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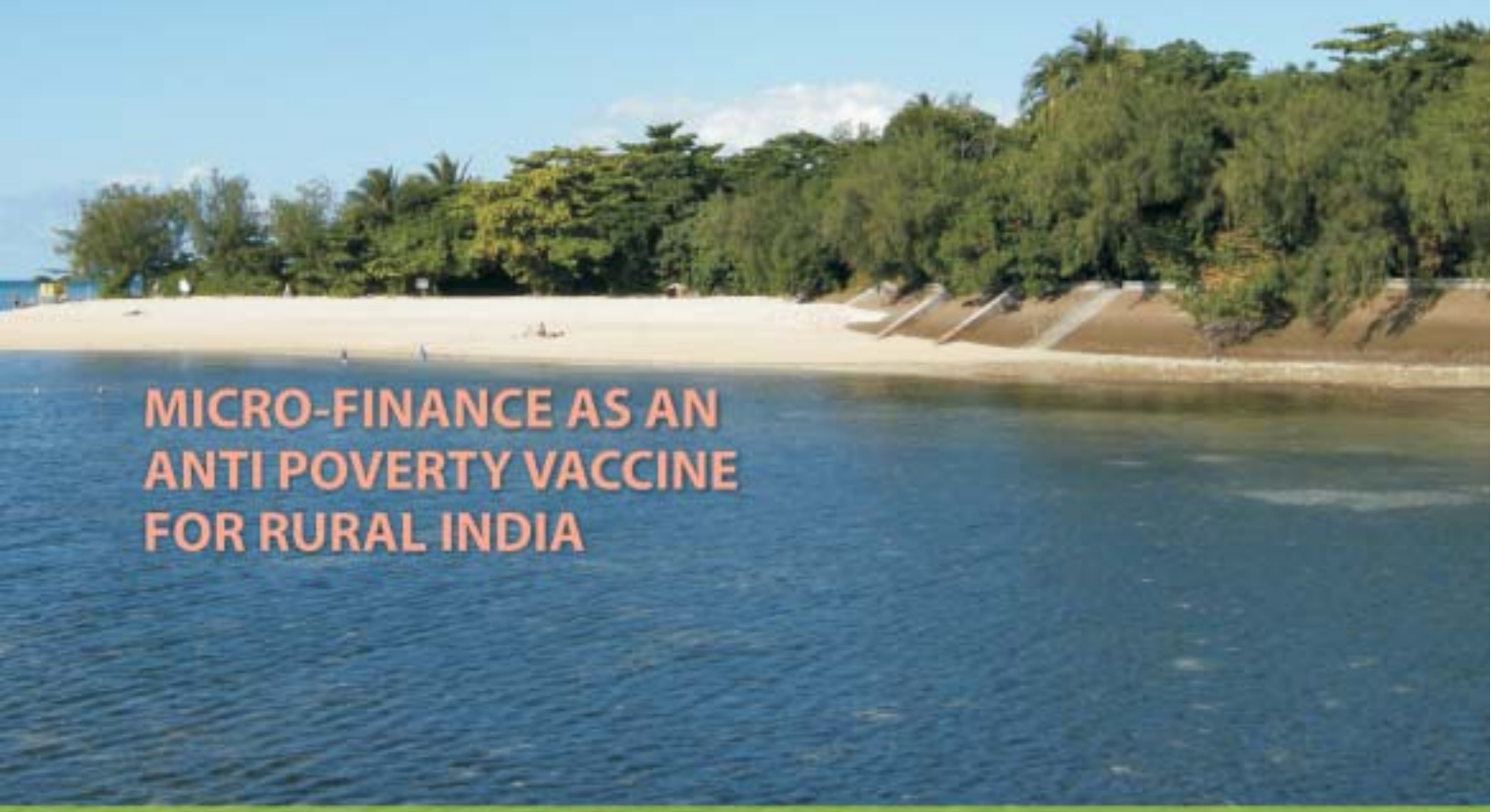
ECOTOURISM
An Emerging Enterprise in India



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EDITORIAL

In this year end edition, through an interesting array of writers and a variety of topics, we wish to cover all issues, concerns and achievements in the agri and allied field that we have seen in the year that went by.

2010 was witness to an increasing integration of agriculture with the new emerging agri-system comprising Rural Business/ Service Hubs (RBHs) at the back end, and agro processing industry and organized retailing at the front end — primarily driven by the corporate sector. The issue primarily was: can the fast scaling up corporate sector in agri-business mainstream the fragmenting smallholders? Read our in-depth analysis in the Emerging Trends story.

A lot has been happening in the seed sector as well. The trend in oil seeds production in India is very volatile, as more than 85 percent of oil seeds cultivation is rain fed. This is not to undermine the oil seeds economy of India and its relevance in the global context. Out of 8 important oil seed crops India ranks 1st in area under groundnut, castor, sesame, linseed and safflower. In this issue we take a peak at the King of all oil seeds – the groundnut!

Also featuring in this issue is an article on Way to Financial Inclusion & Beyond - the author opines that the time is ripe enough to craft appropriate strategies to line up suitable programmes for promoting inclusive growth with a shared understanding amongst different agencies as also simultaneously up – scaling developmental programmes to target these groups who have not able to access adequately financial services from the organized financial system.

All this and much more in this edition of the FA.

We would appreciate your feedback and your contribution to the magazine. Write in to us at fa.afcl@gmail.com.

May the New Year, 2011, bode well for our readers and the country…

A.K. Garg
Editor-in-Chief

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Ecotourism: An Emerging Enterprise in India

By **Naheen Haider Zaidi* and Mohd. Awais****

Today, tourism has become a white collar, environment – friendly industry and one of the largest and fastest growing industries employing the largest number of labour force and a major economic force in the contemporary world. Ecotourism is a form of tourism that is inspired primarily by the natural history and the environment of an area. Ecotourism is a purposeful travel to natural area to understand their natural and cultural history. Care is taken not to alter the integrity of the ecosystem, while producing economic opportunities, that making conservation of natural recourses beneficial to the local people. It has grown as a consequence of the dissatisfaction, which arise on account of the inappropriate implementation of mass tourism. Ecotourism is the management of ecology, in such a way as to obtain maximum pleasure with an eye on conservation needs. The tourists are responsible in the sense that they never try to alter the integrity of ecosystem, and are respectful to the fragile environment. Being an environment friendly activity, ecotourism aims at prompting environmental values and ethics and preserving nature in its uninterrupted form. It thus benefits wildlife and nature by contributing towards ecological integrity. Participation of the local communities ensures economic benefits for them, which in the longer run can ensure a better status and an easier life.

Over the years Tourism has become an integral part of economic, social, psychological and physical development. It is considered as an important source of economy especially in terms of its contribution towards foreign exchange earnings, generation of national income and to promote local employment particularly in remote and backward areas. Tourism is the world's largest industry. It accounts for more than 10 percent of total employment, 11 percent of global GDP, and total tourist trips are predicted to increase to 1.6 billion by 2020. As such, it has a major and increasing impact on both people and nature. According to the report of World Travel and Tourism Council (WTTC), India could generate 25 million additional jobs in Tourism sector by 2010.

India has spectacularly attractive natural and cultural tourist attractions. It has a rich, over 5000-year-old, cultural

heritage and thousands of monuments and archaeological sites for tourists to visit and enjoy. Its vast geographical diversity, rich in culture and heritage, fair and festivals, snow capped mountains, a vast coastline, are monumental attractions that span the entire country. Unlike other developing countries India has also entered the tourism industry since independence. It contributes only 0.3 per cent to World tourism. Considering India's wealth of natural resources and rich cultural heritage, tourism can emerge as an important instrument for economic development and employment generation.

Ecotourism continually evolving as evaluations of successes and failures are incorporated into the knowledge base of worldwide ecotourism practices. Studies by Epler Wood (2002) reveal that "Like all other sustainable tourism, ecotourism is a dynamic field, with new techniques and approaches.....every year". Ecotourism is considered the fastest growing market in the tourism industry. According to the world tourism organization with an annual growth rate of 5 percent worldwide and representing 6 percent of the world gross domestic product, 11.4 percent of all consumer spending-not a market to be taken lightly. This paper is an attempt to highlight the concept and significance, socio economic viability, ecotourism destinations, issues and constraints and suggestive measures to improve ecotourism as an emerging enterprise in Indian perspectives with the following objectives:

Objectives

1) To discuss the concept and significance of ecotourism.
2) To study the socio-economic viability of ecotourism enterprise.
3) To locate the major ecotourism resources of India.
4) To examine issues and constraints in tourism development.
5) To suggest measures for strengthening ecotourism potentiality.

Concept and Significance of Ecotourim

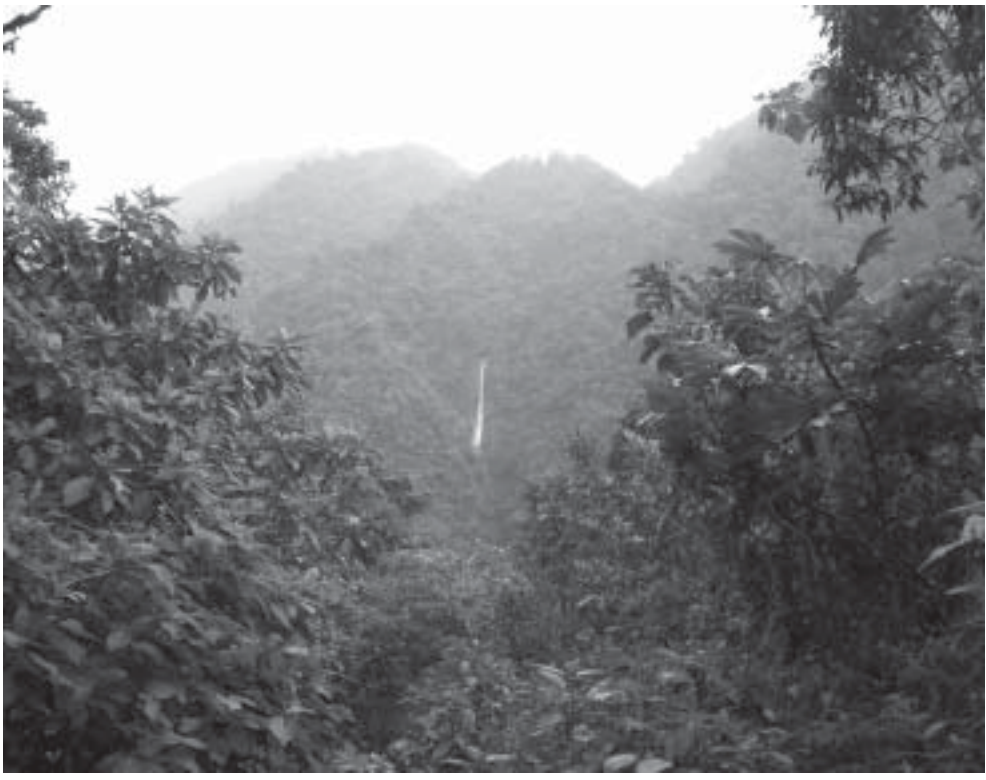
Ecotourism has grown significantly in recent years in India since the country has a diverse geography which led to the development of many tourist destinations. There are various ways in which tourists can enjoy nature in India. Over the years India has emerged as the foremost destination of ecotourism. Ecotourism means making as little environmental impact as possible and helping to sustain the indigenous populace, thereby encouraging the preservation of wildlife and habitats when visiting a place. This is responsible form of tourism and tourism development, which encourages going back to natural products in every aspect of life. It is also the key to sustainable ecological development. Ecotourism has recently come to be regarded as the panacea that enables us to aggressively seek tourism dollars with no obvious damage to ecosystems, since wild resources are not being harvested and there is no apparent associated development. As a concept, ecotourism has gained momentum recently in India, but as a way of life Indians have practiced eco-tourism since times immemorial by their traditional approach to nature and rich cultural heritage.

Ecotourism enterprises often highlight some conservation activities like energy saving gadgets or restricted use of plastics, but tend to ignore the overall impact on the natural and cultural integrity of the destination

Ecotourism in simple words means management of tourism and conservation of nature in a ways so as to maintain in a fine balance between the requirements of tourism and ecology on one hand and the needs of local communities for jobs- new skills, income generating employment and a better status for women on the other.

Ecotourism enterprises often highlight some conservation activities like energy saving gadgets or restricted use of plastics, but tend to ignore the overall impact on the natural and cultural integrity of the destination. There are instances where this has either led to eventual degradation of the marketed tourism products themselves or to social unrest. Distinguishing the components of ecotourism enterprises can clarify the ambiguity in the concept and practice of ecotourism in the country.

Ecotourism has been defined in various ways but debate over the definition of the new term "ecotourism" began in the mid 1980's and still continues to distract the field today. Many scholars insist to move beyond mere definitions and concentrate on action. The international Ecotourism Society (2001) uses the following definition "Ecotourism is responsible travel to natural areas that conserves the environment and improves the welfare of local people". "Tourism to protect natural resources, as a means of economic gain through natural resource preservation". - World Wide Fund for Nature (1997). "Responsible travel to natural areas that conserves the environment and sustains the well-being of local people". – TIES (The International Ecotourism Society).



In many countries, 'home grown' definitions are in vogue, groomed to meet specific needs of the context. Based on various definitions of ecotourism, we can distinguish ecotourism for our context by the following four essential characteristics.

1. Nature based.
2. Eco-cultural sustainability.
3. Conservation Education (for tour operator and the tourist) as major components.
4. Significant involvement of and benefits to local people.
5. Appreciation of nature as the primary motive to participate.

Socio-economic Viablity of Ecotourism Enterprise

In India, tourism is emerging as a key sector in the economy. It is presently India's third largest foreign exchange earner after garments, and gems and jewellery. The most significant feature of the tourism industry is its capacity to generate large-scale employment opportunities, particularly in remote and underdeveloped areas. It offers enormous potential for utilizing natural resources like landscapes, mountains, beaches, rivers etc. for the economic benefit of the population. It also adds value to a multitude of human-made attractions such as monuments, palaces, forts and the unique rural and city environments.

A special feature of the tourism industry is that it employs a large number of women and young people in hotels, airline services, travel agencies, making handcrafts, undertaking cultural activities, and other tourism-related tasks. It is estimated that one new job is created in tourism every 2.4 seconds. Tourism revenue generated can be channeled to the management of protected areas. It can diversify the local economy, particularly in rural areas where agriculture employment may be sporadic. It serves as an effective tool for visitors by creating awareness and helps in instilling in them a degree of concern for their ecosystem.

It provides for the generation of income, wealth and employment, and helps in the sustainable development of remote areas. In India, tourism provides direct employment to 9 million people and indirect employment to another 13 million persons, thus providing a livelihood to 22 million persons. It contributes an estimated 2.4 percent of the gross national product. Its contribution to the economies of states like Rajasthan, Goa and Kerala are significant. Although beginning to be understood for its potential to provide for development in India, tourism still remains a sector that needs serious attention.

The tragedy of mass tourist-spots digging their own graves and the emerging global market for ethnic and unique experience gave rise to enterprises under the banner of ecotourism in various parts of the world. In spite of its increasing importance as a business opportunity and its phenomenal growth within the larger tourism industry, the concept of Ecotourism is not well defined. Used as a tool to harvest consumer's surplus in the context of economic growth and environmental degradation, ecotourism practices vary from wildlife and heritage to health and adventure. Ecotourism is generally perceived as 'high value low volume enterprise' depending on a few interested tourists with high willingness to pay. Developing countries are gradually realizing that ecotourism can be a livelihood tool for rural communities and can also result in sustainable management of natural resources. The educational and cultural attributes attached to ecotourism adds value to the business and also make us think that it may not be the quantity of tourists but the quality that we need to address first. It is also known that in natural environments, tourist satisfaction is inversely related to the user intensity and well-known ecotourism destinations (e.g.

Galapagos Islands) face threat due to over visitation. The challenge lies in reconciling conservation, community benefits and business proposition and these calls for careful planning, implementation, monitoring and regulations.

Ecotourism can be integrated with other sectors of the rural economy, creating mutually supportive linkages and reducing financial leakage away from the area. It can also be coordinated with agriculture, in terms of the use of time and resources and in providing markets for local produce.

Ecotourism Resources of India

The geographical diversity of India is a wealth of ecosystems, which are well protected and well preserved. These ecosystems have become the major ecotourism resource for India. These include biosphere reserves, mangroves, coral reefs, deserts, mountains and forests flora and fauna, seas, lakes and rivers, and caves.

Biosphere Reserves: These are multi-purpose areas protected in order to preserve the genetic diversity and integrity of plants, animals and micro-organisms in reprehensive eco-systems. There are thirteen such reserves in India at present, Nilgiri, Nanda Devi, Nokrek, Great Nicobar, Gulf of Mannar, Manas, Sunderbans, Simlipal, Dibru Daikhova, Dehond Debang, Pachamarahi, Kanchanjanga, and Agasthyamalai.

Mangroves: Mangroves are specialized forest eco-systems in tropical and sub-tropical regions of the world bordering sheltered sea coasts and estuaries. They are reservoirs of a large number of plants and animal species associated together over a long evolutionary period and exhibiting remarkable capacity for salt tolerance. They stabilize shoreline and act as a bulwark against encroachments by the sea. Major mangrove areas are: Northern Andaman and Nicobar Islands, Sunderbans(W.Bengal), Bhitarkanika and Mahanadi Delta (Orissa), Coringa, Godavari Delta and Krishna Estuary (Andhra Pradesh), Pichavaram and Point Calimar (Tamil Nadu), Goa, Gulf of Kutch (Gujrat), Coondapur (Karnataka), Achra/ Ratnagiri (Maharashtra), and Vembanad (Kerala).

Coral Reefs: Coral Reefs are shallow water tropical marine ecosystems, characterized by high biomass production and rich flora and faunal diversity. There are four coral areas identified in India so far: Gulf of Mannar, Andaman and Nicobar Islands, Lakshadweep Islands, and Gulf of Kutch.

Deserts: The great and little deserts in the north-western region of the country are distinct eco-system which has attracted the fascination of tourists from all over the world.

Mountain and Forests: The great Himalayas and other mountain ranges in the country along with their forests, rivers and snow, they have also become great attractions for eco-tourists. The country has an area of about 752 million hectares designated as forests, and of which about 406 million hectares are classified as reserve forests and 215 million hectares as protected forests.

Flora and Fauna: India is very rich in

biotic as well as abiotic resources. It has about 45 000 species of plants. The country also has a great variety of fauna, numbering a little over 65 000 known species, including 1228 bird, 428 reptiles, 372 mammals, 204 amphibians and 2546 fish species. In order to protect and preserve these genetic resources, India has created a number of National Parks and 421 Wildlife Sanctuaries in different parts of the country. Those which have already become popular with tourists are Kaziranga and Manas in Assam; Jim Corbett in Uttar Pradesh; Keoladeo, Ghana,Ranthambore and Sariska in Rajasthan; Kanha and Bandhavgarh in Madhya Pradesh; Bandipour in Karnataka and Similipal in Orissa.

Water Resources: The Arabian Sea, the Indian Ocean and the Bay of Bengal brace the sides of the Indian subcontinent, except for the landlocked northern boundary. The land mass of India is crossed by several rivers and dotted by lakes at many places. These water bodies provide attractive opportunities for water sports.

Issues and Constraints in Tourism Development

It is admitted that tourism has emerged as one of world's largest industries and the fastest growing sector of the economy. But in India, tourism sector is plagued by a number of factors, i.e., Government apathy, poor infrastructure, lack of professionalism low priority accorded to tourism, incidence of robbery, eve teasing, rape, murder, visa problem, poor sanitary conditions and pollution etc. All presents a very dreary picture of the country discouraging people to visit India.

With the efforts of central and state governments various problems such as poverty, unemployment, foreign exchange earnings, international peace, regional imbalances, industrial recession, etc., can be solved to a large extent if the existing tourism resources are fully explored.

In principle, multiple sector activity within local communities should be encouraged. Ecotourism markets are small, seasonal and sensitive to external influences such as political changes or economic instability in the host or generating country. On the other hand, ecotourism

can shield against threats to other sectors. Effects can be negative as well as positive. Inappropriate tourism development and practice can degrade habitats and landscapes, deplete natural resources, and generate waste and pollution. In contrast, responsible tourism can help to generate awareness of and support for conservation and local culture, and create economic opportunities for countries and communities. However, the development of nature based tourism faces can also have considerable constraints including:

- Size of the area – this impacts the optimum tourist carrying capacity of that area.
- Accessibility - by road, railways and airport.
- Underdeveloped tourist facilities – information centers, provision of good accommodation and food.
- Lack of capital and expertise - among the local community is a serious obstacle to their ability to establish tourism businesses. Education and proper training of tourist guides are critical factors.
- Cultural compatibility: between the tourists and the local people.
- Extent of acceptable change in the environment due to influx of tourists.

Factors affecting long term interest of tourism

- Lack of community participation and awareness of benefits
- Lack of involvement of the rural sector
- Lack of concern of sustainability

Barriers that discourage investment

- Absence of legislative support
- Lack of policy integration and co-ordination
- Lack of long term investor friendly policies
- Heavy and multiple taxes restrictive aviation and land policies

Factors that affect competitiveness

- Lack of concern for competitiveness
- Complex visa procedures
- Inadequate facilitation services
- Lack of quality infrastructure
- Lack of emphasis on product quality
- Lack of training at the cutting edge
- Lack of hygiene
- Low utilization of modern marketing and publicity tools

Approach-Related Barriers

- Absence of consensus on role of tourism

- Lack of priority to tourism on account of unappreciated potential
- Relatively low levels of investment
- Lack of interest on the part of state governments – the primary players
- An unprofessional ad-hoc approach.

Suggestions

For any ecotourism venture to be successful some important pre-conditions need to be fulfilled. These are:

- A complete tourism package can be provided through initiation by the local government bodies of activities such as beautification campaigns, sponsorship of special events that tie in with local tourist attractions and participation of all businesses in the area.
- Support and participation of local government; the role of local government is especially important in the following areas; funding for tourism development and promotion, creating and maintenance of infrastructure necessary for tourism, zoning and maintenance of the community so that it looks clean and appealing to tourists and educational support for farmers.
- Most of the rural communities depend on public funds that are very often insufficient to cover all the needs of the rural community; private funds are something that most often can't be reached since local people do not have sufficient incomes by themselves to invest; therefore it is very important to explore for other sources of funding and assistance.
- Information and technical assistance for tourism development and promotion; Different types of information for tourism development and promotion are especially important to ecotourism development because small communities usually cannot afford to hire experts.
- Constitute of an Empowered committee under the ministry of tourism to address the problems of tourism industry
- Declaring tourism as infrastructure industries which help it attract low cost funds.
- Urgent need for increasing airline seat capacity by following open sky policy.
- Giving wider publicity to potentially attractive places of tourist attractions, their history, traditions, art, music, climate and information about availability of accommodation in different cost segment, transportation, etc.
- Participating in a variety of electronic databases and booking systems. On the internet, develop partnerships and link to all credible home page providers.
- Strict visa requirements for very small number of countries.

It is obvious that management and marketing of ecotourism often require a community effort because of the nature of tourism; the community as a whole and its image must be marketed, not just one attraction.

In Essence

Ecotourism depends on natural resources such as forests, mountains, rivers and lakes. Most ecotourism activities take place on public lands or waterways, but are supported by a network of locally owned businesses. Tourism that sustains or enhances the geographical character of the place being visited - its environment, culture, aesthetics, heritage and residents' well-being. Tourism has become an instrument for sustainable human development through poverty alleviation, environmental regeneration, job creation, and the advancement of women and other disadvantaged groups. Tourism has proved to be an engine of growth in many economies in the world. The movement towards ecotourism is at once a threat and an opportunity to create more sustainable tourism by diverting tourist traffic to ensure the carrying capacity of any destination is not exceeded by planning for regeneration of natural resources and by generating awareness in the host community whereby they are prepared and forearmed to deal with the negative impact of mass tourism. Ecotourism in the Indian context has significant implications for nature and culture conservation, rural livelihoods and conservation education.

*The Writers are *Research Scholar Deptt. of Geography and **Research Scholar Deptt. of Agricultural Economics and Business Management, Aligarh Muslim University*

Emerging Trends in Indian Agriculture

By **Ashok Gulati***

India has witnessed many a trends in the agri and allied field in the year that went by. Some of the emerging trends are noted below:

Emerging Trends

- The increasing role of the corporate sector in agriculture by infusing new technologies and ccessing new markets. And the key issue here is: will the next revolution in Indian agriculture be triggered by the corporate sector?
- Increasing integration of agriculture with the new emerging agri-system comprising Rural Business/ Service Hubs (RBHs) at the back end, and agroprocessing industry and organized retailing at the front end – primarily driven by the corporate sector. And the issue here is: can the fast scaling up corporate sector in agri-business mainstream the fragmenting smallholders?
- There is a wide variation in agricultural growth across different states in India at least during the last five-seven years or so. At one end of the spectrum there are states like Gujarat that are showing strong growth of 8-10 per cent per annum in agriculture, while at the other end are states like Uttar Pradesh, West Bengal, etc., that are growing barely at 1-2.5 per cent per annum. And the issue here is: can these laggard states learn some lessons from the fast moving states and pull up the overall performance of Indian agriculture?

If there is any other crop that has registered a phenomenal growth during the last 6-7 years, it is cotton

Let me try to elaborate these three points to make clear the issues under discussion, and thereafter I would like to share my understanding of the changes that are needed in institutions, incentives and investments to accelerate growth in agriculture which can make it more competitive, inclusive, sustainable and scalable.

1. Technology, Markets and the Increasing Role of the Corporate Sector

After the green revolution in wheat and rice during the late-1960s and early-1970s, which was driven largely by the government, if there is any other crop that has registered a phenomenal growth during the last 6-7 years, it is cotton. Cotton production in India has doubled, from 15.8 million bales in 2001-02 to 31.5 million bales in 2007-08, and is expected to hit 32.2 million bales in 2008-09 (Cotton Advisory Board, 2009) (*see* Figure 1).

We all know that this is primarily the result of introducing Bt (*Bacillus thuringiensis*) technology in cotton. This new technology was formally released in 2002, although it had sneaked into

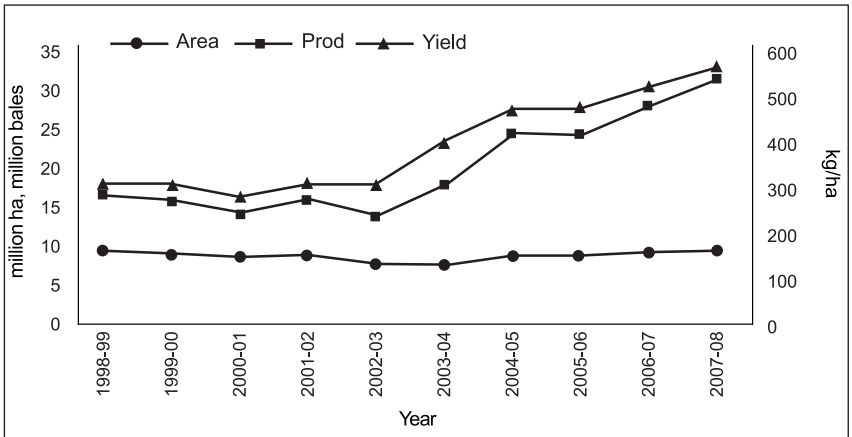


Figure 1. Area, yield and production of cotton, all India: 1998-99 to 2007-08

Source: Cotton Advisory Board (2009)

farmers' fields in Gujarat somewhat surreptitiously in 2001. The farmers in Gujarat and elsewhere in India, who used Bt seeds of cotton, found dramatic turnaround in their yields,

almost doubling over the period 2000-01 to 2008-09 (*see* Figure 2). Not only they gained in terms of yields, but there was a substantial reduction in the use of pesticides, which augmented their net incomes.

This increased their profitability leading to almost a scramble for new technology, which spread like wild fire. Within seven years, more than 80 per cent of the cotton area has come under Bt (*see* Figure 2). It is interesting to observe that in 2008, there were 30 private sector companies that together sold 274 Bt cotton hybrids. There was only one public sector institution [Central Institute of Cotton Research (CICR), Nagpur and University of Agricultural Sciences (UAS),

Dharwad, Karnataka] in Bt cotton seeds. While technology played a catalytic role in triggering a change in cotton sector, it would be naive to presume that this could have been achieved without good markets which the farmers got for cotton. India's consumption of cotton hovers around 20-24 million bales, while the production went to more than 30 million bales. This would have led to a major market crisis if the surplus cotton could not have been exported. Raw cotton exports increased from less than a million bales in 2002- 03 to more than 8 million bales in 2007-08 (*see* Figure 3).

This is the highest ever export of cotton from India during the past sixty years. This was achieved when the global economy was in upswing and textile sector was doing very well, and even China started importing raw cotton from India for its textile and garment sector. But, since the recession hit the western world in 2008, demand for textiles and garments has been declining in the US and Europe, leading to a major crisis in China which is drastically cutting down imports of cotton from India. As a consequence of this shrinking market, the expansion and benefits of cotton revolution in India will now hit a major road block. This clearly speaks of two important lessons, given in Box 1.

It may be worth bringing out here that the cotton story earlier had been

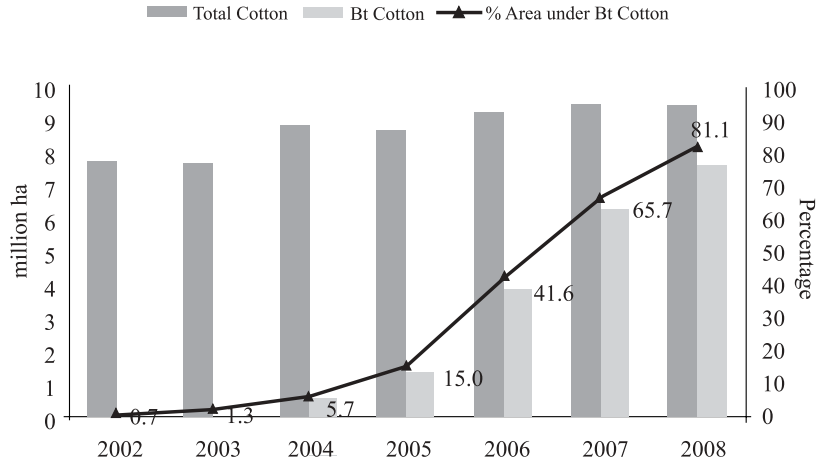


Figure 2. Area under total cotton and Bt cotton, All India: 2002 to 2008

Source: Cotton Advisory Board (2009) and James (2008)

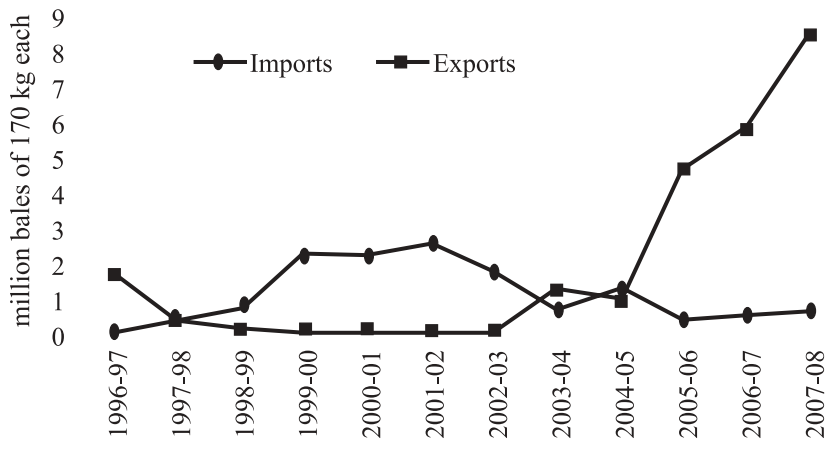


Figure 3. Export and import of cotton, All India: 1996-97 to 2007-08

Source: Cotton Advisory Board (2009).

Box 1

Two Important Lessons

1. The corporate sector has an important role to play in generation and diffusion of technology in the years to come. This can be a major driver of change in Indian agriculture. However, technological advancement alone, without access to markets, is not sufficient to bring about a revolutionary change.
2. With increasing production in the face of recession in the global economy, there will be a battle for markets. Some developed countries are even likely to subsidize their produce to retain their markets (as was the case with US in early years of 2000). For developing countries like India and Brazil, there is a need to remain alert and take up such issues in the WTO negotiations to streamline distortions in world agriculture (as Brazil did for cotton). This also speaks of the need to remain actively engaged in WTO negotiations for agriculture, which has a separate component for cotton. An over-defensive posture in WTO negotiation may not be very useful in the years to come.

The next crop to experience Bt technology maybe eggplants (brinjals). Monsanto/Mahyco's Bt brinjal has gone through several hops, ranging from laboratory stage, to green house trials, to confined field trials, to multi-location research trials, to large scale field trials, and now is in seed production stage

associated more with the unfortunate incidents related to farmers' suicides, and people have given somewhat lesser attention to the positive aspects o f changes in the cotton sector that I have highlighted above. In any case, the cotton story cannot be completed unless we also try to respond to the suicides cases. At IFPRI we took up this issue very seriously, especially after the visit of Mr Sharad Pawar to IFPRI in 2006, wherein he emphasized that this was a major concern of the Government of India.

IFPRI researchers (Gruere *et al.*, 2008) worked very systematically on this issue, digging out official and unofficial records of farmer suicides from sources ranging from the NGO community, media, and National Crime Records Bureau.

The concentration of suicides was in Vidharba district of Maharashtra, northwest Andhra Pradesh, and northern Karnataka. An analysis of data, however, shows that farmer suicides constituted about 15 per cent to 16 per cent of the total suicides in India, and the trend between 1998 to 2006 has been flat. Notably, the rate of suicides (per 100,000 population) is much lower amongst farmers (ranging between 1.42 and 1.71 during 1997 to 2005 without any trend) than in the non-farming community (around 10 to 11 per 100,000 population over the same period). The farmer suicides in certain pockets were high due to various factors such as: farmers were unable to adopt Integrated Pest Management (IPM); borrowed money at high rates of interest (24 per cent to 48 per cent) from informal sources; planted Bt cotton in rain-fed areas and when rains failed they suffered heavy losses in the absence of any weather insurance.

So, it speaks of failure on extension front with respect to IPM, on credit front with respect to lack of formal credit facilities from the banking sector, on irrigation investment front as large tracts remain rain-fed, on insurance front as weather insurance has not been made available to cotton farmers in any meaningful way, and finally on governance front as much of the seeds or pesticides are of low quality and even spurious. Bt cotton seeds *per se* cannot be blamed for these unfortunate suicides. Despite all these odds, Bt cotton, driven by the corporate sector, has spread to more than 80 per cent of cotton area in the country, much more than that found in China. More than 5 million farmers have adopted it, which itself speaks of a sort of success of cotton story. The weighted average of peer reviewed studies reported by IFPRI shows that the net returns from cultivation of Bt cotton increased by more than 52 per cent (Gruere *et al.*, 2008)3. This perhaps explains the rapid adoption of this technology by the farmers.

The challenge now is to sustain it over the next five years or more as the global markets are melting down.

Expanding Reach of Technology from the Private Sector

The next crop to experience Bt technology maybe eggplants (brinjals). Monsanto/Mahyco's Bt brinjal has gone through several hops, ranging from laboratory stage, to green house trials, to confined field trials, to multi-location research trials, to large scale field trials, and now is in seed production stage. The commercial release can be any time in 2009 or 2010 (Choudhary and Gaur, 2009). "Mahyco has donated this technology to public sector institutions not only in India but also to public sector institutions in Bangladesh and the Philippines" (James, 2008; p. 68). It would be interesting to watch what happens to this crop which uses maximum pesticides amongst all vegetables. And this is the first food crop of India that is genetically modified. The

Supreme Court has already lifted restrictions on the release of GM food crops in India in 2008.

There are several other biotech crops that are at field trial stage. Most of them are food crops such as cabbage, cauliflower, okra, potato, tomato, groundnuts, corn and even rice. If India succeeds in having more drought-tolerant rice and maize, there could be major gains in staple crops, and hence food security of a large mass of people can be ensured. In any case, the stage seems to be getting ready for the next technological infusion in Indian agriculture, and much of this has been triggered by the private sector, although lately in biotechnology, though nowhere near what China is planning in this field.

The next big cereal crop that is experiencing reasonably healthy change in production is maize, up from 12 million tonnes in 2000-01 to 19.3 million tones in 2007-08, registering a rise of 60 per cent over sevenyear period. The increase in production comes partly from area increase as also productivity enhancement driven by hybrid seed technology led by the corporate sector, and supported by expanding market for maize for poultry as well as exports. While we talk of emerging crop technologies that may change the future course of agriculture, it may be worth mentioning about mycorrhizal technology that TERI has been developing for quite some time.

The field trials of this factory produced fungal material (mycorrhiza), show that by coating it on crop seeds it can enhance crop nutrition and yields by 5 per cent to 25 per cent, but more importantly reduce fertilizer consumption by 25 per cent to 50 per cent (TERI, 2009). TERI has developed a patented production process of this technology and has devised a low-tech, labourintensive method to multiply it. It is being commercially produced by certain companies (Cadila, and KCP Sugars), and the breakthrough lies in making this technology available to the farmers at large scale, and at competitive prices. If this technology takes off, it can lead to huge savings in fertilizer subsidy, which in turn, can be invested in developing irrigation in drier areas or in developing road network in rural areas.

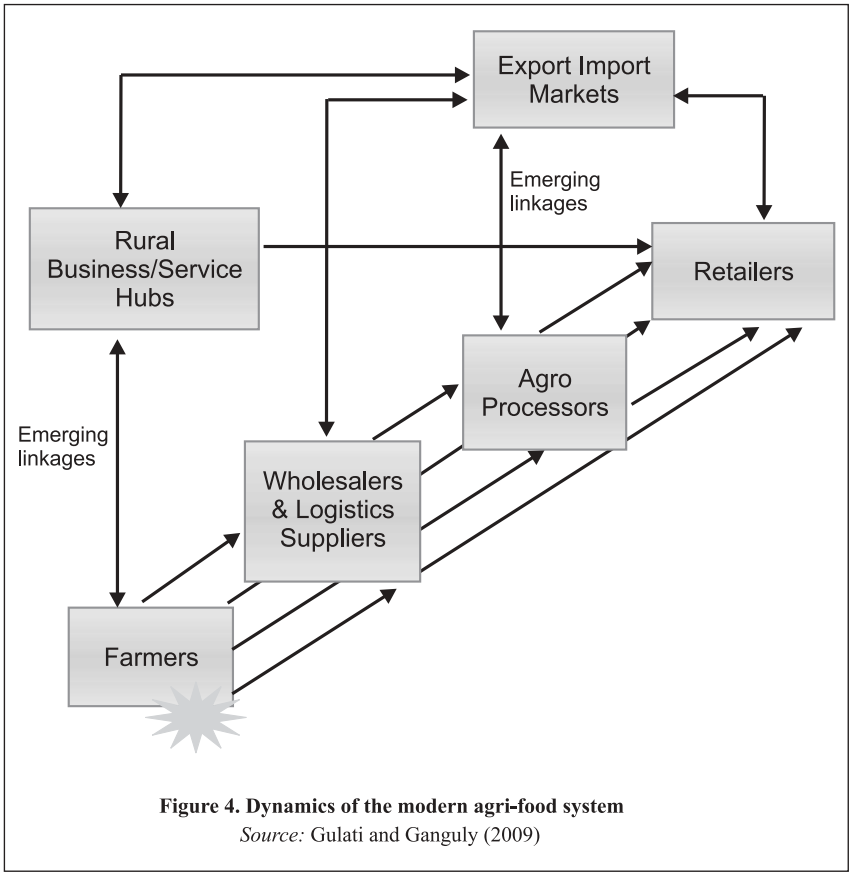


Figure 4. Dynamics of the modern agri-food system
Source: Gulati and Ganguly (2009)

2. The Rise of Corporate Sector in Indian Agrisystem:

Consolidating Top and Fragmenting Bottom Structural Transformation of Agri-system

Another noticeable trend in recent years is that of a structural transformation in the agri-system which can have significant repercussions for agriculture in due course. The traditional agri-system that stretches from input dealers to farmers to aggregators, wholesalers, processors and retailers, has witnessed a new trend during the past 6-7 years; namely, the entry of major corporate firms. These players are entering at the front end in organized food processing and retailing, as well as at the back end as input service providers through an innovative model of Rural Business/ Service Hubs (RBHs) (*see* Figure 4). As a result of this growing integration, farmers are likely to experience much greater interface with corporate world, some working very closely with them and others in tandem. But, the fact is that in the years to come, agriculture (or farming) cannot remain insulated from the structural changes in larger agrisystem.

The key issue that remains for us is to see how it can benefit the farmers. Will the growing competition amongst the front-end players deliver better prices, markets and value chain services to the farmers? It will be interesting to observe if these processes of change generate positive synergies within the system that can catalyze a win-win situation. But before we do that, let us try to understand the nature and pace of this change.

The Rise of Organized Retail

During the past five years, particularly 2002-03 to 2007-08, there is a new phenomenon on the Indian landscape; rise of the organized food and grocery retail sector. The organized food and grocery retail which was almost non-existent seven years back has been growing at a phenomenal pace. The top 10 Indian food and grocery retailers, for example, have grown at an average annual rate of more than 70 per cent per annum during 2002-07 (*see* Figure 5). This has been perhaps the fastest growth in the Asian sub-continent *albeit*, India started from a low base. This trend is

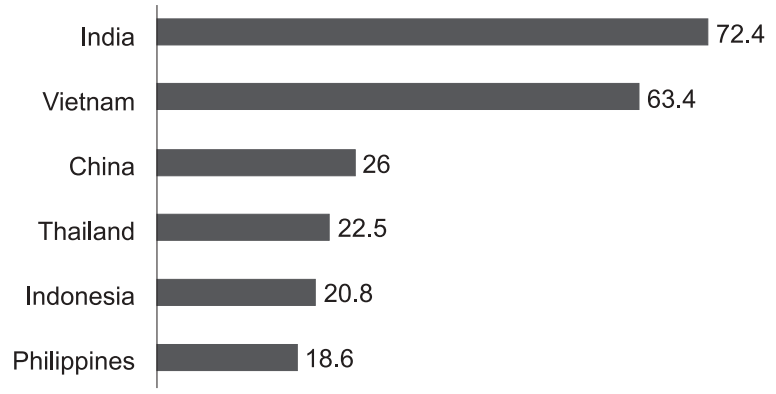


Figure 5. Top 10 food and grocery retailers - Average annual per cent growth in sales: 2002 to 2007

Source: Planet Retail (2008)

likely to continue for the next 10- 15 years not to rule out some bumpy ride during 2008- 2010. What's more, the sector is primarily driven by domestic conglomerates. If the government opens it to foreign direct investments, there will be a flurry of foreign players who will not only bring in investible funds but also global expertise and knowledge, much needed to develop this growing sector. There is a big divide on whether this revolution in the organized food and grocery retail will eventually result in a large number of gainers or losers. While one cannot ignore the process of "creative destruction" (Schumpeter, 1942), there will emerge opportunities of mainstreaming and co-opting. As the share of organized retail reaches 20 per cent to 30 per cent of the retail sector, it will start impacting significantly various stakeholders in the agrisystem. Also, as the system gets increasingly organized, it is likely to have a spillover effect on the unorganized segment in terms of generating greater employment opportunities for the commission agents, small traders and even modernization of the traditional segment.

Emergence of Rural Business/ Service Hubs

As the front end is rolling out, the demand for input services is increasing and given a vacuum of services in rural areas, the pressure at the backend is also building up. Many private retailers/ processors are feeling the need to streamline the supply channels and forge better firm-farm linkages. This has given rise to a class of service providers who specialize in providing agri-inputs and services and are entering the domain of organized food retail as third party service providers. While some have the advantage of having worked directly with farmers for a long time, others are still experimenting. Private players like ITC (*Choupal Saagar*), DSCL

(*Hariyali Kisaan Bazaar*), Tata (*Kisan Sansar*), and Future group (*Aadhaar*) are some of the key players operating in this segment of the agri-system (*see* Figure 8). The origin of this model lies in the Public-Private-Panchayat Partnership (PPPP) model led by Confederation of Indian Industries (CII) and the Ministry of Panchayati Raj which aims to develop villages into business hubs. Some of these RBHs are similar to rural malls which offer not only agri inputs and services but also consumer goods, household items, grocery, food courts, fuel stations and also medical services. They are also in the process of developing buyback arrangements with the farmers who avail these services or otherwise, as being done by ITC led Choupal Saagar in procuring soya directly from the farmers. Here in a rough taxonomy based on a four-quadrant classification is given, with the service categories as the quadrants:

(1) output procurement;

(2) input provision and related services, extension and credit;

(3) consumables retail;

(4) other services (health, education/ training, insurance (*see* Figure 9).

The concept of RBHs is still evolving in the Indian agricultural scenario; players are toying with various ideas and experimenting the same. Some of them are even scaling up very aggressively, e.g. Hariyali Kisan Bazaar has doubled its stores within two years. In 2009, they have about 300 outlets (80 centres and 220 stores).

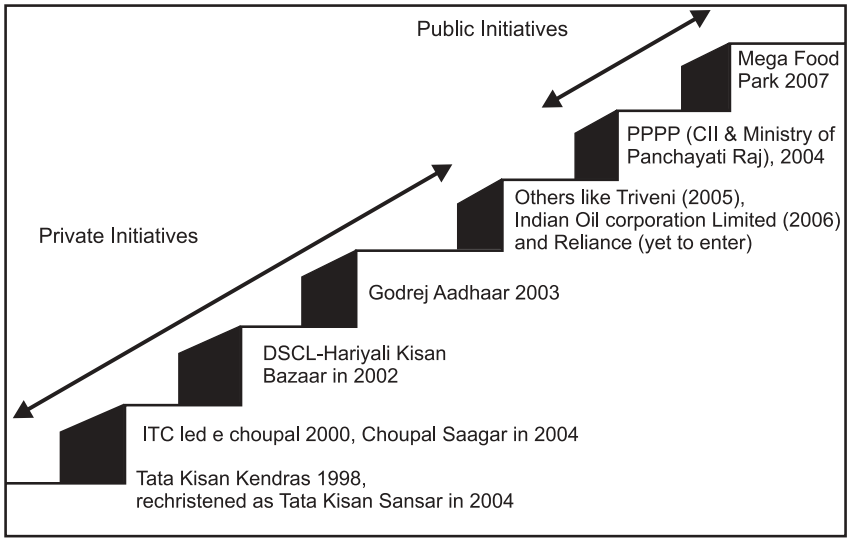


Figure 8. Emerging models of rural business/service hubs

Source: Gulati and Gupta (2008)

With huge investments flowing from the private sector and the public sector playing the role of a facilitator, these hubs can be instrumental in filling up the service vacuum which exists in the rural areas and also emerge as procurement hubs for agricultural commodities. Also, these serve as a platform to envisage public-private partnerships, particularly for extension services that play a critical role in a diversifying agricultural economy. While it is not enough to criticize the shortcomings of the public sector led extension service network, it will be worthwhile to explore opportunities of coming together and incentivizing the system to deliver services to the farmers. For example, sending public sector extension personnel on deputation to these RBHs can be a catalyst of change. Those on deputation can be given extra 20-25 per cent salary by the private sector to make it work more efficiently.

What Can We Learn from these Emerging Trends and Innovations?

All three points that I have mentioned in the above paragraphs point to some important lessons.

Private Sector for Productivity and Public Sector for Governance

First, that with increasing role of the corporate firms in technology generation and diffusion, as has been the case in cotton, there are potential gains that the society can have in terms of higher production, exports, and farmers' incomes, provided the policy environment is conducive to it. However, this is not to downsize the role of the public sector as it remains responsible for creating an enabling environment for the corporate players to operate. To carry forward the agriculture-for-development agenda amidst a rising class of corporates in the agricultural sector, the government needs to play a more proactive role as a coordinator, facilitator and also a regulator (The World Bank 2007b). The issue is not private versus public but of the two sectors working in partnership in tandem with civil society, farmer groups and the like. This is particularly desirable in reaching out new technologies to the farmers through an informed network.

Mainstreaming Small Holders

Second, with the entry of large firms in agri-system, the value chains can be improved, compressed, and made more efficient with higher investments in logistics, etc.

Farmers can also gain from available technologies and assured markets, if one could evolve appropriate institutional structures for their mainstreaming.

This needs rational thinking and innovative approaches, and it is a challenge to researchers, government bodies, as well as to business sector that are driving and implementing many of these changes.

Governments Need to Invest in Infrastructure and Reform Institutions

Third, government has an important role to play, not just in regulating the business, but also investing in basic infrastructure like roads, canal waters, watersheds, check dams, and khet talavadi, as Gujarat has done, and where business firms normally do not enter due to classic problem of market failure. Perhaps this can be instrumental in attracting private investments in other areas of the supply chain; exploiting the complementarity of public-private investments.

At present, there is a deficit of trust amongst the firm and the farmers, owing to an uneven playing field.

There is a need to bring about certain institutional reforms that promote firm-farm linkages. Implementation of the Model Act (amended Agricultural Produce Marketing Committee Act) across all states is essential to allow direct purchase and sale of agricultural commodities between the corporate and the farmers.

Also, opening up of the land lease markets will be important in legalizing land leasing. This will help the owner lease out without the fear of losing the ownership. Computerization of land records although recommended, needs to be put in place to ensure greater transparency in land deals.

Government has an important role to play, not just in regulating the business, but also investing in basic infrastructure like roads, canal waters, watersheds, check dams, and khet talavadi, as Gujarat has done, and where business firms normally do not enter due to classic problem of market failure

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Micro-Finance as an Anti Poverty Vaccine for Rural India

By: **Manish Kumar*, Narendra Singh Bohra** & Amar Johari*****

India falls under low income class according to World Bank. It is second populated country in the world and around 70 % of its population lives in rural area. 60% of people depend on agriculture, as a result there is chronic underemployment and per capita income is only $ 3262. This is not enough to provide food to more than one individual. The obvious result is abject poverty, low rate of education, low sex ratio, and exploitation. The major factor account for high incidence of rural poverty is the low asset base. According to Reserve Bank of India, about 51 % of people house possess only 10% of the total asset of India .This has resulted low production capacity both in agriculture (which contribute around 22-25% of GDP) and Manufacturing sector. Rural people have very low access to institutionalized credit (from commercial bank).

Need of the study

- The need of microfinance arises because the rural India requires sources of finance for poverty alleviation, procurement of agricultural and farms input.
- Micro finance is a programme to support the poor rural people to pay its debt and maintain social and economic status in the villages.
- As we know that India is agriculture based economy so microfinance may be a tools to empower the farmers and rural peoples to make agriculture profitable.
- So the researchers are interested to find out the scopes of microfinance in rural India. This research paper is highlighting a picture rural India as a profitable segment for microfinance institutions.

Objective

- To analyze the growth of microfinance sector developed in India and see potential for the microfinance institutions, NGOs, SHGs in the market.
- To analyze the structure and pattern of microfinance programme in rural Indian by the MFIs, NBFCs.
- To understands the marketing of microfinance products in rural market.
- To study the importance and role of microfinance in poverty alleviation and profitable agriculture activities.

Introduction

Micro-finance economically disadvantaged segments of society, for enabling them to raise their income levels largest in term of population after China. India's GDP ranks among the top 15 economies of the world. However, around 300 million people or about 80 million households are living below the poverty line, i.e. less than $2 per day according to the World Bank and the poorest are which earns $1 per day. It is further estimated that of these households, only about 20% have access to credit from the formal sector. Out of these 80 million house hold, 80% takes credit from the informal sources i.e. local Zamidars, Chit Funds etc. With about 80 million households below MFIs include non- governmental organizations (NGOs), credit unions, non-bank financial intermediaries, and even a few commercial banks.

Legal and Regulatory Framework for the Microfinance Institutions in India:

Societies Registration Act, 1860:

NGOs are mostly registered under the Societies Registration Act, 1860. Since these entities were established as voluntary, not-for-profit development organizations, their microfinance activities were also established under the same legal umbrella. main purpose is:

- Relief of poverty
- Advancement of education
- Advancement of religion
- Purposes beneficial to the community or a section of the community.

Indian Trusts Act, 1882:

Some MFIs are registered under the Indian Trust Act, 1882 either as public charitable

trusts or as private, determinable trusts with specified beneficiaries/members. *Micro-Finance as an Anti Poverty Vaccine for Rural India* 31

Not-For-Profit Companies Registered Under Section 25 Of Companies Act, 1956:

An organization given a license under Section 25 of the Companies Act 1956 is allowed to be some of the provisions of the**Companies Act, 1956.**

For companies that are already registered under the Companies Act, 1956, if the central government is satisfied that the objects of that company are restricted to the promotion of commerce, science, art, religion, charity or any other useful purpose; and the constitution of such company provides for the application of funds or other income in promoting these objects and prohibits payment of any dividend to its members, then it may allow such a company to register under Section 25 of the Companies Act.

A Profile of Rural India

- 350 million Below Poverty Line
- 95 percent have no access to microfinance.
- 56 percent people still borrow from informal sources.
- 70 percent don't have any deposit account.
- 87 percent no access to credit from formal sources.
- Annual credit demand is about Rs.70,000 crores.
- 95 percent of the households are without any kind of insurance.
- Informally Microfinance has been in practice for ages.

Rural India and Microfinance

Micro financing has become important since the possibility of a sub-Rs 1,000 mobile handset has been ruled out in the near future. Rural India can generally afford handsets in the price range of Rs 1,500-2,000.

To succeed in India, agribusiness must empower the farmer by making agriculture profitable, not by expropriating him foe this particular purpose the farmer should be funded for their basic and small needs.Micro finance is expected to play a significant role in poverty alleviation and development. The need, therefore, is to share experiences and materials which will help not only in understanding successes and failures but also provide knowledge and guidelines to strengthen and expand micro finance programmes. The development process through a typical micro-finance intervention can be understood with the help of the following Chart The ultimate aim is to attain social and economic empowerment. Successful intervention is therefore, dependent on how each of these stages has been carefully dealt with and also the capabilities of the implementing organizations in achieving the final goal, e.g., if credit delivery takes place without consolidation of SHGs, it may have problems of self-sustainability and recovery. A number of schemes under banks, central and state governments offer direct credit to potential individuals without forcing them to join SHGs. Compilation and classification of the communication materials in the directory is done based on this development process.

Success Factors of Micro-Finance in Rural India

Over the last ten years, successful experiences in providing finance to small entrepreneur and producers demonstrate that poor people, when given access to responsive and timely financial services at market rates, repay their loans and use the proceeds to increase their income and assets. This is not surprising since the only realistic alternative for them is to borrow from informal market at an interest much higher than market rates. Community banks, NGOs and grass root savings and credit groups around the world have shown that these micro enterprise loans can be profitable for borrowers and for the lenders, making microfinance one of the most effective poverty reducing strategies.

A. For NGOs

- The field of development itself expands and shifts emphasis with the pull of ideas, and NGOs perhaps more readily adopt new ideas, especially if the resources required are small, entry and exit are easy, tasks are (perceived to *Micro-Finance as an Anti Poverty Vaccine for Rural India* 33 be) simple and people's acceptance is high – all characteristics (real or presumed) of microfinance.
- Canvassing by various actors, including the National Bank for Agriculture and Rural Development (NABARD), Small Industries Development Bank of India (SIDBI), Friends of Women's World Banking (FWWB), Rashtriya Mahila Kosh (RMK), Council for Advancement of People's Action and Rural Technologies (CAPART), Rashtriya Gramin Vikas Nidhi (RGVN), various donor funded programmes especially by the International Fund for Agricultural Development (IFAD), United Nations Development Programme (UNDP), World Bank and Department for International Development, UK (DFID)], and lately commercial banks, has greatly added to the idea pull. Induced by the worldwide focus on microfinance, donor NGOs too have been funding microfinance projects. One might call it the supply push.
- All kinds of things from khadi spinning to Nadep compost to balwadis do not produce such concrete results and sustained interest among beneficiaries as microfinance. Most NGO-led microfinance is with poor women, for whom access to small loans to meet dire emergencies is a valued outcome. Thus, quick and high 'customer satisfaction' is the USP that has attracted NGOs to this trade.

B. For Financial Institutions and banks

- Microfinance has been attractive to the lending agencies because of demonstrated sustainability and of low costs of operation. Institutions like SIDBI and NABARD are hard nosed bankers and would not work with the idea if they did not see a long term engagement – which only comes out of sustainability (that is economic attractiveness).On the supply side, it is also true that it has all the trappings of a business enterprise, its output is tangible and it is easily understood by the mainstream. This also seems to sound nice to the government, which in the post liberalisation era is trying to explain the logic of every rupee spent. That is the reason why microfinance has attracted mainstream institutions like no other developmental project.Perhaps the most important factor that got banks

involved is what one might call the policy push.Given that most of our banks are in the public sector, public policy does have some influence on what they will or will not do. In this case, policy was followed by diligent, if meandering, promotional work by NABARD. The policy change about a decade ago by RBI to allow banks to lend to SHGs was initially followed by a seven-page memo by NABARD to all bank chairmen, and later by sensitisation and training programmes for bank staff across the country. Several hundred such programmes were conducted by NGOs alone, each involving 15 to 20 bank staff, all paid for by NABARD. The policy push was sweetened by the NABARD refinance scheme that offers much more favourable terms (100% refinance, wider spread) than for other rural lending by banks. NABARD also did some system setting work and banks lately have been given targets. The canvassing, training, refinance and close follow up by NABARD has resulted in widespread bank involvement.

Marketing of Microfinance Products

Contract Farming and Credit Bundling

- Banks and financial institutions have been partners in contract farming schemes, set up to enhance credit. Basically, this is a doable model. Under such an arrangement, crop loans can be extended under tie-up arrangements with corporate for production of high quality produce with stable marketing arrangements provided – and only, provided – the price setting mechanism for the farmer is appropriate and fair.

Agri Service Centre – Rabo India

- Rabo India Finance Pvt Ltd. has established agri-service centres in rural areas in cooperation with a number of agri-input and farm services companies. The services provided are similar to those in contract farming, but with additional flexibility and a wider range of products including inventory finance. Besides providing storage facilities, each centre rents out farm machinery, provides agricultural inputs and information to farmers, arranges credit, sells other services and provides a forum for farmers to market their products.

Non Traditional Markets

- Similarly, Mother Dairy Foods Processing, a wholly owned subsidiary of National Dairy Development Board (NDDB) has established auction markets for horticulture producers in Bangalore. The operations and maintenance of the market is done by NDDB. The project, with an outlay of Rs.15 lakh, covers 200 horticultural farmers associations with 50,000 grower members for wholesale marketing. Their produce is planned with production and supply assurance and provides both growers and buyers a common platform to negotiate better rates.

Apni Mandi

- This experiment known as "Apni Mandi" belongs to both farmers and consumers, who mutually help each other. Under this arrangement a sum of Rs. 5.2 lakh is spent for providing plastic crates to 1000 farmers. Each farmer gets 5 crates at a subsidized rate. At the mandi site, the Board provides basic infrastructure facilities. At the farm level, extension services of different agencies are pooled in. These include inputs subsidies, better quality seeds and loans from Banks. Apni Mandi scheme provides self-employment to producers and has eliminated social inhibitions among them regarding the retail sale of their produce.

Findings

- Considerable gap between demand and supply for all financial services. *Micro-Finance as an Anti Poverty Vaccine for Rural India* 35
- Majority of poor are excluded from financial services. This is due to, interalia, the following reasons:
- Bankers feel that it is risky to finance poor peoples because of their creditworthiness.
- High transaction costs

Conclusion

The potential for growing micro finance institutions in India is very high. Major cross-section can have benefit if this sector will grow in its fastest pace. Annual growth rate of about 20 % during the next five year. The loan outstanding will consequently grow from the present level of about 1600 crores to about 42000 crores Annual growth rate of about 20 % can be achieved during the next five years.

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Governance in Indian Dairy Co-operatives

By **C.L. Dadhich***

Cooperatives have a huge network in India. Indian cooperative networks broadly consists of credit co-operatives and non-credit co-operatives. While credit co-operatives rule the roost, non-credit cooperatives are gradually gaining prominence. Important among non credit cooperatives are consumer cooperatives, sugar co-operatives, industrial co-operatives, dairy cooperatives, fisheries cooperatives, irrigation co-operatives and marketing co-operatives. The primary objective of this paper is to assess the level of governance in dairy cooperative sector vis-à-vis other cooperative sectors. The paper is based on the latest comprehensive data published by NABARD and National Co-operative Union of India for the year 2001-02. Undoubted information pertains to a considerable time gap yet in the absence of an alternative source, we have to use this data only. Moreover, there is no specific reason to believe that since then, data might have undergone radical changes impacting the analysis and overall results.

Nonetheless, latest information published by National Dairy Development Board has been used to update the reference. The paper is divided into four sections. First section dwells upon the place of dairy cooperatives in cooperative network. Second section deals with the major stakeholders. Third section discusses the level of governance and conclusion is given in last section.

I. Place of Dairy Co-operatives in Co-operative Networks

Out of the 0.54 million co-operative societies in India, dairy cooperatives were 0.10 million constituting 19.0 per cent of total co-operatives. In terms of membership out of 215.4 million members, dairy cooperatives membership accounted for 11.6 million or 5.4 per cent of total co-operative membership. While one form or other form of co-operative was present in each and every village of the country dairy co-operatives were present only in 18 per cent of the villages in the country.

Out of the total share capital amounting to Rs. 160 billion in entire cooperative sector, dairy cooperatives accounted for only Rs. 3 billion or 1.8 per cent. The disproportionately low share of dairy cooperatives in share capital was due to non linking of share capital to milk supplied by the members. Incidentally, in case of credit cooperatives the share capital is directly linked with the amount borrowed (usually share of Rs. 10 for every Rs. 80 borrowed).

However, the share of dairy cooperatives in equity contribution of Government was shade lower at 1.4 per cent though it varies from state to state. Indeed it is a blessing in disguise as share capital contribution is moot cause of state interference. Similarly share of dairy co-operatives in total working capital borrowing and total assets was also lower as compared to membership. Interesting enough, dairy cooperatives have about 12 per cent of total employees working in entire co-operative sector (Table 1). This suggests that dairy co-operatives are more labour intensive and have more potential for employment generation. Needless to add that dairying itself has higher potential for employment generation particularly of women.

Most of the dairy co-operatives follow a three tier pattern popularly known as Anand pattern (a) at the base level by uniting the milk producers at village level in the form of the village dairy co-operative society to procure milk from producers (b) at middle level forming milk union at district or central level by village level dairy co-operative societies to process milk, convert surplus milk into products and to market processed milk and milk products mostly in its jurisdiction. The unions also undertake supply of inputs and provide other technical services like artificial insemination (AI) veterinary and animal health services etc. Milk unions envisaged to enlist the services of professionals. (c) These unions get federated at the state level to market surplus milk and milk products also in other areas in the name of "state brand" with the help of highly talented and motivated professionals to operate in brutal competitive markets. Latest state-wise position as presented in Table 2 indicates that highest milk procurement at 76 million kg/day was recorded in the

Table 1. Share Of Dairy Co-operatives 2001-02

(million)

Item	Grand Total	Of which Dairy Co-operatives	Per cent
(1)	(2)	(3)	(4)
Societies	0.54	0.10	19.04
Members	215.3	11.6	5.37
Total Share Capital	159447.4	2813.1	1.76
Government share	28006.7	386.1	1.38
Working Capital	1937457.4	18555.0	0.96
Total Borrowing	452041.7	10754.1	2.38
Total Assets	686128.3	10071.3	1.47
Total Employee	96991.1	11226.3	11.57

Source: *Indian Co-operative Movement A Profile 2004, National Co-operative Union of India.*

state of Gujarat distantly followed by 3.1 million kg/day. Maharashtra, Karnataka 3.0 million kg/day and Rajasthan 1.4 million kg/day. These five states together accounted for 16.3 million kg/day or 71.2 per cent of the total procurement of 22.9 million kg/day. Speaking in terms of DCS highest number of societies, 20953 societies was noticed in Maharashtra closely followed by Uttar Pradesh 19725 societies; Rajasthan, 13681 societies; Gujarat 13141 societies and Karnataka 10967 societies. These five states together accounted for 60.9 per cent of total 128799 societies in the country. So far as membership is concerned Gujarat stands first with membership of 2.7 million followed by Tamil Nadu 2.2 million, Karnataka 2.0 million, Maharashtra 1.7 million and Uttar Pradesh 0.9 million. These five states together accounted for 9.5 million member constituting 70.1 per cent of total 13.4 million members in dairy co-operatives. The foregoing analysis brings to the fore that Gujarat tops both in terms of procurement and membership. Gujarat is by far most important co-operative dairy state in the country. Some quality of the milk procured by DCS is locally sold, remaining milk is dispatched to the union for processing milk. Union first market the milk and milk products in its jurisdiction and surplus milk and milk products are sold as a state brand popularly known as Amul by the Gujarat Co-operative Milk Marketing Federation in India and abroad under the expert guidance of professionals. Amul is not only top food brand of India, it has emerged as one of the important dairy brand of the World (IFCN, 2009). Turnover of the Amul brand has crossed US $ 1 billion.

II. Major Stakeholders in Dairy Cooperatives

The major stakeholders in dairy co-operatives included milk producers (members and non-members), employees, central and state Governments, bankers, National Dairy Development Board (NDDB) and consumers. Milk producers form the base of dairy co-operative networks. Out of the about 70 million milk producers in the country only 11.6 million (13.4 million NDDB, 2008) are the members of the village dairy co-operative societies. Apparently a sizeable chunk of milk producers have not enrolled themselves as members. This is because village co-operative societies have been organised only in selected potential villages in selected districts of the country. As a result, the milk producers of the uncovered villages remained outside the co-operative network. Even in the covered villages only about 50 per cent of the milk producers have joined the village dairy co-operative society. Groupism was one of the important reasons for not enrolling all the milk producers at the village level. Since members have the voting right, present managing committee may discourage milk producers belonging to opposite groups. This aspect, fierce competition from private dairies, advance payment system, higher prices offered by the private co-operatives and Dudhias, inconvenient location of village dairy co-operative society, odd milk collection timings etc. were also cited as important reasons for poor coverage of milk producers by the village dairy co-operatives. Moreover, in several states producer members did not have any significant advantage over producer non-members. As a result, there was growing incidence of non-member pourer in cooperative sector particularly during the lean season.

Table 2. State-wise Position Of Dairy Co-operatives 2007-08

(million)

State (1)	No. of DCS cumulative (2)	Farmer Members (000) (3)	Milk procurement Tk/day (4)
Assam	66	3	1
Nagaland	45	2	3
Sikkim	236	8	10
Tripura	84	5	3
Bihar	6544	322	471
Jharkhand	72	1	7
Orissa	2932	166	235
West Bengal	2678	195	263
Chhattisgarh	728	29	20
Madhya Pradesh	5483	257	461
Uttar Pradesh	19725	919	817
Goa	175	19	41
Gujarat	13145	2716	7592
Maharashtra	20953	1727	3063
Andhra Pradesh	4622	815	1104
Karnataka	10967	1965	3025
Pondicherry	101	39	54
Tamil Nadu	9573	2155	2201
Haryana	6515	293	516
Himachal Pradesh	594	27	37
Punjab	6432	378	824
Rajasthan	13681	645	1359
All India	128799	13411	22874

Source: *National Dairy Development Board Statistics. www.nddb.org*

As mentioned earlier at the first layer these milk producers get organised in the form of a village dairy co-operative society. It is observed, that all the organised societies were not the registered societies while in some of the states the gap between the organized and registered society was not significant, in some states it was alarming. Incidentally without registration society does not have voting right at union level.

Dairy co-operatives have little over 1 lakh employees to manage the operations. Varying from state to state, majority of employees at district and state level co-operatives are from the "Common Cadre" of the concerned state. In the absence of belongingness these

employees do not put their head and heart in co-operatives. A large chunk of them are non-professional as well. This apart, except Gujarat, Chief Executive Officer is mostly a bureaucratic making the entire ogranisation a parastatal enterprise.

Depending upon the membership from one state or more than one state, co-operatives can be registered either under the Multi State Co-operative Societies Act of Central Government or State Co-operative Societies Act of the concerned state(s), as most of the dairy co-operatives have state jurisdiction, many have been registered under State Act of the concerned states. Co-operative Societies Act provides immense powers relating to registration, equity participation, manning, deputation of its Officer, holding elections, suspension of managing committee(s), governing boards, auditing, inspection and winding up of the societies. These sweeping powers enables the Government to interfere in the day to day operation of these institutions. The root cause of its interference lies in the share capital participation. Incidentally government's involvement in share capital of dairy co-operatives amounted to Rs.386 million forming about 1.4 per cent of the total share capital of dairy co-operatives. At times Government also indulge in fixation of producer's and consumer prices of milk thereby affecting the very base of co-operative enterprises.

With a view to ensuring the autonomy and democractic characteristic of co-operatives a large member of states have enacted Mutually Aided Co-operative Societies Act. But repressive taxation structure did encourage many co-operatives to opt for new Act (Amrita Patel, 2004). Although some progress was made particularly so in the state of Andhra Pradesh to move to MACS at primary level (village level), no tangible benefits were obtained in the absence of similar movement at district and state level. Political influence rather them business consideration continued to play an inordinate role in governance (Amrita Patel, 2004).

One of the most important stakeholder in co-operative dairy sector is National Dairy Development Board (NDDB). Impressed by the success of AMUL, the then Prime Minister (late) Shri Lal Bahadur Shastri, Government of India established National Dairy Development Board (NDDB) at Anand in 1965 to replicate AMUL in the other districts of the country, under the chairmanship of Dr. V. Kurien, the then General Manager of AMUL. (Later in 1987 NDDB was brought under the act of Parliament viz "NDDB Act 1987" of Government of India as institute of national importance).

Initially, it was envisaged to fund projects undertaken by NDDB from the budgetary resources of the government but this did not get off the ground due to reluctance of bureaucrats across the states (Kurien, 1987). Soon it was realised that NDDB should have its own programme and funds for the purpose. Accordingly, Operation Flood was evolved and implemented with commodity assistance received under FAO and WFP (World Food Programme). Dairy commodities received as donations were sold at market prices and proceeds so generated were utilised for funding replications of AMUL (Heredia Ruth 1999).

This innovative mechanism ensured stability in prices of dairy products on the one hand and uninterrupted supply of milk products on the other. Operation Flood (OF) programme was implemented in three phases (OF-I from 1970-71 to 1980-81, OF II - 1981-82 to 1984-85 and OF III - 1985-86 to 1995-96) over a period of 25 years. As a techno-financial institution, NDDB created dairy infrastructure as well as provided extension services for organizing village level societies, conducting awareness programmes for members and board members, etc.

NDDB also played a key role in setting up Institute of Rural Management, Anand (IRMA) for imparting management education and training to graduates to undertake managerial positions in rural sector (Heredia, 1999). IRMA graduates are occupying key positions in rural sector in general and in dairy co-operatives of Gujarat in particular.

India being a country of sub-continent size have diversity in production and consumption pattern. So far as milk is concerned, the western and southern states like Gujarat, Karnataka and Tamil Nadu produce and procure surplus milk, while the northern and eastern states are in deficit. With a view to smoothening gaps between the surplus and demand, NDDB has established National Milk Grid to supply surplus milk to deficit areas by providing necessary physical infrastructure and organisational links. This has helped both producers and consumers alike. Efforts are also being made to establish SAARC Milk Grid.

NDDB is a vibrant techno financial institution of national importance has highly motivated and dedicated manpower to set innovative best government practices across the co-

operative dairy sector in India. Unlike other state parastatals in the country NDDB has a committed leadership with high degree of freedom as its board has necessary powers to implement dairy projects without any interference from the Government. In order to infuse young manpower to take the challenging task of dairy development NDDB brought about Voluntary Retirement Scheme(s) from time to time.

Of late, apart from NDDB, commercial banks have started financing dairy co-operatives to achieve their priority sector target. In a way, it has adversely impacted flow of NDDB lending. Incidentally NDDB can not finance other than dairy co-operatives.

As mentioned earlier quite often than not Government decides the producer and consumer prices of milk. As a result interest of the consumers across the country is well taken. Furthermore DCSs takes care of local demand of the milk. However supply of processed milk particularly toned milk consumed by indigent families is a distant dream in DCS villages let alone in non DCS villages. Regulation of co-operative milk prices is neither good politics nor good economics. It has not only adversely impacted viability of dairy co-operatives but also accentuated already set in withdrawal syndrome in Indian dairying

Table 3. Audit Of Dairy Cooperatives During 2001-02

State (1)	No. of Societies due for Audit (2)	No. of Societies due for Audited during the year (3)	Per cent of Societies Audited during the year (Col.3÷2) (4)
Goa	159	156	98.11
Gujarat	8275	6838	82.63
Karnataka	8543	6241	73.05
Kerala	447	292	65.32
Madhya Pradesh	4879	4168	85.43
Maharashtra	23127	4101	17.73
Manipur	17	12	70.59
Meghalaya	31	26	83.87
Orissa	1548	1103	71.25
Tripura	96	53	55.21
Total	47122	22990	48.79

Source: Statistical statements relating to co-operative movement in India, Part II.

Table 4. Statewise Classification Of Audited Societies During 2001-02

State	No. of Societies Audited during the year 2001-02	of which Societies classified as					Total societies classified
		A	B	C	D	E	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Goa	159	43 (27.04)	65 (40.8)	33 (20.75)	15 (9.43)	-	156
Gujarat	8275	1583 (19.13)	2660 (32.15)	1748 (21.12)	845 (10.21)	-	6836
Karnataka	8543	154 (1.80)	2606 (30.50)	3018 (35.33)	241 (2.82)	51 (0.60)	6070
Kerala	447	17 (3.80)	72 (16.11)	171 (38.26)	27 (6.04)	-	287
Madhya Pradesh	4879	184 (3.72)	572 (11.72)	613 (12.56)	1563 (32.04)	1236 (25.33)	4168
Maharashtra	23127	1057 (4.57)	1987 (8.59)	1000 (4.32)	14 (0.06)	-	4058
Manipur	17	-	-	8 (47.06)	-	-	25
Meghalaya	31	-	-	18 (58.06)	8 (25.81)	-	26
Orissa	1548	2 (0.13)	12 (0.78)	551 (35.6)	376 (24.29)	-	941
Tripura	96	2 (2.08)	2 (2.08)	14 (14.58)	17 (17.71)	17 (17.71)	52
Total	47122	3042 (6.45)	7976 (16.93)	7174 (15.22)	3106 (6.59)	1304 (2.77)	22602

Figures in parentheses are per cent to the total
Source: *Statistical Statement relating to co-operative movement in India Part II.*

Table 5: Working Results of Co-operatives in 2001-02

(Rs.in million)

Type of Cooperatives	Total Reporting Cooperatives	Reporting Profit		Reporting Loss		Net Profit or Loss	% Coops Reporting Losses
		No	Amount	No	Amount		
State Cooperative Banks	30	23	2640	7	940	1700	23.3
District Coop. Banks	343	247	6940	96	7360	-420	28.0
Primary Agri.Credit Services	89713	45202	2606	44511	5530	-2924	49.6
SCAR DBs	20	9	850	11	1810	-960	55.0
PCARDBs	768	191	480	577	2910	-2430	75.1
Sub Total Agri Credit Coop	90874	45672	13516	45202	18550	-5034	49.7
Dairy Cooperatives	32799	27697	2138	5102	314	1824	15.6
Marketing Cooperatives	4514	2326	593	2188	2374	-1781	48.5
Consumer Cooperatives	13515	7261	365	6254	397	-32	46.3
Sugar Cooperatives	107	28	123	79	4198	-4075	73.8
Sub Total Non-Credit Coops	50935	37312	3219	13623	7283	-4064	26.7
Grand Total	141809	82984	16735	58825	25833	-9098	41.5

Source : *Statistical statement relating to Cooperative movement in India 2001-02 NABARDCo-operative Governance*

particularly of landless farmers that was initially caused by higher opportunity cost of labour in rural India vis-à-vis dairying (Datta and Dadhich, 2007).

III Governance

While corporate governance aims at maximization of shareholders wealth, the cooperative governance addresses maximization of welfare of the members within the framework of co-operative principles viz., open and voluntary membership, democratic control, equitable distribution of returns, no privilege to capital education relationship to other co-operatives and commitment to community. Foregoing discussions, revealed that dairy co-operatives have not adhered to these principles in many states to the satisfactory level particularly in regard to voluntary membership and democratic control. Audit is one of the important pre-requisite for ensuring proper governance. The number of dairy co-operatives audited during 2001-02 as presented in Table 3 revealed that only 49 per cent of the societies due for audit were audited. The performance was rather dismal in the state of Maharashtra. Incidentally state Government is auditor of the co-operatives (Table 3). The audit report is also an important gauge of the governance. Information as presented in Table 4 indicates that about 50 per cent of the dairy co-operatives have better audit rating in the Gujarat state followed by Karnataka (32 per cent). In remaining reporting states such as Maharashtra, Kerala and Madhya Pradesh audit rating was far from satisfactory. Profit has important linkage with governance. Profit also has linkage with sustainability. Information relating to profitability as presented in Table 5 indicates that net profit earned by dairy co-operatives was highest in the case of dairy co-operatives vis-à-vis other co-operatives. Similarly proportion of the loss making number of societies was also lowest in the case of dairy co-operatives. States have assumed multi roles in cooperative sector -state is owner, regulator, auditor etc. An owner cannot and should not be regulator or auditor. Switching over to the producer company will relieve state from the responsibility of regulator and auditor. Tax structure needs to be made friendly for the switch over to the producers company.

IV Conclusions

The analysis brings to the fore that quality of governance in dairy cooperatives was better as compared to other segments in cooperative sector. The regular flow of income through milk proceeds has made cooperative dairy system distinct one and most relevant of farmer's economy. Needless to say that the support and guidance extended by NDDB in establishing good governing practices has also significantly contributed to its higher level of governance. The variation in state-wise level of governance was due to members apathy in the waking of dairy co-operatives on the one hand and vested interests operating through the state interference on the other. The dairy co-operatives in Gujarat and to some extent in the states of Karnataka have managed to safeguard interest of their members by moderating state interference. Members awareness and selfless co-operative leadership have been instrumental in establishing good governance. Practices like linking the voting rights to partronage at least at apex level, freedom to hire professionals, holding timely and regular elections and transparent fat measurement and payment system have contributed to the good governance in Gujarat. Undoubtedly the new generation co-operatives viz, the producer's companies would be the best alternative for the states having low level of governance. Incidentally under financial sector reforms Reserve Bank of India has gradually withdrawn from equity contribution of bank regulated by it (RBI, 2000-2004). It is high time that state governments should have followed the suit to segregate regulation and development responsibilities. The switching over to the producers company will be by far a step in the right direction.

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GROUNDNUT
A King of Edible Oil Seeds

By **Dr. A. Selvaraj* and K.Kannusamy****

Oilseed crops have been the backbone of agricultural economy of India from time immemorial. These crops are cultivated on about 16.5 million hectares, with total production of 10 million tones. This area constitutes approximately one-tenth of the total cultivated area in India. On the oilseed map of the world, India occupies a prominent position, both in regard to acreage and production. The important oilseed crops grown in this country in order of importance are groundnut, rapseed and mustard, sesame, linseed, safflower, castor, sunflower and Niger.

Major countries with more than a million hectares under groundnuts are India, China, and Nigeria. Countries where more than a half a million hectares of land is used for growing groundnuts are Senegal, Sudan, Zaire, Indonesia, and USA. While in countries like Myanmar, Chad, Vietnam, Mozambique, Burkina Faso, Mali, Uganda, Argentina, Zimbabwe, Cote Divore, South Africa, Pakistan, and Thailand groundnuts are grown in an less than five hundred thousand hectares. China is the world leader in area under groundnut production. India, the second most important country, has almost doubled its area under groundnuts steadily in the last three decades. Nigeria, the third most important groundnut growing country has regained its edge as an important groundnut growing country.

Origin

The groundnut has been recognized around the world by an assortment of colorful names. While Americans call it peanut, it is known by several other names such as African nut, Chinese nut, Manila nut, kipper nut, hawks nut, jar nut, earth chestnut, monkey nut, goober pea, ground pea, and ground bean. Although peanuts have gained importance relatively recently, the origin of this crop dates back to 350 BC. With a humble beginning, groundnuts have gained prominence for their economic importance and nutritional value on a global scale. Groundnuts have become a substitute for costly nuts such as cashews. Now, they are widely regarded as poorman's cashews. Groundnut is grown on wide variety of soil types. However, the crop does best on sandy loam and loamy soils and in the black soils with good drainage. Heavy and stiff clays are unsuitable for groundnut cultivation as the pod development is hampered in these soils.

Although groundnuts are grown around the world, very little readily available information exists on where they are

grown, the kinds of people or farming systems and agro ecological conditions involved in farming them, and the way they are used. The current project, The World Geography of Groundnut, aims to answer these questions through a systematic research and documentation in collaboration with Peanut CRSP (Peanut Collaborative Research Support Program) of the University of Georgia. Such an effort involves developing a country by country reference files containing information on all aspects of the groundnut crop. The areas covered in developing groundnut information base include history of the crop, agro ecological regions where the crop is grown, climate, cropping seasons, production practices, varieties, seed sources, pests and diseases, storage, consumption, trade, and producer characteristics. The information will be collected from secondary sources, gray literature and through field studies in different countries. Thus collected information will be further integrated using GIS and other computer capabilities to produce layers of information which can be further manipulated in different ways for use by scientists, policy makers, and private industry.

Global Scenario

Although India has largest area under groundnuts, China produces more than any other country in the world. Leading countries such as China, India, USA, and Indonesia produce more than a million tons of groundnuts each annually. Annual production of peanuts in China and India is four and five times of the US production respectively. Peanut production in China has undergone eight-fold increase in the last three and half decades while area under production increased only about two and half times. At present, the United States produces now more than double of what is produced in the country. Dramatic increases in the US groundnut production took place in the 70s with productivity levels reaching as high as the current levels, about 2.8 tons per hectare. Indonesia has achieved an impressive amount of increase in the groundnut production during recent years. By doubling its area under groundnut, Indonesia has doubled its area under groundnut and thereby increased the production by more than three times.

The Table 1, shows that area, production and yield of groundnut in world.

Table 1: Area, Production and Yield of Groundnut in World

Year	Area (000' ha)	Production (000' tones)	Yield (kg/ha)
1990-91	20442	23531	1151
1991-92	20720	24411	1178
1992-93	21114	26082	1235
1993-94	21889	28850	1318
1994-95	22509	29277	1301
1995-96	22827	31531	1381
1996-97	23697	30160	1273
1997-98	23266	34125	1467
1998-99	23520	31794	1352
1999-00	29977	34992	1459
2000-01	23014	36104	1569
2001-02	22743	32956	1449
2002-03	22846	36248	1587
2003-04	23589	36337	1540
2004-05	23598	51300	2174
2005-06	22232	47768	2149
2006-07	21108	31030	1470
2007-08	20627	32590	1571
2008-09	21170	34510	1630

Source: *www.faostat.fao.org*

Groundnut is a cash crop produced all over the world, the china and India is the major producers and occupying first and second place respectively

Indian Scenario

The greatest challenge in the 21st century is to produce food fuel, and raw material for human beings form a less available per capita land. The mounting pressure on land has created a situation where the

fragmentation of land holdings into tiny parts has resulted in increasing unavailability of agricultural land with the increasing population. The developing economies are virtually struggling to attain self sufficiency in agricultural production. In order to meet the internal demand and to mobilize foreign exchange reserves through exports the agrarian economies are trying to get a breakthrough in the production. The productivity of Indian agriculture pertaining to important crops such as rice, wheat, maize, pulses and oil seeds is less than that of many countries which are accounted as largest and highest yield getting economies of the world. The trend in oil seeds production in India is very volatile as more than 85 per cent of oil seeds cultivation is rain fed. This is not to undermine oil seeds economy of India and its relevance in global context. Out of 8 important oil seed crops India ranks 1st in area under groundnut, castor, sesame, linseed and safflower.

Oilseed crops have been the backbone of agricultural economy of India from time immemorial. Today these crops are cultivated on about 16.5 million hectares, with total production of 10 million tonnes. This area constitutes approximately one-tenth of the total cultivated area in India. On the oilseed map of the world, India occupies a prominent position, both in regard to acreage and production. The important oilseed crops grown in this country in order of importance are groundnut, rapseed and mustard, sesame, linseed, safflower, castor, sunflower and niger.

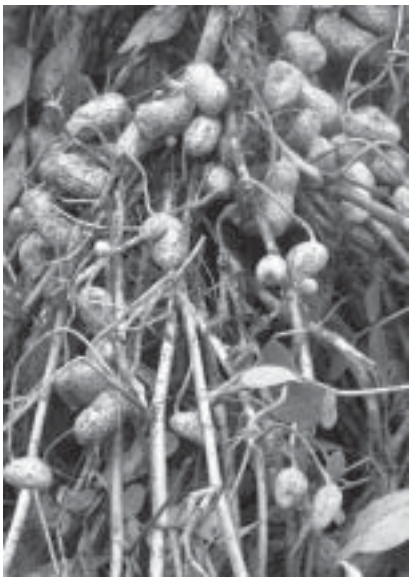

Table 2 shows that area, production and yield of groundnut in India.

To Conclude

Groundnut is a cash crop produced all over the world, the china and India is the major producers and occupying first and second place respectively. To increase the productivity of groundnut in India, the following aspects are to be carefully considered by government and farmers. Marketing system in India must support to maintain the present share of groundnut production in world. Lack of any genetic advance in technology in evolving high productivity seeds. Compulsion of raising oilseeds on unirrigated soils. Low productivity per hectare which can never match rice/wheat productivity levels even if grown on irrigated soil and High risk in losing production due to extreme sensitivity of oilseed crops to adverse weather conditions.

Table 2: Area, production and yield of groundnut in India

Year	Area (1000 ha)	Production (1000 tones)	Yield (kg/ha)
1990-91	8309	7515	904
1991-92	8668	7095	818
1992-93	8166	8565	1049
1993-94	8322	7829	941
1994-95	7922	8255	1042
1995-96	7524	7580	1007
1996-97	7596	8643	1138
1997-98	7088	7372	1040
1998-99	7396	8982	1214
1999-00	6867	5258	766
2000-01	6559	6408	977
2001-02	6238	7028	1127
2002-03	5936	4121	694
2003-04	5987	8127	1357
2004-05	6640	6774	1020
2005-06	6736	7993	1187
2006-07	5600	4864	866
2007-08	6300	9182	1459
2008-09	6200	7300	1169

Source: *Economic Survey 2009-2010.*

Emerging challenges posed by the period of globalization have created vibrant shocks to the farming community, who are unprepared to face such challenges of the globalization. While the developed nations openly supporting their agricultural sector. The impact of globalization the enormously increased the input costs and thus overall investment on agriculture increased significantly. On the other unprecedented floe of imports of the oil seeds into the Indian markets have dampened the price level of oil seeds to the staggering low levels. The native farmers have lost their footing in national markets and it has resulted in wide spread distress among oil seed cultivators.

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Agro-Processing Industries in India – Growth, Status and Prospects

By: **R.P. Kachru***

Agro processing could be defined as set of technoeconomic activities carried out for conservation and handling of agricultural produce and to make it usable as food, feed, fibre, fuel or industrial raw material. Hence, the scope of the agro-processing industry encompasses all operations from the stage of harvest till the material reaches the end users in the desired form, packaging, quantity, quality and price. Ancient Indian scriptures contain vivid account of the post harvest and processing practices for preservation and processing of agricultural produce for food and medicinal uses.

Inadequate attention to the agro-processing sector in the past put both the producer and the consumer at a disadvantage and it also hurt the economy of the Country. Agro-processing is now regarded as the sunrise sector of the Indian economy in view of its large potential for growth and likely socio economic impact specifically on employment and income generation. Some estimates suggest that in developed countries, up to 14 per cent of the total work force is engaged in agro-processing sector directly or indirectly. However, in India, only about 3 per cent of the work force finds employment in this sector revealing its underdeveloped state and vast untapped potential for employment. Properly developed, agro-processing sector can make India a major player at the global level for marketing and supply of processed food, feed and a wide range of other plant and animal products.

Historical Perspective

By the middle of the nineteenth century, common agro processing industries included hand pounding units for rice, water power driven flour mills, bullock driven oil ghanies, bullock operated sugarcane crushers, paper making units, spinning wheels and handloom units for weaving. In British India, during the year 1863, a note was written by the Governor of Madras state, Sir William Denison to the government of Madras state for laying greater stress on agriculture and agro processing (Royal Commission, 1928). Based on this, a set of improved machinery was brought from England for demonstration and adoption. It included threshing machines, winnowers, chaff cutters, besides steam ploughs, steam harrows, cultivators, seed drills and horse hoes. The demonstration continued at Saidapet near Madras till 1871 with little outcome.

Importance of agro-processing sector was first realized and documented after the disastrous famine of Bengal during 1870's. Report of the Famine Commission, set up by the British Government, in its report submitted in 1880, clearly stated the need for agricultural improvement and improved post harvest infrastructural development specifically, rail network.

Need was also felt for incorporating chemical interventions in the agricultural sector and precision farming through agricultural mechanisation manned by engineers. The Royal Commission on Agriculture setup by the British Government, conducted a detailed study. In its report published during the year 1928, it called for scientific approach to the sector and stressed for developing rural industries and cooperatives. Realizing the importance of the agro-processing sector for rural development as a tool for POORN SWARAJ (complete self rule), Mahatma Gandhi during 1930's promoted CHARKHA (spinning wheel) and balanced nutrition by setting example and writing articles in his famous magazine "Harijan". It was continued by his followers namely, Narhari Bhave, Binoba Bhave and Jay Prakash Narayan. They promoted self-dependence through KHADI and village industries.

The R&D institutions developed by the British for taking care of agricultural and

rural industries included: The Imperial Agricultural Research Institute, Pusa; Indian Veterinary Research Institute, Mukteshwar; Dairy Research Institute at Bangalore; Poona Agriculture College; Public Agriculture College, Saidapet (Madras); Sibpur Engineering College (Bengal) etc. Horticultural Research Station was created at Chaubatia (U.P.) in Kumaon Hills for horticultural research including packaging and transportation improvements. Post independence era in India witnessed rapid growth in agro processing sector specifically during 1980s. It followed the first phase of the Green Revolution that had resulted in increased agricultural production and the need for its post harvest management.

The importance of the sector was realized by the business community leading to diversification from grain trading to processing. Lead was given by the rice processing industry, followed closely by wheat milling, paper and pulp industry, milk processing sector, jute industry, sugarcane processing and oils extraction through solvent plants. In some areas like the solvent extraction industry, the growth in installed processing capacity has been far higher than the supply of the raw materials.

However, in other areas like fruits and vegetable processing, the growth has not been encouraging on account of poor demand for processed products by the consumers. In such cases, the industry has also not been able to develop the demand adequately.

Table 1. Production status change over last fifty years

Commodity	1950-51,	Mt Mt
Food grains	50	206 (99-2K)
Oil seeds	5	24.5
Fruits	12	41
Vegetables	10	72
Potatoes	1.7	25 (24.2) (1998)
Onion	1.0	5.5 (4.75)
Mushroom		40 kt
Livestock & Poultry		
Milk	17	78 (99-2K)
Meat	0.7 (1971-72)	4.6
Eggs	10 bn(#) (1980-81)	30 bn(#) (99-2K)
Fish	0.75	5.6 (99-2K)
Marine		2.9
Fresh water	2.7	
Honey	0.7 kt (1963-64)	5.5 kt
Coconut	4.5 bn(#)	15 bn(#)
Spices		3
Sugarcane	57	309.4
Certified seeds		0.75
Lac	40 kt	20 kt
Fibre crops		
Cotton	0.7	2.5
Jute	0.67	1.67
Coir	0.13 (1954-55)	0.34
Wool	32 kt (1980-81)	45 kt

Trends In Agricultural Production

At the start of the twentieth century, Indian agriculture was in a stage of subsistence. By the year 1925-26, the total area under some major crops in undivided British India was: rice – 32 mha, wheat – 9.6 mha, sorghum – 8.2 mha (Royal Commission on Agriculture (1928). The yields were very low. In the year 1950-51, India produced only 50 million tonnes of food grain and a variety of other crops. By the year 2000-2001, India started producing about 700 million tonnes (Mt) of biological materials per year including food grains, oilseeds, fruits, vegetables, sugarcane, milk, eggs, meat, fish, tea, coffee, fiber crops, floricultural produce, forest produce and so on. The country has diverse agro-climatic conditions and consumer preferences and hence it produces a vast variety of agricultural and livestock materials.

Table 1 gives the change in agriculture production over the last fifty years. As could be seen, India holds a major share for some of these products in the global context. However, their market potential is not being fully realized due to poor post harvest management and inadequate infrastructure and programme for processing of agro-produce.

Extent Of Post Harvest Losses

On account of poor post harvest management, the losses in farm produce in India have been assessed to be of a very high order. Various studies have estimated post production losses in food commodities to the tune of Rs. 75,000-1,00,000 crore per annum. Table 2 provides a view of the extent of losses and the monetary value of the lost produce in terms of quantity and quality. It may be mentioned that the estimated loss includes losses during storage, handling and milling/ processing. It does not include losses at consumer's end. It is also estimated that the extent of losses could be brought down to less than 50 per cent of the existing level on proper transfer and adoption of agro processing technology. For reducing the rest of the losses, new initiatives need to be called for. Hence, it would be in the long term interest of the economy to invest in developing suitable infrastructure such as proper grain storage structures, cold stores and processing systems to avoid the losses.

Among large number of technologies developed, the most popular ones include:

1. Agriculture produce refinement equipment such as, cleaners, graders and driers for on-farm operations as well as industrial operations.
2. Processes and equipment for parboiling of rice, preparation of puffed rice and flaked rice.
3. Development of processes and equipment for processing of pulses to produce dhal for higher recovery and better quality.
4. Development of driers using agricultural residues, by-products and solar energy.
5. Adoption and development of processes, and equipment for production of protein rich produces such as full fat soy flour, soy drink/ soy milk, soy paneer (TOFU) and soy fortified baked products.

Table 2. Present level of production of different types of food commodities and their estimates of post-harvest losses

Type of food commodity	Present level of production			Post-harvest losses		
	Quantity (Mt)	Average price (Rs/t)	Value (Rs. in Crore)	%*	Quantity (Mt)	Monetary value (Rs. in Crore)
1. Durables (cereals pulses, oilseeds, etc.)	230	10,000	230,000	10	23.0	23,000
2. Semi-perishables (potato, onion, sweet potato, tapioca etc.)	40	3,000	12,000	15	6.0	1,800
3. Perishables (fruits, vegetables, milk, meat, fish, eggs etc.)	210	15,000	315,000	20	42.0	63,000
Total/Average	480	11,604	557,000	14.8	71.0	87,800

** On a conservative scale*

6. Development of equipment such as, leaf cup and *dona* making machine, multipurpose mills, mini flour mill, grain pearlers, maize dehuskers, shellers, groundnut decorticators, fruit graders, juice extractors, high recovery mechanical oil expellers and improved storage structures for cereals, pulses, oilseeds, onion and potato.
7. Processes and equipment for production of high quality ground spices and spice mix, development of raw materials and processes for production of instant sweets, curries, snack foods, instant soft drinks, *idli, dosa, sambhar* mixes/powders, egg powder, production and packaging of milk products such as *shrikhand*, butter milk, *paneer, ghee* and sweets.
8. Equipment for high recovery of sugarcane juice, processes for production of high quality jaggery and liquid jaggery.
9. Processes, equipment and pilot plants for production of various industrial raw material from lac including dyes and pharmaceutical products.
10. Improved technology for processing of jute sticks to yield jute fibre and impregnation, preparation of jute based textile materials and bags.
11. Control of stored grain insects by using chemical and physical methods, storage structures for onfarm, trade, and process plant level operations.
12. Processing and canning of meat, meat products and fish. Some work has also been done in the area of processing forest produce such as oil extraction from oil bearing materials, collection and processing of resins and production of dyes, chemicals and pharmaceutical products. The latest developments have been in the area of floriculture. Due to high export potential, R&D work has been initiated at some centres on pre-cooling, packaging, and transport of cut flowers and low cost designs of green houses. Agro-processing models have also been developed for some of the agro-climatic regions in the Country.

In the area of agro-processing of fruits and vegetables, development of tools and techniques for harvesting, precooling of freshly har vested produce, minimal processing, controlled ripening, juice extraction, concentration and storage has been done. Similarly, in the area of spices & condiments, floriculture, production of mushrooms, honey, eggs and fish, technologies have been developed for post harvest loss reduction and value addition.

Growth Of Agro Processing Sector

Starting with a small number of processing facilities in 1950-51, a fairly well spread network of processing facilities has developed in the Country. Various estimates suggest the number of processing units in 2000-2001 as: atta chakkis and small hammer mills - 2,70,000, rice hullers - 90,000, rice shellers - 11,000, huller-cumshellers - 12,000, modern rice mills - 30,000, bullock/ electricity operated oil ghannis - 2,00,000, oil expellers - 55,000, dhal mills - 12,000, roller flour mills - 700, rice flaking and puffing units - 2,000, bakery units - 54,000, solvent extraction plants - 700, vanaspati plants - 100, fruits and vegetables processing plants - 5,000, dairy plants - 450, cold storage units - 3,000, licensed units in organized sector for meat processing - 165, pork processing units – 144, fish processing units - 18 and so on.

Major problems faced by these units have been:

(a) Low capacity utilization

(b) Poor recovery of the finished product from the raw materials

(c) Problems of arranging adequate working capital and its management

(d) Low product quality

(e) Unreliable assured power supply.

Strong R&D support will have to be continued to over come these and many other problems to ensure that our agro-processing technology becomes competitive at the global level. As stated earlier, inspite of the problems, agro-processing technology in India has continued to make steady progress towards modernization. Table 3 gives information of the latest development trends in respect of major crops/crop groups.

Crop and Commodity Wise Status of Agro-processing Industires and Problems

The commodity-wise growth of agro-processing industries in the country during the years 1950 to 2000 has been as given below.

Rice Processing Industry

Starting with 20.6 Mt of rice production during 1950- 51, the country has come a long way to produce about 89.48 Mt of rice in the year 1999-2000. Similarly, in processing sector, the technology has undergone significant changes. Earlier, hand pounding, pedal operated system and Engleberg huller units were common for milling of paddy. By the year 1998-99, there were nearly 30,000 modern rice mills using rubber rolls for paddy dehusking. Of these, more than 5,000 are large rice mills with parboiling facility and nearly 100 have colour sorters for removal of discoloured rice for export market.

Innovations in rice processing include improved process of parboiling developed at IIT, Kharagpur; CFTRI, Mysore; PPRC, Thanjavur and other R&D centres. Starting from sun drying, the technology for drying of paddy now includes use of a variety of driers, specifically for parboiled paddy. Continuous flow LSU type driers have been most commonly used units followed by tray driers (batch type). Thermic fluids are used as medium of heat transfer for heating the air used for drying in a large number of rice mills. Though efforts have been made to improve the rice hullers, limited success was achieved in improving their performance with respect to reduction in broken percentage. Rubber roll technology for dehusking has now been well established. Efforts are ongoing to find use of tafflon to replace rubber rolls for economy.

Several types of rice bran stabilizer have been designed and tested. Chemical method developed at CFTRI, Mysore; steam heating at IIT, Kharagpur, electrical heating method developed at Pantnagar could find limited applications in Industry. Stabilization through extrusion technology has also been tried with limited application of expanders. Among most common value-added products of rice include puffed and flaked rice used as snack foods. Rice and wheat form the major part of government operated procurement system and storage. In the month of March 2001, the total stocks of rice and wheat in FCI/ CWC and other government owned godowns were about 35 million tonnes for the public distribution system, for processing industry and for future use.

SWOT Analysis of Agro-processing Industry Infrastructure in India

Strengths

1. Round the year availability of raw materials.
2. Social acceptability of agro-processing as important area and support from the central government.
3. Vast network of manufacturing facilities all over the country.
4. Vast domestic market.

Weaknesses

1. High requirement of working capital
2. Low availability of new reliable and better accuracy instruments and equipments
3. Inadequate automation w.r.t. information management.
4. Remuneration less attractive for talent in comparison to contemporary disciplines.
5. Inadequately developed linkages between R&D labs and industry.

Opportunities

1. Large crop and material base in the country due to agro-ecological variability offers vast potential for agro processing activities.
2. Integration of developments in contemporary technologies such as electronics, material science, computer, bio-technology etc. offer vast scope for rapid improvement and progress.
3. Opening of global markets may lead to export of our developed technologies and facilitate generation of additional income and employment opportunities.

Threats

1. Competition from global players
2. Loss of trained manpower to other industries and other professions due to better working conditions prevailing there may lead to further shortage of manpower.
3. Rapid developments in contemporary and requirements of the industry may lead to fast obsolescence.

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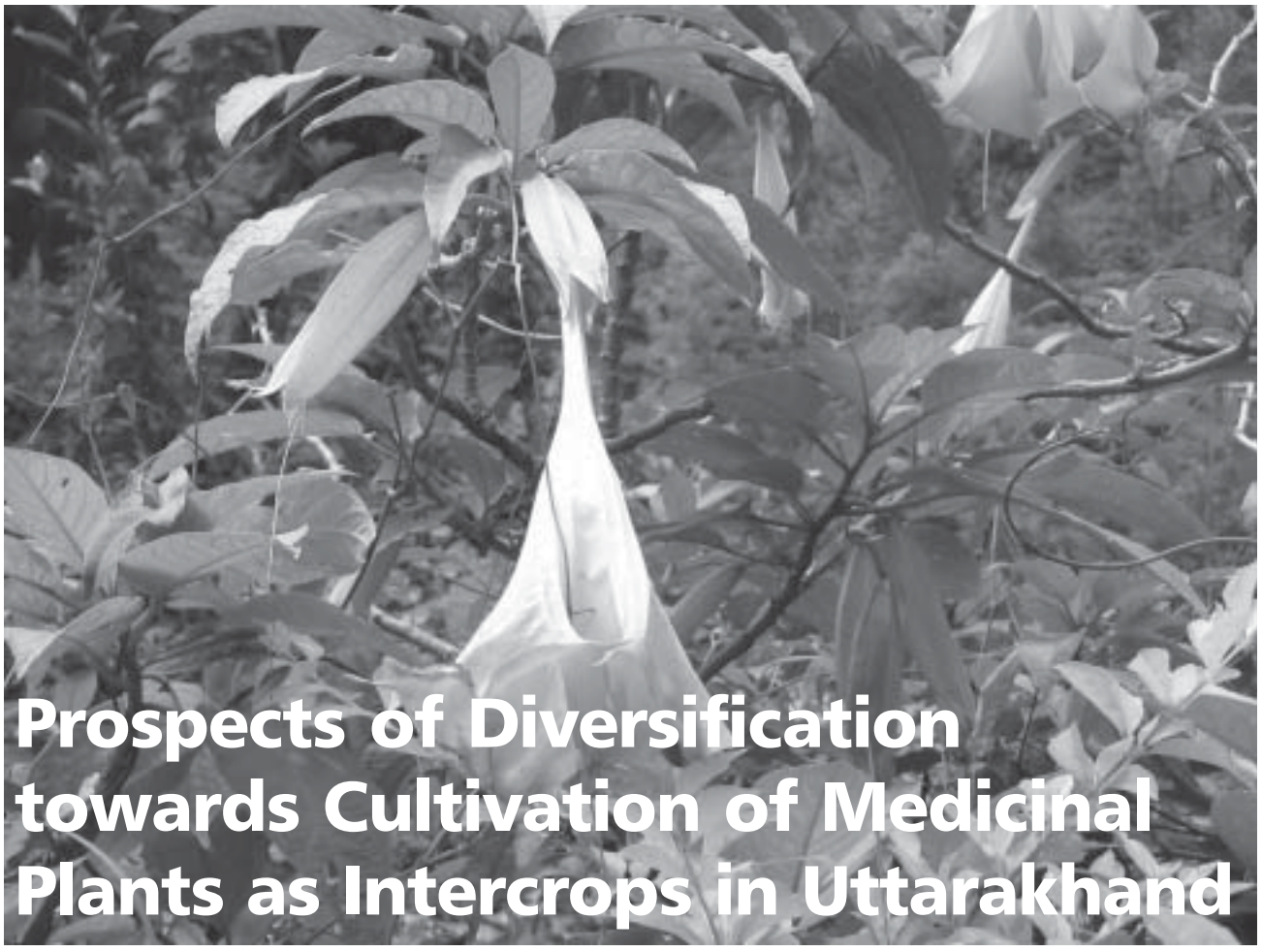


Prospects of Diversification towards Cultivation of Medicinal Plants as Intercrops in Uttarakhand

By **Harjeet Singh*, V.N. Singh** and Ashwani Kumar Sharma*****

The production of cereals is surplus in Uttarakhand, the State Government is giving a thrust towards crop diversification, the decision of the farmers to go for crop diversification is influenced by factors like weather conditions, price support, market intervention, risk factor and relative profitability of these crops vis-a-vis the other crops. Diversification and sustainability in production are two major goals which offer an opportunity to explore the possibility of growing commercial tree species with high value crops (HVCs) such as medicinal plant species on the farmlands without compromising the quality of either products. The existing land use systems with separate allocation to agriculture and forest are not adequate to meet these demands. The shift to agri-horticulture (agriculture + fruit trees), agro-forestry (growing trees + crops), horti-medicinal (fruit trees + medicinal crop) cropping models provide a viable option to these systems with opportunities to diversify as well as increase overall productivity. ***Thus, it is important to explore the prospects of successfully growing important medicinal plant species as intercrops with traditional cropping system to boost incomes of farmers, besides improving the long-term sustainability of the system itself.***

The production of cereals is surplus in Uttarakhand; little wonder that that the State Government is giving a thrust towards the production of exportable quality of Basmati rice. In the hilly regions because of rain fed conditions, special attention is also being given to diversification of crops from cereals to pulses, oilseeds, low volume higher value crops like off-season vegetables, floriculture, medicinal and aromatic plants for improving the economic condition of the farmers.

The diversification of existing cropping patterns coupled with development of suitable technology packages are required to cope with the increasing demand for an array of agricultural, horticultural, medicinal and aromatic plant cropping systems. The wealth of information available on optimizing traditional agricultural and forestry systems has undoubtedly, helped to maximize the productivity, but the rising population coupled with falling productivity, land degradation, soil erosion, loss and over-use of cultivable land are some major constraints for attaining sustainable production. The existing land use systems with separate

allocation to agriculture and forest are not adequate to meet these demands. The shift to agri-horticulture (agriculture + fruit trees), agro-forestry (growing trees + agricultural crops), horti-medicinal (fruit trees + medicinal crop) cropping models provide a viable option to the traditional systems with opportunities to diversify as well as increase overall land productivity. It is necessary to develop viable, acceptable, diversified and sustainable cropping systems, which would ensure enhanced crop production by maximizing utilization efficiency of the available resources.

Diversification Recognized as an Important Instrument

Diversification can be a useful means to increase crop output under different situations. The integration of medicinal and aromatic plant species on the farmland paves the way for the improvement and diversification of existing systems. It offers an opportunity to explore the possibility of growing commercial species with high value crops (HVCs) of medicinal and aromatic plant species such as Kesar *(Crocus sativus)*, Kutki *(Picrorhiza kurroa), Sarpgandha (Rauvolfia serpentina), Bach (Acorus calamus), Kuth (Saussurea lappa) and* Lemon grass *(Cymbopogon flexuosus)* on the farmland in different parts of the State.

Economic feasibility provides the main rationale to bring a species under cultivation unless of course sufficient quantities of the material can still be obtained at a lower price from wild harvest. Cultivated material will be competing with the material harvested from the wild that brought in the market by commercial gatherers who have incurred no input cost for cultivation. However, there is need for domesticating and varietal upgrading of the wild colleted species for commercial production to meet the demand of the local and international market and industry.

Considering this, crop diversification has been recognized as an important instrument through which the farmers can grow the best profitable commodities on their land and earn reasonably. For this, they should be aware as to which commodities are suited to their locality and will bring more profits for them. They should also know as to how these commodities can be produced efficiently and sold in the markets, both national and international levels.

The chief advantages of crop diversification are:

- Comparatively high net return from crops
- Higher net returns per unit area
- Optimization of resource use; and
- Wasteland utilization efficiency

Public Private Partnership

A partnership approach needs to be developed between banks, buyers, R&D institutions and the farmers to achieve this goal. The institutes should take lead in providing the technical expertise for making plant inventories, developing agro-technologies and processing techniques. Banks should design marketing strategies based on studies launched by them, and the farmers should form community groups for cultivation and primary processing. The objectives of the partnership should be conservation, development, harvesting and trade in case of medicinal plant species. A lot of options in selecting the agricultural commodities are available, owing to favourable climatic features. There is an acute need to develop innovative and viable crop combination for various location specific situations.

State Govt. Supportive Polices

There have been many State interventions and supportive policies for crop diversification towards the cultivation of commercial, horticultural,

medicinal and aromatic plant species. For example the policy on marketing and credit; as well as programmes for poverty alleviation, creating local job opportunities, greening of barren lands, establishing facilities for transportation of produce, irrigation, storage and other infrastructure. Cumulatively, these approaches are bound to help in re-organizing and strengthening agriculture and forestry research institutes as well as improving the rich systems of agriculture and forestry extension organizations.

Major Challenges

The biggest constraints that tend to limit crop diversification are high cost of inputs and low quality of produce owing to the use of archaic technologies, often resulting in low benefits. It is necessary to invest in research for developing not only improved varieties, but also better agro-techniques that can enhance the potential of varieties. More attention needs to be paid to techniques that do not require expensive inputs. Farmers should also be encouraged to adopt measures to reduce crop duration besides raising off-season crops. It is necessary to reduce the area under paddy in order to enable farmers diversify towards high value crops. To motivate the farmers in this regard, there is need for public investment in (a) marketing infrastructure to increase the trade value of alternative crops and (b) value addition through improved processing.

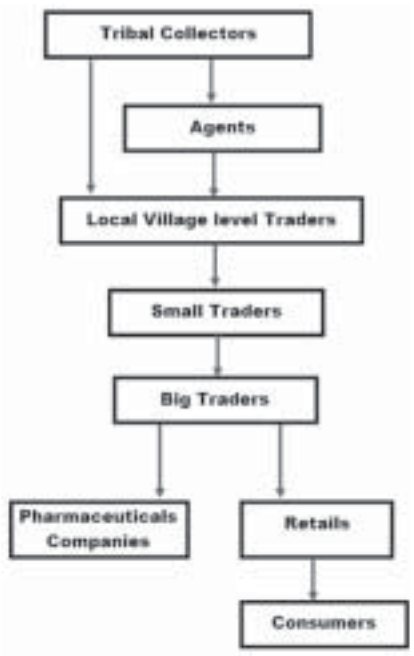
Opportunities for Crop Diversification towards Non-traditional Crops

For cop diversification, both climate and geography of the State are favorable for growing a variety of high value crops suited to different regions which offer a wide scope for diversification leading to all-around agricultural development. Immediate need is to motivate the farmers for diversifying their cultivation practices from growing traditional high volume – limited return crops to high value crops using climate factor judiciously for crop selection.

(i) Medicinal and Aromatic Plant species

The existing marketing structure for medicinal plants in the country is unorganized to a great extent. The market is dominated by middlemen. Government is trying to improve the marketing system through regulations and creation of infrastructure. However, the measures being taken still seem to be inadequate. Furthermore, as the question of livelihood is associated with decision to reduce the dominance of the middlemen from the market, it is desirable that a proper balance is achieved. In this regard the following approaches deserve to be considered :

1. **Establishment of Regulated Markets:** A regulated market is a place where transactions are governed by various rules and regulations framed by local bodies through State Legislation. There are certain rules and regulations in the medicinal plant market also but these are not implemented properly. As such it is desirable that the Govt. makes more efforts to monitor the trade of medicinal plants. ***Flow chart indicates the current marketing channel are as follows:***



2. **Buy-back Policy:** This may prove to be one of the most effective measures to reduce the dominance of the middlemen in the market as well as exploitation of the farmers or primary collectors of medicinal plants. The main problem farmers face in cultivation of medicinal plants is that they get very poor return from selling their products. Due to no direct contact to the market they have to sell their product to the village agents at a rather low price. In this way the medicinal plant cultivation has become less attractive for the farmers. As long as they are not given any assured market, their problems remain unapprised. In this context, the buy-back policy will be of great help for the farmers. In buy-back policy what normally happens is that Govt. or private organization signing a contract with the farmers that farmers will grow medicinal plants on their land and these organizations will buy their produce at the price prevailing in the market. In many parts of the country this buy-back policy has been adopted with good results. In Gujarat, the Zhandu Pharmaceuticals have taken initiatives in this regard. The company is providing propagules of medicinal plants to the farmers and buying from them the ready product at a fixed price. Wimco has done the same with regard to the tree plantation in a number of districts of Uttar Pradesh and Uttarakhand including Bareilly, Budaun, Shahjahanpur and Pilibhit. Now the scenario is changing in Uttarakhand as well. In village Gheas, the **High Altitude Plant Physiology Research Institute Centre (HAPPRC), Srinagar, has taken initiative in this direction and provided buy-back guarantee to the cultivators through Delhi based pharmaceuticals. Under the technical guidance of HAPPRC, the villagers are cultivating two prominent herbal plants *viz Picrorhiza kurrooa* (Kutki) and *Sassurea lappa* (kuth) in their barren lands.** These efforts should be encouraged to streamline the marketing system of medicinal plants in the State. ***In this context the scheme for the development of commercial cultivation of MAP being implemented by National Medicinal Plants Board is a commendable initiative as it links production with assured buy-back arrangements.***

3. **Channelisation in the Market Facilities:** The Chamoli, Uttarkashi, Pauri and Pithoragarh are the main

districts where economically important medicinal plants are available due to high altitude in these regions. However, the main markets for crude medicinal plants are Dehradun, Ramnagar, Tanakpur and Haridwar which are far away from these districts. This disadvantage affects them greatly and leads to dependence on the middlemen. Thus improvement of road facilities is a long-term strategy and it should take into account a lot of parameters. However, it leads to numerous advantages that can be derived by shortening and speeding up the marketing channel. The development of road infrastructure will lead to three-fold advantages *viz:*

(i) Cheaper transports enable rural people to reach larger centers to sell their products.

(ii) Better price realization is possible through direct contact with the market dealers.

(iii) Minimum middlemen dependence in the market channel.

The lack of marketing institutions and infrastructure has to be dealt with immediately by the Government. The objective of this policy should be to provide farmers with alternative options to sell their products, so that the portion of the profit now going to the middlemen is minimized and the farmer gets a better price for his produce. There are three types of institutions that the Government needs to create or strengthen for this purpose.

1. Herbal Research and Development Institute (HRDI) and Uttarakhand Forest Development Corporation (UKFDC) that will help, particularly the small and marginal farmers, to grow medicinal and aromatic crops and market them at remunerative prices.
2. Strengthen the farmers through cooperative associations and encourage them to corporatise themselves so that they can employ professionals to help them market their products.
3. Allow and encourage contract farming between the farmers and processors of medicinal plant-based pharmaceutical industries so that the role of the middlemen can be minimized.

It must be understood that whereas the first institution, i.e. the marketing board, should primarily target the poor and marginal farmers, the medium and large farmers can use the second and third category of institutions more effectively. It may be useful to point out, that though the State has been declared an **"Organic State"**, it will be useful to the farmers only when the produce can be marketed at a high price with the help of organic certification.

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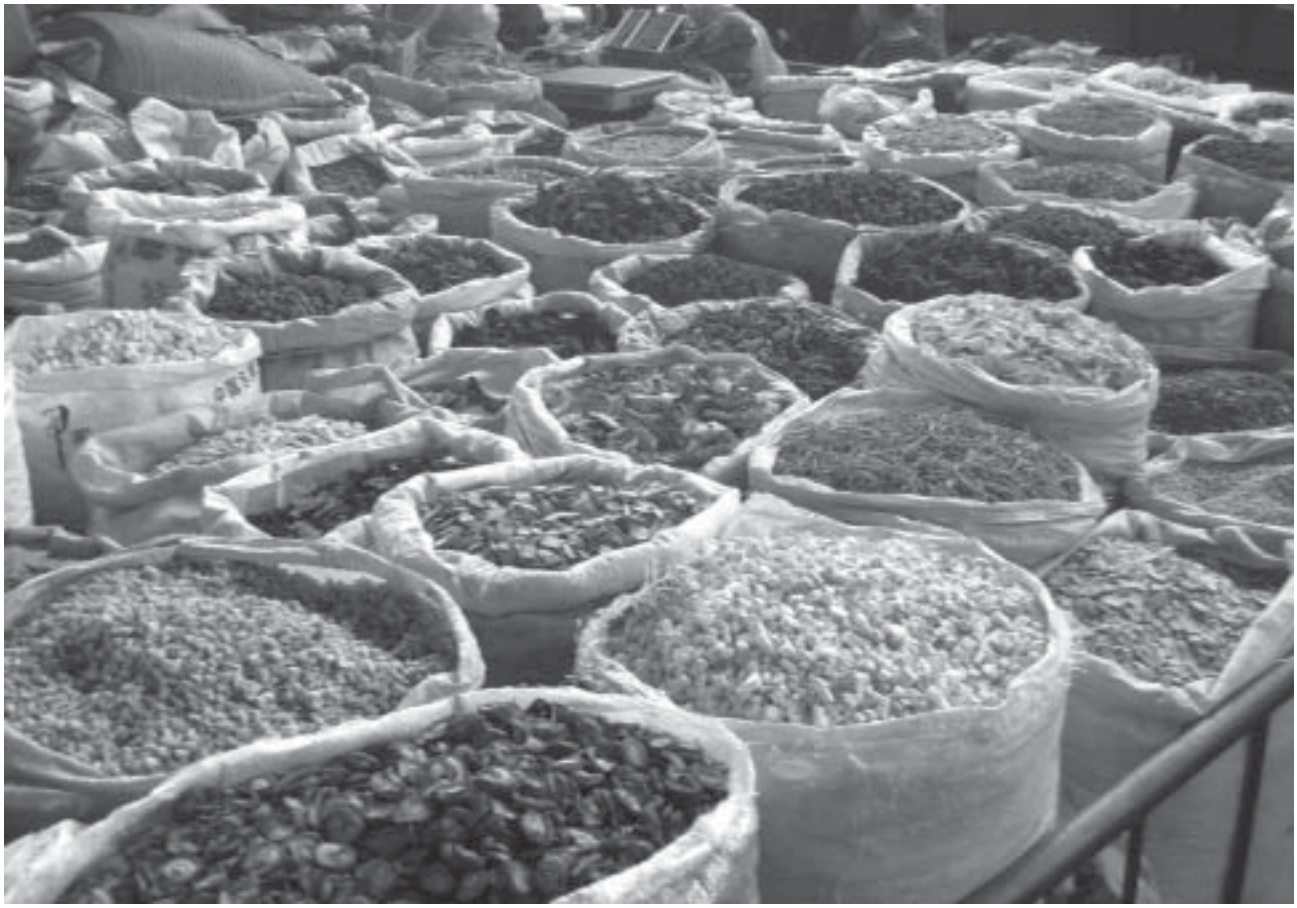

Way to Financial Inclusion & Beyond

By **Subah Singh Yadav***

Financial Inclusion is a process which has really ignited optimum & rays of hopes amongst under privileged & disadvantageous sections of the society who have been hitherto excluded from banking stream for Centuries together. Now the time is ripe enough to craft appropriate strategies to line up suitable programmes for promoting inclusive growth with a shared understanding amongst different agencies as also simultaneously up – scaling developmental programmes to target these groups who have not able to access adequately financial services from the organized financial system.

The process of financial inclusion which flashed on the horizon of Indian economy in the wake of Millennium Development Goals has after crossing tides of time, has come to stay to some extent. India is amongst the first few countries which pioneered towards financial inclusion. The inclusive growth as a strategy of economic development received attention owing to rising concern that economic growth has not been equitably shared. The Eleventh Five Year Plan, interalia envisages inclusive growth as a key strategy by encompassing hitherto excluded population and explicitly creating economic opportunities for the poor and vulnerable society.

The way to financial Inclusion is essentially paved through promoting & developing culture of saving and efficient payment mechanism, strengthening the resource base of the financial institution which benefits the economy are become available for efficient payment

***Shri. Subah Singh Yadav**, Chief Manager, Training Centre, Bank of Baroda, Lucknow was awarded **"Indira Gandhi Purushkar"** by His Excellency Vice-President of India Shri.M.H.Ansari for his original work **"Bank Credit & Development"** in a glittering ceremony at Vigyan Bhawan, New Delhi on 14th September, 2010.*

mechanism and allocation. The empirical evidence shows that countries with proportion of population excluded from the formal financial system also show higher poverty ratio. The way to financial inclusion in India, can broadly be classified in three categories:

1) Where the focus is on canalizing of credit to the neglected sectors of the economy. Bank nationalization marked a paradigm shift in the focus of banking and it was intended to shift the focus from class banking to mass banking. RBI encourages banks to open branches in the un – banked and under banked areas. A lot of emphasis has been placed on the efforts to achieve interalia financial inclusion and other policy objectives. Some of the initiatives taken to these effects can be heavily underlined here:

a) State Bank of India Act, 1955

b) Bank Nationalization (1969/1980)

c) Lead Bank Scheme (1969)

d) Setting up and Regional Rural Bank (1976)

e) Setting up NABARD (1982)

f) -20- point Programme for Bank (1975)

g) Branch expansion policy favoring Rural/Semi urban branches

h) Compulsion for opening branches in North East Region

i) Target for priority sector advances.

j) Advance to women, SHGS, education, loan, no frill accounts

2) Second way focuses mainly on strengthening the financial institutions within the broad framework of reforms Financial Inclusion in this phase was encouraged mainly by introduction of Self Help Ggroup linkages programme in the early 1990s and Kisan Credit Cards (KCC's) for providing credit to farmers SHGS programme is a hybrid channel having policy orientation to facilitate collective decision making by the poor 7 provide' door step banking. Banking correspondents and banking facilitators are also potent mechanism these days. There stand a sheer need to explicitly make it as a policy objective and thrust should be on providing saving deposits on no frill accounts. Well designed poverty alleviation programmes, if effectively by implemented, not only supplement the positive effects of growth, but also could promote pro poor growth. There is need to design financial instruments that would reduce their risk and vulnerability whether it is for smoothing incomes or ensuring higher education and reducing exposure to health shocks.

3) In the context of Financial Inclusion the scope of financial education is relatively broader and it acquires greater significance since it could be an important factor in the very access of such excluded groups to finance. Further the process of education may invariably involve addressing deep entrenched behavioral and psychological factors that could be major barriers. However the complementary relationship between microfinance and financial education is obvious and financial literacy can increase the decision power and prepare them to cope with the financial demands of daily life financial literacy is particularly relevant for people who are resource poor and who operate at the margin and vulnerable to persistent downward financial pressure. With no established banking relationship, the un – banked poor are pushed towards expensive alternatives. The challenges of household cash management under difficult circumstance with few resources to fall back on could be accentuated by the lack of skill or knowledge to make well informed financial decisions. Financial education can help them to prepare ahead of time for life circle needs and deal with unexpected emergencies without assuming unnecessary debt.

Government should promote introduction of basic banking – relevance, services, merits as a topic in higher secondary classes in all educational institutes likewise Govt. sponsored publicity companies through all medias- radio television, newspapers, e – chopal; village Panchayats, movies, puppet show etc be arranged.

Looking beyond existing process of Financial Inclusion

We reiterate that the benefits of economic buoyancy has not percolated to the vast segment of population particularly 300 million people living the below the poverty line, despite the implementation of various developmental programmes. On one side, financial inclusion system is globalizing and on the other side, large segment of the population do not have access to even basic banking services. Under the circumstances implementation of financial inclusion programme has though made a dent on poverty, yet we had to go extra miles from "Microfinance to Micro enterprises"

i. There are several rural and urban development programmes promoted by the Govt. to eradicate poverty. If banks are also made an effective intermediary, greater financial inclusion could be one of the meritorious outcomes. As some of the project become successful and self sustaining, greater financial inclusion would become possible. But the Govt. would have to do its homework thoroughly to identify projects where intermediation by banks is possible. The benefits would percolate not only to target population but to banks also and the good economics will prove good politics for the country.

ii. On analyzing in depth the under pinning of financial exclusion in India and going through the success stories of UK and USA, and interacting with NGO's mainly operating in different states of Central India, it becomes obvious that we have to continue with our tireless endeavor to combat monsters like illiteracy poverty, ignorance, cultural and psychological hurdles and simultaneously design innovative, lucrative and low cost banking products and services to lure public to join main stream

iii. Interactive awareness, education and promotion drive are must to create and in depth impact on masses. Government should promote introduction of basic banking – relevance , services, merits as a topic in higher secondary classes in all educational institutes likewise Govt. sponsored publicity companies through all medias- radio television, newspapers, e – chopal; village Panchayats, movies, puppet show etc be arranged. On the other hand Bank should design and organize aggressive education cum promotion campaigns in un – banked parts of urban, semi urban and awareness as well as to remove the doubts and apprehensions that the masses have towards the banking sector.

iv. Expand outreach in remotest corners Banks should involve well informed local inhabitants in such activities. This will help the banks to consolidate and ensure prompt and extensive response from populace Banks should gather support from the NGO's, retired bank personnel academic institutions to reach the desired number within a limited span of time once the fallacy is removed from the minds of general public, they automatically will join the main stream. The all round awareness and education simulation will drive them to open saving and current accounts. This will make the beginning of basic banking in true sense.

v. There remains a need to achieve the growth with equity over the long term. This requires policies and programmes that faster the participation of the poor in the process of economic growth by creating employment opportunities and by increasing their access to income generating assets and by raising the productivity of their assets, both physical and human. There is a strong belief that, if efficient provided, financial services may play an important role in the task of incorporating some of the poor to processes of economic growth in most poor Countries.

There is equally a need to mitigate the transitional cost of adjustment for the most vulnerable groups to the society. Formal financial services can play a limited role in this effort, if any. Other fiscal mechanisms provide a more cost effective approach to assist those unfortunate who have no productive opportunities and therefore no doubt capacity.

Conclusion

Financial Inclusion along with the developmental programmes will have to direct its efforts towards credit plus approach also. The future lies with those organizations that see the poor as their customers with increasing liberalization and higher economic growth, the role of banking sectors is poised to increase in the financing pattern of economic activities within the Country. While we should be in pursuit of new ways to financial inclusion with boundless curiosity, there is also a sheer need to look beyond the existing delivery channels and enhance bouncy of banking sector.

**The Writer is Chief Manager, Training Centre, Bank of Baroda, Lucknow*

AGRI NEWS

Discussion on Urea Decontrol on Jan 20

According to a release - A Group of Ministers (GoMs) is expected to discuss threadbare the much-awaited policy on urea decontrol at its scheduled meeting on January 20.

A govt official later made a statement that "A GoM has been convened for discussing things related mainly to urea. The GoM will discuss whether to extend the Nutrient-based Subsidy (NBS) scheme to urea or go on with the existing New Pricing Scheme (NPS) with some modifications." It may well be noted that urea constitutes almost 50 per cent of India's fertilizer consumption.

Although with the introduction of the nutrient based subsidy scheme, with effect from April this year, the government has freed potassic and phosphetic fertilizers. However, in the case of urea, including its price and movement, it is still controlled by the government.

The fertiliser industry has now been pressing the government to decontrol the urea sector in line with the potassic and phosphetic fertilizers.

It has said that decontrolling the sector would not only encourage entrepreneurs to invest in the sector but also ensure better fertiliser supply to farmers.

In a turn around of events a source revealed that the Fertiliser Department, however, is believed to be not in favour of decontrolling the urea sector.

Fertilizer Secretary Sutanu Behuria had said last month that "we want to make sure that the price does not go to an extent where the farmers cannot buy the fertilizer," Besides, the Department fears that it would not be fair for manufacturing units in the existing heterogeneous urea industry where cost of production varies from one unit to the other.

The production cost for urea depends upon plant vintage, feedstock and the level of energy consumption.

The Fertiliser department thus favours an extension of the existing New Pricing Scheme (NPS)-III with some modifications for urea, which include fixing a price band and allowing domestic industry and importers to sell the fertiliser within that band, which may be anything between 2-5 per cent more than the current price of Rs 5,310 per tonne.

However, there are several lacunae in NPS-III which hurt the industry. These include non-recognition and non-updating of genuine costs, delay in notification and disbursement of subsidy, non-reimbursement of a number of taxes and duties which companies was legally bound to pay, according to the Fertiliser Association of India.

Meeting on Sugar Export Delayed

According to an official at the food and consumer affairs ministry said requesting anonymity that the government is unlikely to take a call on freeing sugar exports before the end of December.

India is the world's second-biggest producer of sugar. The domestic industry has been expecting the government to allow unrestricted exports, termed as open general license (OGL), of the commodity since October when the food and consumer affairs minister Sharad Pawar suddenly raised the estimate of the sugar output in the country by 2 million tonnes to 25 million tonnes.

The industry was hoping that the government will allow sugar exports of at least 2 million tonnes in early December, albeit in a staggered manner.

An official with the Indian Sugar Mills Association (ISMA) said the government has frittered away the opportunity as sugar prices have now fallen by about $100 a tonne. Government officials are not ruling out the possibility of allowing sugar exports under OGL by mid-January.

If the government had allowed even 5 lakh tonnes of sugar export in November, the industry would have taken the advantage of the high global prices of the commodity, the ISMA official said.

The government could have always tightened the exports later if it felt that the output was lagging in top sugar producing states of Maharashtra and Uttar Pradesh.

The delay in deciding on sugar exports is believed to have been based on doubts over sugarcane yields from UP after unexpected rains hit the state in October and November. Bloomberg had in November quoted a survey of 810 farmers across six states by Geneva-based SGS SA hinting at an 8.7% reduction in India's sugar output. SGS SA had cited rains, pests and diseases as the reasons behind the expected fall. It had pegged the output at 23.27mt in 2010-11.

AGRI NEWS

Wheat Prices Set to Rise

Wheat is sown in winter, and according to data released by the Crop Weather Watch Group, the area under wheat has fallen by 3% to 207.11 lakh hectares (ha) as against 212.90 lakh ha in the same period last year.

Wheat prices are set to rise in the coming year as unseasonal rains over the past two months and late harvesting of paddy have shrunk the area under the crop.

In a report - lower wheat acreage has been registered, especially in the key wheat-growing state of Uttar Pradesh (UP), where harvesting of sugar has been delayed, partly due to an ongoing tussle between industry and farmers over the State Advised Price (SAP). Wheat is usually sown later in UP compared with Punjab and Haryana, which are the main wheat procurement states for the Centre.

Wheat growing states of Haryana, Chhatisgarh, Gujarat, Himachal Pradesh, Maharashtra, Jharkhand and Karnataka have also been affected by the drought.

According to the ministry of agriculture the fall in wheat acreage is due to late harvesting of contingency crops in drought-hit regions, such as eastern UP, in the summer season.

Wheat harvesting usually begins in November and its marketing starts in March. The current period is considered a lean season for the crop when stocks with the Centre are relatively low and prices in the domestic market are firm. In the past, low acreage in UP had led private firms to buy a good quantity of wheat from the market at higher prices.

In the last financial year, high prices had forced the Centre to sell wheat at subsidized rates to both the bulk buyers and the states. But the pricing was high compared to the market, which pushed up wheat prices across the country even as states failed to pick up the supply. In some southern states, traders found it cheaper to import Australian wheat instead of picking it up from the Centre.

For the Centre, which has treaded cautiously on freeing exports of agricultural commodities, another worry is the drop in acreage of several other Rabi crops. Acreage under pulses and mustard seeds has, however, risen. Mustard seeds have been sown in 62 lakh ha as against 61 lakh ha in the same period last season. Area under pulses is up to 122. 49 lakh ha compared with only 117.79 lakh ha. Winter rice acreage has also dropped to 1.87 lakh ha compared with 3.03 lakh ha in the same period last year.

Winter rice accounts for an average 11-12 million tonnes to the total production. Total food grains acreage has dropped to 383.56 lakh ha compared with higher 391.7 lakh ha same period last year.

Crops not Affected by Temperature Rise – KV Thomas

Minister of State for Agriculture K.V. Thomas said that there has been no major impact on wheat production of the rising temperature in India, differing from what experts from the world over believe that global warming threat looms large over farm productivity.

In a written reply to the Rajya Sabha, Thomas noted that - "there is no major impact observed on wheat production due to rising temperature in the recent past. There has been an increasing trend in wheat production since 2007-08."

Also sighting figures, the minister pointed out that "the wheat production has increased from 78.51 million tonnes in 2007-2008 to 80.71 million tonnes in 2009-10 (as per fourth advance estimates, 2010)."

The minister, however, said that according to the Indian Council of Agricultural Research (ICAR) research project findings on wheat crop there was about three to four percent decrease in grain yield with one degree Celsius rise in temperature during the grain filling stage. He said a number of steps have been taken to mitigate the impact.

"In order to increase the production and productivity of wheat, the government of India has been implementing several crop development schemes," he said.

"Heat tolerance varieties have been popularised on larger scale. Besides, crop advisories are issued to wheat growing farmers for adopting latest crop production/protection technologies; timely sowing; resource conservation technology including zero seed drill; irrigation at critical stages to mitigate the sudden rise in temperature."

Thomas said the ICAR has also initiated networking projects for developing thermal and drought tolerant genotypes that are suitable for changing climatic scenario.

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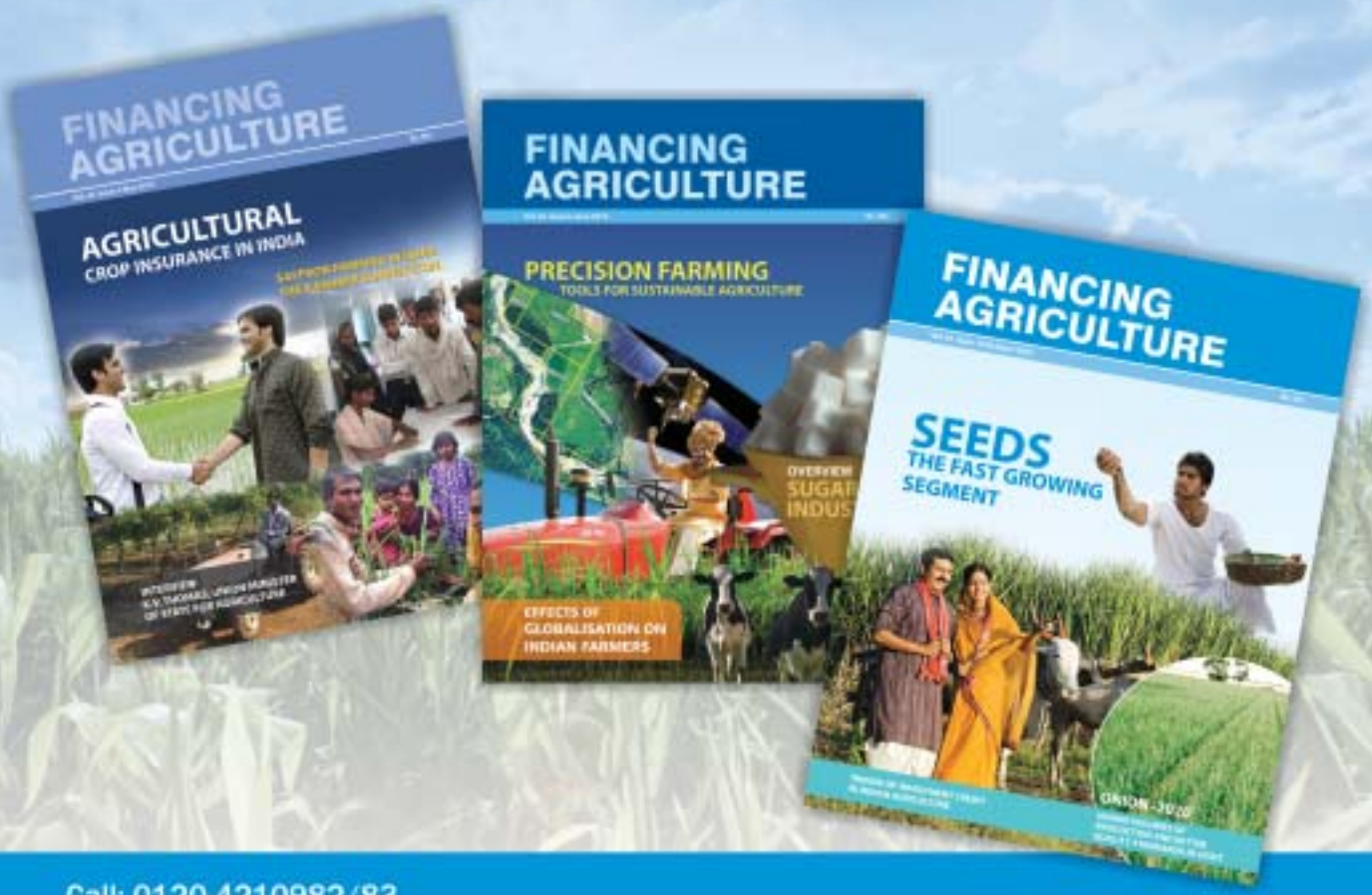

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