progress, let us hear its voice - Even now!

Must we wait for a chorus! ❑

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J&K WINDOW

FLORICULTURE IN KASHMIR

Emphasizing on improving quality of fruits for increasing market share, the Jammu & Kashmir government has taken a big initiative including setting up of new Fruit *Mandies* and cold storage facilities, to promote horticulture industry in the state.

The State has vast potential in horticulture sector, and there is need to improve the quality of fruits to tap it fully and increase marketability.

The state is producing 22.50 MT fruit annually and this year the State's fruit export is expected to touch 4000 MTs. For the first time fruits of the State have been taken to *Mandies* of Himachal Pradesh.

Apart from establishing new fruit *mandies*, the government has renovated existing ones to facilitate the trade of fruit growers. About Rs 6 crores is being spent on introducing drip irrigation system while Rs 2 crore have been released during current fiscal. The Horticulture Department has achieved a lot during the past 3 years, as the floriculture sector is emerging as a new profitable commercial activity in the State. The Government is providing adequate subsidy on purchase of equipment and machinery to the growers to apply new technologies. ❑

HYDROELECTRIC PROJECTS IN KASHMIR

Shifting its focus from mega ventures, the Jammu and Kashmir government will soon be constructing 10 small hydroelectric projects to generate and supply power faster to despairing consumers, without much transmission and distribution losses. The projects will be built on the tributaries of major rivers like the Chenab, Jhelum and the Ravi. They range from a capacity of 6 MW to 45 MW, with a total strength of 172 MW and they will tap all the necessary power generating resources in Jammu and Kashmir. These projects are located in Ramban, Reasi, Kathua and Baramulla districts.

A project on the Bichlari nullah, a tributary of the Chenab in Ramban of Jammu region and it would have the capacity to generate 45 MW of electricity. Another one on a tributary of the same river would be set up at Ansl in Reasi, with 40 MW capacity. The smallest of these projects, with 6 MW capacity, will be set up on the Hapthkhai nullah in Boniyar town of Baramulla district of north Kashmir. Other projects with varying capacities of 7 MW to 27 MW would be set up on tributaries and nullahs in Poonch, Ganderbal and Baramulla districts.

The state has an estimated capacity of generating 18,000 MW of power from its rivers, but it has not been able to generate more than one tenth of this. It gets only 12 percent of power from the hydro projects constructed by the National Hydroelectric Power Corporation Limited (NHPC). The state owns only one mega project at Baglihar of 450 MW capacity while the rest like Salal, Dul Hasti and Uri are owned by NHPC. ❑

Road to Wacha: The easiest route to China via Arunachal Pradesh

Mrinal Talukdar

People on both sides of the border will benefit as and when the trade route is fully opened

INDIA'S EASIEST land access to China and that too not over icy mountainous Himalaya, is slowly becoming a reality as the Indian army and the Chinese army are cozying up at Wacha in the Indo-China border in Arunachal Pradesh, which is the smoothest gateway to China from India.

When Brigadier Manjeet Mehta a couple of years back, welcomed the Chinese delegation leader Senior Colonel Yang Ping Jiang to a small house in Wacha, history was made and the dream of driving into China is slowly turning into reality.

This is the sleepy road, which can open up the North East India to China and beyond. Most importantly it does not need any major infrastructure, because the road from both sides very well exists and barely used.

It may be too early to dream of an immigration point and then drive in to the most beautiful region of China through a beautiful highway, but the fact is that it is not an impossibility as the geographical terrain is so surprisingly easy and smooth with both sides having good roads all the way up to the border.

Unlike all other existing cross border facilities like Nathula in Sikkim or Bumla in Tawang, Wacha is not difficult to reach and is relatively at a very low height. It is situated in the North Eastern most tip of India and obviously the great Himalayan range is at its lowest height at that point.

One can drive from Tinsukia, the broad gauge railway head with a daily Rajdhani connection to New Delhi, to Wacha in a single day crossing around 300 kilometres along the Lohit valley.

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"On the occasion of the third formal Border Personnel Meeting at Wacha along the traditional Rima - Tezu route, our border troops of Lohit Valley Sector, invited their Chinese counterparts to further the bilateral relations, mutual trust and cooperation at Wacha, in the Anjaw district of Arunachal Pradesh. The Chinese officers and soldiers attired in full regalia marched almost three kilometres from Damai on the Chinese side to Wacha across the Line of Actual Control (LAC) to honour the invitation extended by the Indian counterparts to foster the established peace and tranquility amongst the two great ancient Nations" said Brigadier Manjeet Mehta.

In fact, although the Chinese are quite secretive about their area, but it is a well known fact that they have very good all weather roads from Rima to the interiors of China and most of which are four lane. The route has been a traditional one and till 1960 it was quite active using the Lohit river as mode of transport.

As the Indo-China cooperation increases despite the itching over Tibet and Arunachal Pradesh, the Border Personnel Meetings (BPMs) along the entire Indo - China border stretching across thousands of kilometeres are steadily increasing and fast becoming a regular feature,

From the archives
The area during 1962 Indo-China war

The Line of Communications was tenuous in the extreme. Tezu in the Brahmaputra Valley was 70-km from the railhead in Assam, and featured an airfield of sorts. The road from the railhead to Tezu was unable to take any significant traffic, so Tezu was maintained by air.

From Tezu to Walong was a 160-km, 14-day foot-track journey. Though Walong had an airstrip, operations could take place only between daybreak and 1000 hours, after which high winds made the airstrip unusable; worse, only the Canadian De Havilland Otter STOL, with a payload of 6 men or about half-ton cargo, could use the airstrip.

Two tracks, one on each side of the Lohit, ran from Walong to Kibithu. The western track was accessible with difficulty to porters carrying heavy back-pack loads, but was inaccessible to pack animals. As an approximation, one mule can carry as much as 5 porters. This track passed over a series of steep climbs, which formed the "Ladders".

The eastern track, was not even portable, and was used by locals to travel between 4 hamlets on the east bank of the river. This explains why no troops were located to the east of the Lohit, and why all action took place to the west of the River.

The track between Walong and Kibithu ran about 18-20 km, possibly less; the road now available runs 25 km. From Kibithu to Dichang today is 5 km by road, and was perhaps 3 km along the 1962 track.

Ironically, the west bank track seems to have been constructed on the initiative of a Chinese general. Around the turn of the century he used local forced labour to make the "road" between Rima, the Tibetan village across the McMahon Line, which represented the terminus of the Chinese road head. After reaching Walong he was forced to turn back, abandoning the project. The unofficial 1962 War history does not explain what stopped the general. We may guess, however, that the completely desolate, heavily forested terrain was the cause.

At that time there could hardly have been more than 1000 inhabitants of the entire region between Rima and Walong – if that; and after Walong was more desolation. For China there would have existed no economic, administrative, or military reason to cross the McMahon Line. Some trade undoubtedly took place between Rima and Tezu: the traders of yore were extraordinarily hardy souls, but it could not have been of any significance.

especially in the areas of Chushul, Nathula, Bumla and now near Wacha, to promote mutual faith and understanding. "These interactions between the Indian and Chinese Armies started initially with Flag Meetings and later transformed into BPMs and have since become a regular event. The recently concluded BPM near Wacha is seen as a giant step forward towards contributing significantly in further cementing the bonds of mutual trust, confidence and friendship between the two countries" the Brigadier said.

The BPM near Wacha is being seen as an important step in the growing Indo - Chinese relations. Wacha is located on the traditional age-old trade route between the two nations that follows the Lohit River. This route was in use for mutual trade by local traders on both sides till as late as 1960. This BPM is a positive step towards affirming the mutual commitment of strengthening relations between the two nations.

The occasion was also utilized for social interaction amongst all ranks of both the Armies who attended the BPM. The Chinese delegation was treated to a large spread of traditional Indian delicacies. The event culminated with an exchange of gifts and joint photo session between the delegation members. Finally, the delegates parted with a commitment towards stronger bilateral ties.

In fact the first formal Border Personnel meeting (BPM), along the traditional Rima – Tezu trade route was held on November 2006, at Wacha, in Kibithu sector on the Indian side at Line of Actual Control. The second meeting was held on September 2008, across the Line of Actual Control (LAC), on the Chinese side.

There is no proper road only in the last three kilometres over the LAC. But that apart, both sides have very good roads. In fact on the Indian side, the road from Tinuskia to Walong is all weather roads free from snow as it does not reach great height. The last 30 kilometres from Walong to Kibithu is a little steep but that is nothing in comparison to the great height and passes of Bumla or Nathula.

Kibithu could turn into a major international trading hub due to its natural resources and potential for trade. This BPM is a positive step towards affirming the mutual commitment of strengthening relations in the ongoing 'Year of Friendship' between the two Nations.

People on both sides of the border will benefit as and when the trade route is fully opened. Anjaw with its tremendous trade potential can trade its horticultural, agricultural, aromatic and medicinal products in exchange for Chinese consumer and electronic goods. Unlike all other big projects and dream, here lies a sleepy road, barely used except by military, which can open up the North East India to the east. ❑

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Bhupen Hazarika : the Man, the Legacy

Parag Sarma

AS THE November mist settles down on the funeral pyre of Dr. Bhupen Hazarika and the unprecedented public participation and frenzied emotions that Assam witnessed over his funeral for a period of seventy two hours gives away to a pensive rumination, one is bound to reflect on the work and life of a man that had infused every strain of Assam's cultural being for more than four decades. He was not an easy man to understand. His public face that ranged from being an avowed left wing humanitarian for most part of his life to a right wing assert or of 'India Shining' in the twilight of his career might have left many perplexed. His apparent surrender to the forces of mainstream Bollywood from the days of his IPTA theatre and experimental cinema might have bemused many. Yet contradictions in creative souls are a universal phenomenon. In Bhupen Hazarika,

1926—2011

that can be accommodated if we realise that he was a peoples' artist and strived to understand the cultural, social and political dynamics that moved the people. He is not one to enforce ideological paradigms from above, a theoretical ideologue that would decide what is best for the people from the confines of an ivory tower; but one who would inform his political and cultural ideology from the grassroots and try to understand why people behave and believe in the way they do.

He was fortunate in his childhood to have grown up in Tezpur at a time when the three colossus of Assam's creative world was giving shape to her twentieth century cultural destiny: the firebrand Marxist revolutionary, poet, lyricist, and singer Bishnu Prasad Rava, the eminent playwright, stage and film actor Phani Sarma and the musician, lyricist and the man who gave Assam her cinema, Jyotiprasad Agarwalla. They took him under their tutelage and infused in him the robust humanism and love for the people, the desire to bridge communities, and to wash away the vestiges of a colonial past that had entrapped the people of the North East in a time warp. No wonder that he sang Assam and the region to the nation celebrating the rivers and mountains, the dances and the dresses, the festivals and the food. Yet he knew that the confines of the region could not fulfil his agitated creativity or his wish to

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represent the people and place he was so fond of. Born to a father who moved all over Assam due to his professional commitments, Bhupen Hazarika imbibed the wanderlust to experience the world in all its hues, to soak and bask in the cultures of distant lands, and carry back to his people the message of universal brotherhood. Thus, Paul Robsons's 'We are in the same boat brothers' became an anthem for him that resonated all over India in his voice, and the famous song 'hang down your head Tom Dooley' mutated into the famous '*Manuh Manuhar Babe*', which he later sang in many other Indian languages. Triumph of the repressed and downtrodden always excited him and his famous eulogy to Bangladesh on its birth is still fresh for those who hear it for the first time. His foray into Bengal and later Mumbai established him in the Indian mainstream and he mediated the folk heritage of his land with the contemporary demands of mass culture. Educated in Assam, Kashi and New York, he straddles many cultures and many oeuvres of a film maker, lyricist, poet, litterateur, political activist, legislator and a cultural bureaucrat.

As the platitudes wane and popular outpouring of grief gives way to a more deep rooted void at the intangibility of his existence, one need to take stock of what his legacy means to the country and Assam. He sang of a rainbow country of mutual trust between different ethnic groups, an accommodation and celebration of difference, and a democracy of perspective that was inclusive. His brand of the revolutionary was not the gun toting insurgent but the guitar wielding bard that sought to alleviate the condition of the masses through an awakening in them of their political and social rights. His social activism was to form '*sur bahinis'* to raise money and give succour to those afflicted by floods and riots. One can only hope that the mass participation that one witnessed in the aftermath of his death will rekindle in the smithy of their hearts the spirit for which Bhupen Hazarika lived and sang, and ignite in them the dormant humanity that will light the beautiful fires that melt the muzzle of the guns and neutralise the bombs. Assam, North East and India need a revolution. For even peace is a revolution. Let Dr. Bhupen Hazarika be its new prophet. ❑

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- Born in the year 1926, the 85-year-old Dadasaheb Phalke Award winner was a child prodigy in every sense. He recorded his first song at a tender age of 12. The song 'Biswa Bijoy No Jowan' of just the second Assamese film 'Indramalati' was the start of a life long association.
- A multifaceted genius, Hazarika was everything from a singer to a director but his heart remained that of a poet who breathes freely in the indigenous culture of Assam.
- The balladeer who composed his own lyrics and music last lent his voice to the film "Gandhi To Hitler", where he sang Mahatma Gandhi's favourite bhajan 'Vaishnav jan'.
- His directorial debut 'Era Batar Sur' came in the year 1956 and there was no looking back for Hazarika after it.
- He was the man behind the inception of colour films in Arunachal Pradesh. 'Mera Dharam Meri Maa' (1977) gave impetus to filmmakers with rich cultural heritage to come up with path breaking projects.
- Hindi film 'Ek Pal' provided Hazarika the much awaited chance and he lived up to the expectations by helping the film win several acclaimed awards.
- The deep baritone with a Midas touch ruled hearts in extremely popular TV serial 'Lohit Kinare', directed by Kalpana Lajmi.
- The music of 'Rudaali' not only won awards but also established Hazarika as someone who can master class and mass with the same tune.
- The voice from the shores of the river Brahmaputra benefited Bengali film and music industry too.
- Indian cinemas's highest honour Dadasaheb Phalke Award was conferred upon him in the year 1992.
- Winner of many National Awards, Hazarika worked in close co-ordination with the government and served on several important committees including the Censor Board and the National Film Development Corporation.

Micro Credit Changing Lives of Women

Mamata Mishra

Easy process of accessing micro credit in different cycles has infused much needed confidence among the lower income groups to kick start their own ventures

SUSTAINABLE SOCIAL change requires strenuous efforts by those who are determined to improve the prevalent societal norms and are ready to accept the consequences of their decision.

While efforts have been made at various levels for poverty alleviation and improving the living standard of the people of lower income groups, the foremost thing required is the will among those people to change their status in the society.

It was out of the sheer need that Monowara Begum of South Saraniya had to gather courage and step out of her house to work in a *papad* industry, after her husband had lost his job. At a time when her family of four was managing somehow with Monowara's income, the owner of the *papad* industry decided to sell the unit.

Already worried about the education of her two daughters, Monowara had to take a decision between quitting the work and getting lost in the multitude of desperately poor, or take the challenge to bail out the family from the pangs of poverty. When it came, the decision was affirmative.

With the meagre savings of a lifetime, and a little help from well wishers, she and her husband purchased the *papad* unit.

To meet the requirement of working capital, Monowara approached Nightingale Charitable Society, a non-government micro-finance facilitator, for loan. Through Nightingale, the North East Development Finance Corporation Ltd. (NEDFi), also provided financial support of two lakh rupees to Monowara. Now, her unit has modern mixing machine, packaging and weighting machines, which have helped boost production.

'Earlier, I was worried about my own livelihood and the needs of my children. Today, I have a team of 12 workers. Sometimes, when I

The author is with the Assam Tribune, Guwahati.

see their children, I feel contented that I took the right decision three years back," says Monowara.

At a time when even the government is encouraging self employment, micro finance schemes have started gaining ground in the State. Easy process of accessing micro credit in different cycles has infused much needed confidence among the lower income groups to kick start their own ventures.

A pioneering crusader of this social change is Nightingale Charitable Society, Chandmari, Guwahati, which has offered financial service to poor people of Assam under income generation activities from the year 2004. From a humble beginning of Rs 7.19 lakh in the year 2004-05, the fund raised by the society from financial institutions and banks have swelled to Rs 1,478.72 lakh during the year 2010-11.

The society has a mission to economically empower the low income segment, especially women, by providing access to need based financial services in a cost effective manner, on a sustainable basis.

Till recently, going for a loan was an indicator of extreme financial crunch like critical illness, or urgency like wedding, funeral or childbirth. A loan, in any case, was considered as a last resort to cope with financial constraints.

And, for women, particularly those of lower income group families, a loan and its repayment was beyond imagination.

However, the trend has altered with the changing societal framework and the growing needs of people.

In 2004, the Nightingale Charitable Society started micro finance services with Rs 2.5 lakh from NEDFi and Rs 1.5 lakh from the Rastriya Grameen Vikash Nidhi (RGVN). At present, it has a business transaction worth eight crore rupees with the NEDFi and around six lakh rupees with the RGVN.

Other funders of the society include The Assam Co-operative Apex bank, Assam Financial Corporation, Maanaveeya Holdings and Investment (P) Ltd, Assam Grameen Vikash Bank, Small Industries Development Bank of India, Indian Bank and IFMR, Chennai.

Thanks to the growing awareness about micro finance among people, the client base of the society has increased to 16,000 by the end of 2010-11. The disbursement target has been fixed at Rs 27 crore in the current financial year, which is more than double of last year's target of Rs 13 crore.

The outstanding performance and dedication of the Society in respect of micro finance activities was acknowledged by NEDFi in 2010, and the Society was given the NEDFi Entrepreneurial Excellence Award 2010.

"At present we are under the Societies Act, but very soon our organization would be directly regulated by the Reserve Bank of India. From a registered society, our organization has been upgraded to a non-banking financial company," says Mantu Nath Sarma, the Chief Executive Officer of the Society.

"Since the time we have started the micro credit system, we can boast of 100 percent loan recovery from our clients. Similarly, our repayment rate to the funding agencies is also 100 percent. We are the first to start micro finance in Guwahati," says Sarma.

The loan is given to a five-member group of women under the age group of 18 to 55 years, living in proximity, and each member earning between Rs 2,000 to Rs 5,000 per month. In the first cycle, each individual member of the group can get up to Rs 10,000 and in the second cycle, the loan up to Rs 15,000 is given to the individual members. In the third cycle, the group members can get the loan up to Rs 20,000.

Karabi Rajbongshi of Bhootnath, Guwahati started soft toy making as a hobby but soon her toys became popular in the nearby localities.

"Considering the high cost of the raw materials in Guwahati, it was impossible to think about starting a business. But when we came to know about micro finance by Nightingale, we planned to take the loan and bring raw materials from Delhi,"says Karabi.

With the help of her husband Shankar Das, Karabi Rajbongshi has started the business of soft toys and now she supplies the same in the shops of Guwahati. She also sells the toys herself during Durga Puja. In her words "this year, we sold toys worth Rs 17,000 during Puja days. My husband also supplies the toys in other districts during special occasions like *Raas*, Christmas, New Year among others. Now, both of us are completely into this business."

She readily accepts that the family is in a much better position than what it used to be four years back. "Now, we can pay the school and tuition fees of our three daughters. We are also thinking about constructing a house.

Karabi has also employed six workers to help her in toy making. The couple is now planning to expand their business in the markets of Shillong.

There are a number of other women, who have taken the help of micro finance to fight poverty and become self reliant.

"We make the loan taking process very simple for our clients. Our credit officers visit the houses of the prospective clients and conduct Compulsory Group Training in which every minute detail about the loan is thoroughly explained to them for three days. After the loan application is filled, the branch manager interviews the entire group. It is only after his approval that we provide the loan. Since we don't allow thumb impression, a client has to be literate enough to write her name," Sarma added.

The society that started with only one salaried staff and some volunteers in the year 1997 has 40 staff members in its seven branches in the State. The branches are located in Beltola, Chandmari, Maligaon, Kalapahar, Mangaldoi, Nagaon and Howly. It is also planning to expand its activities through five more branches in Morigaon, Barpeta Road, Bongaigaon, Bijni and Abhayapuri, to be established in the current financial year.

In 2010, the Society imparted training on micro finance to 162 bank officers from different commercial banks. Apart from this, the training on micro finance activities was also imparted to officials deputed by a Manipur-based NGO.

All the clients of the society are insured. In case of death, the family of the clients would not have to pay the debt. Caring for the health related needs of the clients, the society is considering the proposal of making health insurance compulsory for all its clients. ❑

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New Farm Technology in Mizoram

The hilly State of Mizoram is expecting a significant increase in rice production this year, thanks to the new farming technology– system of rice intensification.

The agriculture department has introduced the improved farming system in different low-lying areas of Mizoram. It has been experienced that rice produce under SRI is double that of conventional farming system.

With the new method the farmers produced approximately 2.5 to 3.0 metric tonnes of rice per hectare of land compared to 1.75 metric tonnes per hectare under conventional method.

From next season the department would provide the farmers with pesticides and fertilizers. Slaked lime and fertilizers for the rabi season.

Owing to the government's boost on mechanisation of farming, officials in state agriculture department said the area of jhum cultivation in Mizoram decreased by 36 percent and that of wet rice cultivation increased by 28.4 percent during last year.

While the area of shifting cultivation in 2010-2011 has decreased from 44,947 hectares to 28,562, the area of wet rice cultivation has increased from 9,446 hectares to 12,130 hectares.

At present, Mizoram produces only 25 per cent of the total rice consumption. Mizoram produces only 44,950 metric tonnes of rice, against the total consumption of 1,80,000 metric tonnes. As the government declared bumper rice harvest year, more farmers took up wet rice cultivation.

The department targets to produce 52,000 MT of rice this year. It aims to increase rice produce per hectare of land in WRC from 1.6 MT to 2.5 MT and from 0.9 MT to 1.2 MT in jhum areas.

Economic Editors' Conference-2011

INDIA'S GDP grew by 9.3 percent during 2007-08. Due to the global financial crisis the growth rate in 2008-09 had slowed down to 6.8 percent. However, India was among the earliest nations to recover from the crisis. The growth rate rose to 8.0 percent in 2009-10 and 8.5 percent in 2010-11. The Indian economy grew by 7.7 percent during April-June 2011. Agriculture, industry and services registered growth rates of 3.9, 5.1 and 10 percent, respectively, in the first quarter.

This was observed by the Finance Minister Shri Pranab Mukherjee while inaugurating the Economic Editors' Conference 2011. Indicating the pressure on Government to meet its fiscal deficit goal, he said, "Let me not hide the fact that I have been disappointed by our growth performance over the last few months. It is evident that India's growth rate in 2011-12 will be less than what we were expecting in February when I presented the Budget. In the last few months, a number of factors, both international and domestic, have impacted our economy. The international crude oil prices have continued to remain at or above US $ 105 per barrel. When we were working on the Budget earlier in the year, the price of crude was roughly between 90 and 95 dollars. This sharp subsequent rise has placed an unexpected burden on us. Other commodity prices have seen volatile changes, as also the capital flows. The monetary policy tightening and the increase in the interest rates along with the global uncertainty have not helped the industry to go in for fresh investments."

"Most observers are expecting India's growth to go down to below 8 percent. This is disappointing but at the same time we must not lose perspective of the global situation. There is slowdown all over the world. In the second quarter of this calendar year (2011), the US economy grew by 1.6 percent and the European Union economy grew by 1.7 percent. If you look at the growth rate in the first and second quarters of this calendar year, among the G20 countries there is only one nation, Australia, which had faster growth rate in the second quarter, when it achieved a growth rate of 1.4 percent. Indonesia had the same growth rate in both quarters. All other nations had slower growth in the second quarter."

The Finance Minister underlined that number of policy measures are being taken and the long-run indicators look robust. Net FDI this year has been double that of last year for the corresponding period. In 2010-11 from April to August India received 6.5 billion dollars of FDI. This year over the corresponding period the country received 16.8 billion dollars. Credit off take is also showing a healthy trend. Last year from April to September Bank credit grew by 19.2 percent. This year the growth over the corresponding period was 19.5 percent. Revenue collections so far have kept pace with the expectations and there could be potential upside. Services have done well and agriculture is expected to grow at 3 percent. Instead of mailing a formal forecast of the growth this year, he asked the editors and correspondents to wait for the Mid-Year Review which will be presented to Parliament in early December.

On the issue of black money the finance minister said that due to sustained efforts in the last two years, both domestically as well as internationally, the Government has been successful in creating an environment where a regular flow of banking information has started.

Expressing anguish over the uncontained prices of essential items he said that the inflation has remained sticky around 9 percent during the first half of the current financial year. The inflationary pressure in recent times have emanated from multiple sources, the most important being the global rise in commodity prices and liquidity enhancing policies adopted by central banks in industrialized nations. There

were also some seasonal factors that created pressure on prices.

To contain this inflationary pressure, monetary policy has been tightened by RBI to contain inflation and anchor inflationary expectations since March 2010 in a series of steps. The policy repo rate has been raised cumulatively by 325 basis points since then. The steady rise in policy rates was reflected in borrowing as well as lending rates with a lag. Though reserve money growth evinced a deceleration, broad money growth remained above the indicative trajectory in the current fiscal. Credit growth, which had accelerated in 2010-11, moderated in the first quarter of 2011-12 on a year basis. Non-food credit growth remained close to the indicative trajectory of RBI.

Agriculture and Food Processing Industries Minister, Shri Sharad Pawar expressed the hope that with record production in kharif and rabi seasons this year, the food production will exceed the target in 2011-12.

The Minister also stated that strategies for rejuvenating agriculture sector have been working well and the targeted 4 percent growth in agriculture sector would be achieved.

Addressing the Economic Editors' Conference, the Minister asserted that food grain production has reached a record level of 241.6 million tonne in 2010-11, having also achieved highest ever production of wheat, pulses, oilseeds and cotton. Overall farm output has also achieved an impressive growth rate of 7.5 percent during the last quarter of 2010-11 thus helping Agriculture GDP to register a growth of 6.6 percent during the year. This also makes average growth rate in current plan to be 3.2 percent which could be achieved under some of the worst climate conditions like be drought, un-seasonal rains, flood, frost etc. in recent past.

The Agriculture Minister said that the results of rejuvenating agriculture sector are encouraging but there are challenges ahead. Demand of food grain will grow rapidly in next few decades not only due to growing population but also due to rise in per capita income and various governmental interventions to ensure food and nutritional security to less advantaged people. He said India has to produce more for ensuring food and nutritional security of the nation. But, this will be achieved with more competitive demand on land and water, progressive fragmentation of land holdings, degrading natural resource base and emerging concerns of climate change.

He said, "Agriculture Credit plays an important role in improving agricultural production, productivity and mitigating both climatic and non-climatic risks. Our concerted effort has seen surpassing credit flow target in 2010-11 by about 19 percent. We are hopeful to surpass target in this year too. Similarly, price signals are an extremely effective tool for increasing agricultural production and productivity. Government has been upwardly revising MSP of major crops such as paddy, wheat and pulses at regular interval for incentivizing farmers to produce more."

Addressing the conference Shri Kapil Sibal, the Minister of Communications and Information Technology said that mobile phones would be repositioned as an instrument of empowerment. This would combine communication with proof of identity, fully secure financial and other transaction capability and multi-lingual services. The Minister also said that demands for ICTE products and services would be leveraged to foster innovation and encourage R&D through academic institutions and industry. He also emphasized that it is envisioned to transform India into a global hub for electronics system design and manufacturing (ESDM).

Shri S. Jaipal Reddy, Minister of Petroleum & Natural Gas said that crude oil production in the country is expected to reach 38.19 Millions Metric Tonne (MMT) in 2011-12. This mainly comes from Barmer, Rajasthan and Krishna Godavari Basin that contributed to over 6 MMT. The production of natural gas (including CBM) for 2011-12 is projected at 51.68 Billion Cubic Meter (BCM). Efforts are being made by ONGC, OIL and Private/ Joint Venture companies to further increase the crude oil and natural gas production during the coming years.

Underlining that India is now on World oil and gas map, Shri Reddy stated that the country has balance recoverable reserves of oil+oil equivalent gas (O+OEG) of about 2041 Million tonnes. He further informed that, under the eight rounds of New Exploration Licensing Policy (NELP), Production Sharing Contracts have been signed for 235 blocks and an investment of US $ 15.88 billion has been made by Indian and foreign companies. Shri Reddy said that exploration blocks offered under NELP-IX would be awarded shortly.

Shri Reddy also stressed on the measures taken by the government to provide fuels to common man at affordable prices and the need to maintain health of Oil Marketing Companies (OMCs).

Speaking about supplies of petroleum products to far-flung areas, Petroleum Minister informed that to meet the increased demand of LPG in the North-East region, industry is augmenting the bottling capacities from the present level of 304 thousand metric tonnes per annum (TMTPA) to about 400 TMTPA. In J&K also bottling capacities are being augmented from current 125 TMTPA to 251 TMTPA to meet the growing LPG demand of the region. He added that to enhance the winter stocking in Leh region, the tankages are being augmented from 1500 MT to 3300 MT. Furthermore, at Leh, bottling manual unit filling machines are being replaced with Carousel to improve filling rate, he added.

At a time when India Inc. is saddled with the twin problem of high inflation and low industrial growth, Prime Minister's Economic Advisory Council (PMEAC) Chairman C. Rangarajan pitched for rollback of the excise duty stimulus that was provided to the industry to combat the slowdown in the wake of the global meltdown in 2008.

Dr. Rangarajan made out a case for urgent rationalization of subsidies along with roll-back of excise duties to the pre-crisis levels if the budgeted fiscal deficit target for 2011-12 is to be met. "Adjustment in subsidies will have to be done as early as possible. Otherwise, we will not be in a position to contain [the] fiscal deficit", he said.

As things stands, Dr. Rangarajan maintained that it would be a herculean task for the government to retain the fiscal deficit at 4.6 percent of the GDP (gross domestic product) as estimated in the budget for 2011-12, a point that was highlighted by Finance Minister Pranab Mukherjee himself. "It could be slightly higher than 4.6 percent. I think it is very difficult to talk about numbers. It could exceed by a small margin", Dr. Rangarajan said.

In this regard, the PMEAC Chairman also stressed the need for ending the "accommodatory" fiscal policy measures by raising the excise duty rates to pre-crisis levels. "I would suggest that we really need to raise the excise rates to the level at which they were prior to the crisis. But during the year, I do not know whether it is possible or wise, because normally, we don't raise excise duty within the year... Going ahead next year [Budget for 2012-13], it is something that one can do", he said. It may be recalled that to help the manufacturing sector in tackling the global crisis impact, the government had provided three fiscal stimulus packages starting from December 2008 which included reduced excise duties among other sops. Accordingly, the three major ad valorem excise rates (14 percent) applicable on non-petroleum products were slashed by four percentage points and later, following economic recovery, the duty cuts were partially rolled back a couple of years later.

In the current uncertain environment, high inflation had led to a squeeze on investment coupled with a fall in demand leading to a slowdown in industrial and overall growth. A former RBI Governor himself, Dr. Rangarajan felt that hiking interest rates was the right step for taming inflation and the repo rate was not at the pre-crisis levels as yet.

"The RBI has been raising rates... in baby steps. Therefore, the present repo rate is still lower than at the pre-crisis level. But with inflation rising, the responsibility of the central bank becomes greater... Inflation is remaining at a level way above what I would call the comfort zone. Therefore, it becomes absolutely essential for the RBI to act", he said.

As for the GDP growth prospects for the current fiscal, Dr. Rangarajan said that owing to various factors, the PMEAC has lowered its projection to close to 8 percent from its July estimate of 8.2 percent. "The PMEAC had projected a growth rate of 8.2 percent in July. There are many factors which will require us to adjust it downwards. I expect that the growth rate in the current year will be close to 8 percent", he said.

The PMEAC chief pointed out that while farm sector growth would be stronger than what was projected earlier, "the industrial growth rate will be lower, while the services sector growth rate will remain more or less the same", as anticipated.

Dr. Rangarajan also cautioned that although the overall savings and investment parameters were "conducive" for 9 percent GDP growth, but "if we try to push economy to grow beyond 9 percent, it will impact the balance of payments (BoP) and create inflationary pressure." ❑

(Compiled by
Rakesh Renu, Senior Editor,
Yojana Hindi)

Real Time Train Information System (RTIS) based on 'SIMRAN'

Advanced Communication and Information Technologies have revolutionalised the ways we do our business. Indian Railways is no exception. Customer expectations have risen. Yesterday's better services are today's basic necessities. Availability of accurate train running information on a click of a button is one such facility public would love to have.

Train information dissemination through 139 in the existing Train Information System over Indian Railway, being dependent on manual collection & feeding of train running information has certain limitations.

To overcome limitations of the existing Train Running Information System, it was decided to develop GPS based train tracking system jointly by RDSO & IIT-Kanpur. The system has been developed and working successfully in number of trains. It has now been decided to open the Real-time Train Information System (RTIS) to public in few trains to begin with effect from 19 October 2011.

RTIS system deployed in the trains will provide the following information to public/passengers:

(i) Train locations.

(ii) Train running positon (i.e. whether train is running on time of if running late and by how much.

(iii) Train location with respect to next stopping station in terms of kms.

This Information will be available on website "http://www.simran.in. People may also get the train running information through SMS by sending a text message "<train number>" to mobile number 09415139139. A typical message received by passenger say for train number 12004, a Shatabdi Exp. train, is as under:-

"On 19/10/2011 10:00, Train 12004 N Delhi - Lucknow Shat. is running at 129 kmph near Bharthana, 126 km from KANPUR CENTRAL. Presently Right on time"

The above message is actual reply received to SMS query.

Ministry of Railways has decided to implement RTIS to track all trains, passenger as well as freight trains. For this, a work has been approved in Railway Budget 2011 at a cost of Rs. 110.0 Cr. The project is likely to be completed by December 2012.