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EDITORIAL

Recovery of agricultural loans of cooperatives has become increasingly difficult in recent years. Post ARDR negative sentiments towards timely loan repayment, still lingers on due to defaulter friendly policies of govt and promises of further waivers which have become minimum programme common to political parties during elections. Institutions in the long term cooperative credit structure comprising of State Cooperative Agriculture & Rural Development Banks (SCARDBs) and Primary Cooperative Agriculture & Rural Development Banks (PCARDBs) which are inherently deficient in recovery performance due to their orientation in long term loans with little scope for leveraging recovery through supplementary credit support are worst sufferers of this reverse trend in agricultural loan recovery.

The aggregate overdues of ARDBs are about ₹7000 crores at present. These are funds which otherwise would have been available for advancing loans. About half of this amount represents uncollected interest. ARDBs generally do not collect interest on overdue interest. This acts as a huge disincentive for timely repayment. This also results in combined financial losses of about ₹350-400 crores a year, to institutions in the structure. Recovering a substantial portion of outstanding overdues is key to revitalize the structure.

Loans of ARDBs are secured by registered mortgage of land. Banks are empowered to enforce the mortgage to recover loans without intervention of court. However, ARDBs resort mainly to coercive measures to recover dues. Coercive measures are seen effective only when borrowers anticipate legal recovery measures when dues are not paid at that stage. Coercive recovery measures thus act as effective deterrent against willful default. The unprecedented increase in willful default by rich and influential borrowers cannot be contained without resorting to legal recovery measures. SCARDBs have now been advised to evolve norms for identifying willful defaulters for initiating legal recovery steps. Defaulters having deposit accounts with banks, investments in shares and securities, owning multiple movable and immovable properties of substantial value, earning salary income, having other incomes from trade and business, not making even partial repayment at least once in two years etc. are some of the common characteristics of borrowers who wilfully default repayment.

Legal recovery process involves considerable amount of paper work including issual of a number of notices, at various stages in the procedure prescribed for sale of mortgaged land. The defaulter should be served subsequent notices immediately after completion of the period specified in the previous notice. However, PCARDBs/branches generally are unable to carry out this work expeditiously due to shortage of staff. Federation in this context has instructed SCARDBs to outsource the services of legal advisors in their panel for the paper work involved in the recovery process under a fee based arrangement. Experience of banks shows that defaulters generally clear overdue instalments before recovery process culminates to the stage of sale of security property. In fact, sale of property becomes necessary only in rare cases where the defaulter still persists on avoiding repayment. There are also instances of willful defaulters trying to stall the process by dissuading prospective buyers from participating in the public auction for sale of mortgaged property. Banks should take steps to counter such moves by giving statewide publicity to sail through the network of PCARDBs as well as offices of SCARDBs and encouraging prospective buyers from other areas to participate in the auction for sale and even offering them loan for this purpose.

While legal recovery measures target willful defaulters banks should revamp their policies and procedures relating to loans and recovery to address genuine difficulties in loan repayment faced by borrowers. There should be scope for rescheduling instalments during temporary disruptions in repaying capacity in individual cases, which are generally ignored by ARDBs. ARDBs in many States are subject to pressure from govt against strict recovery measures even in the case of willful default. Non official leadership of ARDBs in some States have not only resisted such pressures successfully but also succeeded in influencing public policies to improve the climate of recovery. Survival of ARDBs now depends on how effectively they can resist such pressures and to meet the challenge of unlocking and recycling the resources locked up in sticky loans.

K. K. Ravindran
Managing Editor

Risk Management Strategies in Financing Agriculture

Shri Benedicto S. Bayaua*

I. Introduction

The agricultural sector plays a significant role in production and food security in developing countries in Asia. It is labor intensive and a big contributor to creation of jobs and employment, particularly in rural areas.

In Thailand, for instance, nearly 78% of its population lives in rural areas, with agriculture as the predominant occupation. While the agricultural sector contributes roughly 10% of gross domestic product (GDP), it however significantly employs more than 50% of the country's workforce. The agricultural sector not only have sufficient agricultural produce for domestic consumption, but also have enough for exportation and contribution to world food security, the country being the world's largest rice exporter (Wajananawat, 2010). In Iran, the agricultural sector also plays a vital role in sustaining the society with adequate nutrition by reducing reliance on foreign sources of food (Rashidi, 2009).

In Mongolia, the livestock sector contributed 18.8% to the total GDP,

provided 10% of export revenues, and employed 36% of the total work force in 2008. Until 1999, the sector provided between 30-40% of the GDP, however due to natural disasters and the development of the service sector, it has decreased dramatically. Mongolia has experienced growth in the livestock sector and compared with the previous year, the number of livestock has increased by 3 million, or 7.5%. Before the end of the last decade, Mongolia had 43.3 million heads of livestock, 46.1% of which are goats, 42.4% are sheep, 5.8% are cattle, 5.1% are horses and 0.6% are camels. These animals obtain 95% of their forage requirements from natural pastures that are owned 100% by the Government. About 98% of the livestock are owned by private-herder households (Dalantainyam, D. 2010).

In the Philippines, the agricultural sector contributes 18% to the GDP. It has varied somewhat in recent years because agriculture in the Philippines is highly susceptible to the effects of El Niño related drought and typhoons. But

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while agriculture's share of the GDP has declined over the years, it remains an important sector as it provides employment to 36 % of the active labor force. Roughly three-quarters of the rural poor depend on agriculture for employment and income (Yedra 2010).

There is a strong connection between agriculture and poverty. Thapa (2011) noted the important role that agriculture can play in promoting economic growth and poverty reduction, citing a World Bank study in 2007 indicating that GDP growth originating in agriculture is at least twice as effective in reducing poverty as GDP growth originating outside agriculture. A subsequent IFAD study confirmed that a "1 % growth in agricultural value added per capita results in a GDP (per capita) growth rate of 2.13 %" (Imai, Gaiha and Thapa 2011).

However, despite strides in productivity and efficiency, smallholder farmers still predominantly face inherent risks in agriculture, both within and beyond their control. Some may have access to financing and markets and may have good repayment reputation, but one or a series of calamities (e.g., weather, natural hazard or disaster) can push them back into the brink of poverty or worse, back into the poverty trap (Wenner, 2011). Thus, poverty is far more extensive and involves greater number in agriculture than in any other sector

in any national economy (Balisacan, 2006).

Despite the tremendous odds and formidable challenges posed by risks in agriculture, rural financial institutions, both public and private, have to devise strategies to manage these attendant risks in the course of their lending. Governments also have to formulate policies and programmes aimed at sustaining productivity and income of smallholder farmers. Since support of governments and rural lenders may come far too little and far too late, smallholder farmers likewise have to exhibit resilience, a dynamic process by which each smallholder family find ways of coping with and meeting head on stress and adversity brought about by risks as well as prepare for and recover from any sudden decline in earnings, loss of meager assets or worse, the loss of a breadwinner in the family.

This paper looks into the risk management strategies that are expected to strengthen smallholder farmers' resilience. It delves, particularly, into the (a) indigenous risk coping strategies of small holder farmers (b) programmes, both public and private, that address production and market risks, and (c) additional risk management strategies of rural financial institutions to address credit risks in lending to smallholder farmers.

This paper has six sections. This section introduces the purpose and

contents of this paper. Section 2 defines smallholder farm households. Section 3 discusses agricultural and rural financial institutions- types and characteristics. Section 4 focuses on sources of risks, informal coping strategies of smallholder farmers and the communities they belong to. Section 5 discusses formal risk management strategies by the government, rural financial institutions and donors. The last section offers some recommendations for future action.

This paper is based mainly on results of the 2010 FinPower CEO Policy Forum on risk management held in Tashkent, the 2010-2011 FAO study (supported by APRACA) on agricultural insurance, the 2005 FAO-APRACA workshop on risk management strategies following the 2004 tsunami disaster and various papers from IFAD, UN-FAO and World Bank. It also draws information from papers of APRACA member institutions and IFAD-supported projects in Asia.

II. Defining Smallholder Farm Households

FAO notes that “agriculture lies at the heart of the development process and smallholders are often seen as the driving force of economic growth, poverty reduction and food security.” It also stresses that “about two-thirds of the developing world's three billion rural people live in smallholder families and that these households form the backbone of the

agricultural sector” (FAO COAG, 2010).

One finds difficulty, though, in fully defining the term, “smallholder farm household”. The most common way, however, on account of ease in measuring, is defining by farm size. India, for instance, defines smallholder farmers as those (small), marginal and sub-marginal farm households that own or/and cultivate less than 2.0 hectares of land, constituting about 78% of the country's total number of farmers (Singh, et al, 2002).

The FAO Committee on Agriculture notes, however, that across countries, “the distribution of farm sizes depends on a number of agro-ecological and demographic conditions and economic and technological factors.” These could include farmers with “low quantities and yields, low capital and education levels, lacking skills to participate in markets, production primarily for home consumption, heavy reliance on family labor and high transaction cost owing to distance from market” (COAG, 2010). Thus, many of these smallholder farm households are poor, food insecure and malnourished, with limited access to inputs and markets (FAO 2011).

Most smallholder farmers are highly risk-averse, work on their farms using methods of production with minimal of inputs, low-quality, low-value outputs and therefore low productivity (Singh,

2010). The move towards high value crops as well as organic agriculture, which can cater to the demands of a special niche and can thus be more high-rewarding, is just starting to be accepted as an option.

Similarly, a small percentage of smallholder farmers elsewhere in Asia are able to extricate themselves from the clutches of poverty based on events beyond their control such as a community's selection as a project site or a company's decision to situate its operations in or adjacent to the community. Likewise, it could be based on implementing an innovation shared by persons (extension workers, agents, traders, researchers) who chance upon or work in a community such as the case of the Thai farmer, who shifted from the usual vegetable gardening to a more profitable turtle raising activity.

IFAD (2010) pointed out in its *Rural Poverty Report* that "landlessness is highest in South Asian countries such as Bangladesh (49.6%), India (22%) and Nepal (10%). In Bangladesh, 69% of the poor and 80% of the severely poor are landless (defined as those with less than 0.2 hectare). Marginal farmers and tenants predominate in countries like Bangladesh, India (where 28% of small scale farmers have less than 0.4 hectare), Nepal and the Philippines. Marginal farmers in rain-fed areas are at the bottom of

the socio-economic spectrum in most countries of the region."

In Asia, terrain has a significant effect on agricultural production and marketing. Most smallholder farm households live in unforgiving landscape. For instance, the agricultural sector is still not fully commercialized in Nepal due to its mountainous topography, sometimes prone to soil erosion and landslides. On the other hand, Thailand and Malaysia can efficiently market their agricultural produce due to easy terrain for land transportation, aside from ease through excellent road and rail networks and in linking to the world through their airports and seaports. The Philippines and Indonesia, while already considered middle-income countries, still have to contend with their thousands of islands, needing longer time for transporting, aside from spoilage of agricultural produce due to more frequent handling, transit and transfer.

Landlocked Asian countries such as Bhutan, Lao PDR, Mongolia, Nepal and several Central Asian countries have inherent disadvantages that impinge on their smallholder farmers' ability and correspondingly to their linked traders and exporters to lower transaction and transport costs. An International Bank for Reconstruction and Development / World Bank (IBRD/WB) study noted that trade is more difficult and costly, since

landlocked developing countries in Asia (and elsewhere) must access foreign markets through transit neighboring/border countries (Arvis, 2011).

IFAD notes the high incidence of poverty among Asian indigenous peoples, known by different names, such as 'hill tribes' in Thailand, 'ethnic minorities' in Vietnam, 'scheduled castes' in India, and 'cultural minorities' in the Philippines. "The rugged terrain and inaccessible places where some rural people live distance them from the source of government assistance and private sector initiatives" (IFAD 2010).

In view of the limited size of land for agriculture and therefore correspondingly limited production, smallholder farm households may sell only part of their produce and consume the rest themselves. Thus, smallholder farm households derive a relatively low proportion of their farm income from marketing their produce. With many dependents, too many mouths to feed and most always with only one breadwinner in the household, sometimes these resulted in using up their savings (if ever there was surplus), day-to-day hand-to-mouth existence and poor quality of food (Singh 2010). Hence, negligible access to or participation in markets and various other constraints significantly limit the benefits that may arise from commercialization (COAG, 2010).

The above main factors and

characteristics put smallholder farm households at an inherent disadvantage.

III. AgriLenders- Types and Characteristics

There are several types of rural financial institutions and credit operators engaged in agricultural and rural finance and, specifically, lending to smallholder farmers in Asia. The institutional structure and broad mix of financial institutions are based on a given country's historical experience, the type of government or economy prevailing, government's agricultural policies, financial infrastructure decisions, the success or failure of original rural financial institutions created at the start of the development of its rural financial systems, and its readiness/capacity to expand the frontiers of agriculture and agricultural finance.

The main lenders are government specialized agricultural banks which are mandated to serve the rural areas, contribute to economic growth and poverty reduction. Their main clients are mostly farmers and other agricultural workers in the rural areas. The Bank for Agriculture and Agricultural Cooperatives is a leader in the field, covering 96% of all rural farm households in Thailand.

Several of these government specialized banks have, in the course of their development, broadened their clientele base to

include non-agricultural rural clients. Examples are Bank Rakyat Indonesia, the State Bank of India, Bank Keshavarzi, Agricultural Promotion Bank and the Agricultural Development Bank of Nepal.

In a unique arrangement, the National Bank for Agriculture and Rural Development (India) has provided refinance to lending institutions in rural areas, bringing about or promoting institutional development and evaluating, monitoring and inspecting its client banks. NABARD also acts as a coordinator in the operations of rural credit institutions, extends assistance to the government, the Reserve Bank of India and other organizations in matters relating to rural development, offers training and research facilities for banks, cooperatives and organizations working in the field of rural development, helps the state governments in reaching their targets of providing assistance to eligible institutions in agriculture and rural development and acts as regulator for cooperative banks and RRBs. In tandem with the then GTZ (now GIZ) and APRACA, NABARD pilot tested the linking banks with self-help groups programme, which later would become the world's biggest outreach and financial inclusion programme (NABARD Website).

Still others have expanded their roles and reformed their institutional structures and

converting them into universal banks, commercial banks or public banks such as Bangladesh Krishi Bank (BKB), Rajshahi Krishi Unnayan bank (RAKUB), Bank Rakyat Indonesia, the Land Bank of the Philippines, Rastriya Banijya Bank, People's Bank of Sri Lanka, Bank of Ceylon, Open Joint Stock Commercial AgroBank of Uzbekistan and Vietnam Bank for Agriculture and Rural Development.

Two examples of creating a government bank for social policies are the Agricultural Development Bank of China, a spin-off from the Agricultural Bank of China, and the Vietnam Bank for Social Policies, a spin-off from the Vietnam Bank for Agriculture and Rural Development.

Through government initiatives, some of the above banks have created smaller banks and financing arms to broaden the client base in the rural areas such as the Land Bank of the Philippines, creating the People's Credit Finance Corporation; the Agricultural Development Bank of Nepal, creating the Sana Kisan Bikash Bank.

Several government banks have acted as wholesale banks providing loans to smaller rural financial institutions and cooperatives. Examples of wholesale financing institutions are the Rural Development Bank of Cambodia to microfinance institutions, Bank Bukopin to cooperatives and Land

Bank of the Philippines to rural banks, cooperatives and other financial institutions serving the rural areas.

Several private commercial banks have likewise expanded their mission to include agricultural lending. Examples are Oriental Bank of Commerce (India), Hatton National Bank (Sri Lanka) and Seylan Bank (Sri Lanka).

State cooperative banks (India), regional rural banks (India, Sri Lanka) provincial cooperative rural banks (Philippines) and small private rural banks (Indonesia, Philippines) have likewise included smallholder farmers as their clients.

Lately, several microfinance institutions have upscaled their lending to include smallholder farmers under their agricultural microfinance programmes. These MFIs include ASA Bangladesh, Amret Cambodia, Prasac Cambodia, Sathapana Cambodia, Seilanithi Cambodia, Ek Phattana Microfinance Institution (Lao PDR), CARD MRI (Philippines), KMBI (Philippines), among others.

Cooperatives also play a big role in agricultural lending. The National Agricultural Cooperative Federation (Republic of Korea), the apex level agricultural cooperative in Korea, has 1,171 member cooperatives, consisting of 971 regional agricultural cooperatives, 118 regional livestock cooperatives, 46 agricultural commodity cooperatives, 24 livestock

commodity cooperatives and 12 ginseng commodity cooperatives, covering a total of 3,274,000 farmer-members (Koh, 2011). Other countries also have either single or multiple national cooperative networks.

Constraints in Lending

Rural financial institutions (RFIs) have very significant roles to play. These roles include as credit providers to enhance productivity through the purchase of agricultural inputs, better equipment and better seeds. RFIs provide savings mechanisms that are safe, secure and where deposits are withdrawable any time and particularly in times of emergency. Savings provides a mechanism for asset creation and provides a fall-back position in times of disasters and calamities. The institutions' modern payment and transfer systems using the latest technology and well-placed rural branches and offices provide swift modes of payment and transfers to supply chain actors, particularly small producers and linked traders.

While rural financial institutions and outreach structures are in place, many smallholder farmer-borrowers, however, still lack access to credit from formal channels. This single factor is a crucial constraint for smallholder farmers in developing countries. This lack of financing limits investment in productivity-enhancing technology and inputs (Thapa 2011).

So why are some banks not lending on a much broader scale? Why do formal lenders avoid agricultural financing? Wenner (2010) provides a host of reasons: "high cost of service delivery, information asymmetries, lack of branch networks, perceptions of low profitability in agriculture, lack of collateral, high levels of rural poverty, or low levels of farmer education and financial literacy. But, predominantly, bank managers around the world say they will not finance agriculture because of the high degree of uncontrollable production and price risks that confront the sector".

The rules and regulations of formal lenders specifying the submission of collateral, particularly land as a buffer against risk of default, indicate that services are provided only to a small percentage of commercial and collateralized farmers and not to a broader agricultural population. Several RFIs, however, have skirted this problem and innovated, with supportive government policies, through the creation of mechanisms such as lending through joint liability groups, business centers and self-help groups.

Despite the attendant risks associated with agriculture, rural financial institutions, particularly the mandated ones, cannot ignore lending to the farming sector as agriculture remains a major economic activity in the rural areas.

Rural lenders have to find ways to manage the risks of lending to farmers while maintaining continued financial profitability and growth. Farmers on the other hand have to continue to find ways to cope with the associated risks to ensure the financial well being of their families (Yedra 2010).

IV. Sources of Risk in Agriculture

Almost any human activity involves some risk at varying degrees. Farming as an economic activity involves risk. In addition to the inherent disadvantages of smallholder farmers due to farm size, household size, distance and topography, among others, there are other sources of risk that have profound effects on the financial well-being of smallholder farm families. There will always be a probability that a farming activity may lead to partial/total production loss and decrease in income.

The major risks faced by smallholder famers are production risk i.e., risk factors that affect yields and price risk i.e., risk factors that affect output prices. It is to be noted though that various factors in the agricultural supply chain are affected in different ways and degrees (FAO, 2011; Siriwongyotha, 2010; Yedra, 2010). Rural financial institutions likewise face other risks in the course of its rural and agricultural lending: market risks, infrastructural risks, policy risks, operational risks and political risks.

In the aftermath of disasters, these natural calamities have a more devastating impact on densely populated countries (e.g., Bangladesh, China, India, Indonesia, Pakistan, Philippines and Thailand). The worst affected and vulnerable are the poor and the marginalised sections of the communities. Unfortunately, poverty is most widespread in areas that are more vulnerable to natural disasters. Not only are the poor the worst hit, but their capacity to recover from a disaster is also limited by their social and economic conditions. In qualitative and quantitative terms, the damage done has far reaching repercussions. These adverse consequences include death or disability of an earning member resulting in a lifetime loss of income, and possible destitution for the entire family, death of any member of the family leaves traumatic experiences for the living, loss of livestock and tools of trade are difficult to replace, in tsunamis and tidal waves, salt-water contaminate agricultural land, and poor sanitation result in diseases of sometimes epidemic proportions.

Disasters produce a complex web of impacts that spans many sectors of the economy. This complexity exists because water is integral to a country's ability to produce goods and provide services. Reduced crop, rangeland and forest productivity; increased

fire hazard; reduced water levels; increased livestock and wildlife mortality rates; and damage to wildlife and fish habitat are a few examples of direct impacts. The consequences of these impacts illustrate indirect impacts. For example, a reduction in crop, rangeland, and forest productivity may result in reduced income for farmers, increased prices for food and timber, unemployment, reduced tax revenues because of reduced expenditures, increased crime, foreclosures on bank loans to farmers and businesses and migration. The web of economic, environmental or social impacts becomes so diffuse that it's very difficult to come up with financial estimates of damages. (Bangladesh Bank, 2004)

A. Production risk

Weather and climatic conditions

Weather and climatic conditions such as droughts and floods as well as disease, pests, and other factors such as change in the growth processes of crops, affect both the quantity and quality of commodities produced. Natural calamities, which have increased in recent years, and have inflicted heavy losses to production outputs, as in the case of Thailand (Siriwongyotha, 2010).

“Floods in rural areas are both closely linked to agricultural production and a major underlying source of systemic risk for farmers.”(Lotsch, et al, 2010). Heavy monsoon rains bring floods

to Vietnam, Cambodia, Lao PDR, Myanmar and Thailand. Drought and flood cycles also occur in Bangladesh, Cambodia, India, and Myanmar.

In Bangladesh, the major disasters of the country causing huge loss of lives and resources are floods, tropical cyclones, tornadoes, coastal surges, river bank erosion and drought. There are four types of floods: monsoon flood in April and May when the major rivers overflow, local flooding due to intense rainfall, flash floods in the eastern and northern rivers and localized floods (the sudden onrush of water when embankments are breached). Bangladesh is an active delta at the confluence of three major rivers Ganges, Brahmaputra and Meghna. Ganges and Brahmaputra have their origins from the Himalayas. Flood is inevitable, and severe floods can always occur in those monsoons when all these three rivers rise simultaneously (Bangladesh Bank, 2005)

In Nepal, there are more than 6,000 rivers and streams. Each year these rivers and streams create various types of disasters such as flood, landslide and debris flow that cause the loss of lives and immense damages to agricultural land, crops, fisheries, human settlements and other physical properties. In the Himalayan region there are a total of 159 glacial lakes in Koshi basin and 229 in Tibetan Arun basin. Among them, 24 are

potentially dangerous. Some of these lakes contain huge volume of water and remain in unstable condition. As a result, they can burst any time and a natural catastrophe may cause loss of life and physical property (Paudyal, A., Hemanta K., and Neupane, P., 2005).

Because of its location facing the Pacific Ocean, the Philippines (along with China, Japan and Korea) is along the path of typhoons. The Philippines is visited by an average of 20 typhoons a year commonly occurring during the monsoon months from June to December. From 1995-2004 alone, climatic aberrations have damaged 4.1 million hectares of rice and corn farmlands causing some 5.5 million tons of palay losses and 2.5 million tons of corn losses. In 2009 alone, after being hit by two successive strong typhoons, the estimated losses from standing crops was \$527 million affecting 480,000 farmers. Total estimated damage brought by these two strong typhoons was \$ 4.4 billion. The Philippines has also experienced increasing frequency of other extreme weather events. Seven El Nino (extensive warming of the central and eastern Pacific that leads to a major shift in weather patterns across the Pacific) and five La Nina (opposite of El Nino) episodes were experienced from 1970 to 2000 (Yedra 2010).

In Iran, the agricultural sector is considered riskier than other

sectors. Reduction in annual rainfall and gradual depletion of surface water rank as the main limitations associated with the sector. Diminishing water sources reduces full production by farmers and full capitalization by Bank Keshavarzi (Rashidi, 2009).

Owing to its geographical position and geological setting, India is one of the countries in the South Asian region worst-affected by natural disasters of different kinds. Droughts, floods, earthquakes and cyclones devastate the country with a regularity seldom seen in other parts of the globe. They are increasing in frequency, causing more and more injury, disability, disease, death and destruction. Such disasters cause indescribable misery, thereby adding to the economic and social burden of the nation. India is the worst cyclone-affected part of the world. Every year, on an average, five to six tropical cyclones form in the Bay of Bengal and Arabian Sea, of which two to three become severe. The following data sum up, in brief, the extent of disaster damage: 22 of India's 32 states and union territories are disaster-prone. Himalayan mountain ranges are extremely vulnerable to earthquakes, landslides and avalanches. Nearly 30% of the country's total cultivable area is drought-prone. Over seven million ha of land are flood-prone and over 1,000 lives are lost to floods every

year (Alam, 2004).

In Mongolia, its climate is characterized by a high moisture deficit, low humidity and low levels of incident energy. Despite 260 days (more than 3,000 hours) of sunshine, total heat units above 10°C rarely exceed 2,000 hours and in some areas are less than 1,000 hours. Snow cover is very light so soils are completely frozen in the winter. As a consequence, the effective vegetation growing period is short. This climatic condition has adverse effect on production for food consumption and fodder. Mongolia also suffers from the dzud, a Mongolia-specific winter disaster of high winds and snowstorms affecting the herding community through large-scale death and debilitation of livestock. The 2010 dzud is now recognized as the most severe Mongolians have ever encountered (Dalantainyam, 2010).

Desertification caused by both human and natural factors, including sandstorms, has significantly affected Mongolia. Land degradation is accelerated if both factors are combined. Soil erosion is common in mountainous areas of India, Nepal and the Philippines.

Earthquakes and volcanic eruptions

As part of the Pacific "ring of fire", the island nations of Indonesia and the Philippines as well as the South Pacific island nations experience strong volcanic eruptions, causing

immediate and short-term destruction of farmlands in the vicinity of the eruptions, through ash and mudflows.

Volcanic and tectonic upheavals, emanating mostly from the sea, cause tsunamis that wreak havoc on farmlands adjacent to the coast, as in the case of the 2004 tsunami that hit Bangladesh, India, Indonesia, Myanmar, Sri Lanka and Thailand. FAO (2005) reports: the tsunami damaged crops through the “intrusion of sea water into soils and the deposition of saline sediments onto agricultural lands. The sea waves also destroyed irrigation and drainage facilities, other agricultural infrastructures, implements, tools and standing crops, as well as marketing facilities. The tsunami thus resulted not only in considerable loss of life, but also in losses of capital and the livelihoods of small farmers in the affected areas”.

In Indonesia, based on current available data and assumptions at the time of the 2004 tsunami, the total estimated damages and losses in agriculture and irrigation was at Rp.2.2 trillion. Large job losses occurred in agriculture, where about one fourth of cash crops areas and rice fields appear to have been damaged. A similar percentage of all farmers and their employees were without work an estimated total of around 320,000 people (Tejaningrum, I. and Ekawati, E. (2005).

Pests and Diseases

Outbreaks of animal infectious diseases and zoonoses cause tremendous losses to farmers in general and to a large extent to the economy of affected countries, aside from the dangers to human health, though governments, in tandem with international agencies, have now measures in place to contain any outbreaks.

B. Price Risk

Recent increases in food prices have raised awareness about the need to increase agricultural production and have opened up opportunities for profitable investments for farmers, including smallholders. Rapid economic and income growth, urbanization and globalization are leading to a significant shift in diet in Asia and the Pacific region, away from staples and increasingly towards livestock and dairy products, fruits and vegetables, and fats and oils. The rising demand for these high-value agricultural products is creating opportunities for smallholders to benefit from new agriculture dominated by high value chains (FAO 2011).

Again, FAO (2011) notes: “The food price surge revealed the vulnerability of smallholders not only to wide price shocks, but also to exploiting market opportunities and adjusting to a new market environment. More and more expert views suggest that the modern economic reality signifies deteriorating prospects for small-

scale farmers. Access to markets which are shaped by globalization, the evolution of food supply chains and the emergence of supermarkets, technology adoption and learning, as well as responses to climate change, all promote economies of scale. Such conditions may erode any production efficiency advantages small-scale agriculture enjoys, while at the same time, favor large-scale operations."

Farm product prices are always fluctuating. Farmers sell their farm produces at low price during the harvest season. When the prices rise, they have no farm produce in hand. Those farm produce have been cornered by middle men or rich traders. Price risk refers to uncertainty about the prices producers will receive for commodities or the prices they must pay for inputs which are significantly varied depending on the supply of the commodities at a specific time especially during harvesting season and at time of scarcity or shortage. The nature of price risk varies significantly from commodity to commodity (Siriwongyotha 2010).

Farmers have also to contend with unpredictable and unstable output prices that put at risk eventual farm incomes (Yedra 2010).

V. Risk Management Strategies of Smallholder Farmers

Governments in Asia usually provide support to smallholder

farmers in times of disasters and calamities. But sometimes their support and protection mechanism are not sufficient or delayed, when the emergency is national in scope or covers a sizable area of a country. A great number of smallholder farmers also shun formal credit from banks, afraid to lose their prized asset-land, and prefer to self-finance or borrow a small amount elsewhere. On the other hand, some banks also shy away from lending to smallholder farmers for reasons mentioned in the previous section.

Thus, to cope with uncertainties of adequate income from their agricultural activities and noting that in the end they would have to fend for themselves, smallholder farmers usually devise various individual risk management strategies (in view of their informal nature, these are also referred to as coping strategies or mechanisms). In stronger communities, smallholder farmers band together through various farmers' organizations (e.g. cooperatives, thrift societies, machinery rings, village centers, business centers and self-help groups) to undertake community-level risk sharing. These risk management or coping strategies can be classified into ex-ante (before the event) and ex-post (after the event) strategies.

A. Ex-ante strategies at farm household level

Ex-ante strategies at farm household level include savings,

buffer stocks, (agricultural) enterprise diversification, low-risk, low-return cropping patterns and production techniques. (Jaffee, Siegel and Andrews, 2010).

Savings

Smallholder farmers know the advantage of having ready cash, separate from regular savings, stashed away and easily retrieved, for use during calamities. These savings are kept in banks, cooperatives, self-help groups or, showing their resourcefulness, in various ingenious modes and, if in cash, in inventive hiding places.

Buffer stocks

Smallholder farm households usually keep commodities (rice, corn, beans, root crops) in indigenous containers kept underneath or beside their houses, as a buffer for lean and disastrous months.

Diversification

Diversification is a common strategy among farmers. They grow several crops in one season, diversify their farm enterprises or conduct non-farm activities. They select the crop/variety suited for an incoming season and adjusting the inputs e.g. lesser fertilizer inputs if the incoming season is known to be of higher risk of yield loss. A common practice is to use high yielding varieties (which are also input intensive) during the dry season (no calamities expected)

The Case of Mongolian Herds

A 2009 survey showed 52.6% of respondents predicting the winter to be harsh. Furthermore, 63.8% declared their winter preparation were better than for previous years, while 28% prepared for it as usual and the rest 8.2% prepared for it worse than the previous years.

The households prepared for the winter in different ways: 50.4% of them preferred distant pasture grazing 'otor' movement, 44.7% sold some animals for market, 36.7% made/bought hays and fodder and 0.7% insured their animals. Compared to 2008, the project beneficiaries cut 13.3% more hay and hand-made fodders. On average, a household purchased 40 bales of hay and 27 bags of concentrate feed, mobilizing all their cash sources (current incomes, savings, bank loans, etc). Finally, they sold skins and hides of dead animals and bought fodder. On average, a household spent 470.9 thousand MNT (around US\$ 360) for purchasing hays and fodders.

The households, who predicted the winter to be harsh, took actions to regulate the number of their animals. For instance, 180 surveyed households sold 6 camels (at unit price 366.7 thousand MNT), 250 horses (159.2 thousand MNT), 141 cattle (221.8 thousand MNT), 3177 sheep (28.9 thousand MNT) and 3340 goats (19.8 thousand MNT). Unfortunately, some buyers took their animals in advance and cheated the herders in two ways. First, 6 surveyed households in Bayan-Under Soum, Bayankhongor Aimag, cannot receive the full prices for 81 sheep and 172 goats from intermediaries. Second, 18 surveyed households in Bayantsagaan Soum, Bayankhongor Aimag, are unhappy being paid only 18.000 MNT per sheep and 7-12,000 MNT per goat instead of negotiated high prices.

In addition, most households prevented their ewes and does from mating last autumn, believing this would be helpful for the survival of female-breeding stock, otherwise, most pregnant does would be aborted, while most pregnant ewes would die either before or after giving birth.

However, the winter preparation of many households was insufficient. The surveyed households ran out of the prepared and purchased hay and fodder. Herders were forced to graze their animals on open pastures despite the extremely low temperature. For this reason, many animals froze to death on open pastures or were injured. Many animals, especially goats, were depressed and died in animal shelters because of the extremely low temperature. This is an indication that the shelters were not warm enough. Many herders who prefer- red 'otor' movement do not prepare or purchase any hay and fodder and, thus, spend winter without animal shelters. (Dalantainyam, 2010)

and use inbred varieties (lower yield but less input intensive) during the wet season (calamities expected). Yedra (2010) cites MASIPAG's (a Philippine NGO) innovative 'varietal diversification' approach, where rice farmers are encouraged to grow different rice and corn varieties adapted to climatic and location-specific variability. For strong winds, the farmers plant shorter, sturdy varieties with bigger stalks and when flooding is expected, they plant medium to tall varieties with strong stalks. The farmers keep a diverse source of rice seeds to choose from. Some also use different varieties with different harvest time periods to reduce the risk of a full crop failure if and when typhoon or flooding comes.

Low-return cropping patterns

In the rural areas of Lao PDR, most smallholder farmers and those that help them are highly risk-averse, with self-sufficiency strategies based on traditional methods of production and minimal use of inputs (Singh, 2010). The move towards high value crops as well as organic agriculture, which can cater to the demands of a special niche and can thus be more high-rewarding, is just starting to be accepted as an option.

Production techniques

One practice among rice farmers is 'ratoon' cropping system. Rice ratooning is an indigenous practice in the Philippines that aims to increase cropping intensity through re-growing of a second crop

from the shoots or 'ratoons' of the mother crop, through the application of fertilizers with the harvest done after 45 days. This gives high gross returns due to lower production costs due to lesser inputs required and shorter crop period of the ratooned crop (Yedra 2010). In South Asia, there are also practices of ratooning sugarcane and sorghum. Ratoon cropping reduces cost of production through savings in land preparation and care; reduces crop cycle, gets higher yield per unit area in a given period of time and reduces use of irrigation water and fertilizer.

In Mongolia, after a deadly dzud, the analysis of the impact assessment shows that the surveyed households have learnt the following lessons:

- ▶ To be better prepared for animal wintering (26.7%).
- ▶ To move toward intensive farming and breed a few high productive animals (20%).
- ▶ To better manage the numbers of their animals (19.2%).
- ▶ To better manage 'otor' movement (13.9%).
- ▶ To insure their animals (3.6%)
- ▶ To preserve emergency pastures (2.8%).
- ▶ To participate in herders groups and cooperatives (1.9%).
- ▶ To grow vegetables (0.4%) (Dalantanyam (2010)).

B. Community-Level Ex-ante Strategies

At community level, small farm households that have joined others at the community level undertake food crop sharing, common property resource management, social reciprocity and rotating savings and credit (Jaffee, Siegel and Andrews, 2010).

Communities with strong groups and leadership have put in place mechanisms for group survival and social reciprocity.

C. Ex-Post Strategies at Smallholder Farm Household Level

Ex-post strategies at smallholder farm household level include sale of assets, reallocation of labor, reduced consumption and borrowing from relatives (Jaffee, Siegel and Andrews, 2010).

Similarly, Sawada (2009) found Philippine farm households affected by super-typhoon “Milenyo” (international name: “Xangsane”) coping with the disaster by a) reducing food consumption, b) switching consumption from purchased food to own produce, c) obtaining emergency loans from relatives and moneylenders, d) receiving remittances from family members or relatives outside of household, and f) engaging in non-farm employment.

Similar coping mechanisms were also observed among Philippine families affected by the two strong typhoons (“Ketsana” and “Parma”)

in 2009. A post-disaster needs assessment report found that those affected by the typhoons coped with the tragedy by: a) taking temporary work where available, b) borrowing money from informal lenders, c) reducing family expenses, and d) asking financial and/or material support from relatives (Yedra 2010).

In the Philippines, non-farm employment played a very important role serving as a coping mechanism as non-farm income is not generally affected by the natural disaster providing the household with the cash inflows. Temporary work in construction (e.g. house repairs) was the most common as labor work for agricultural activities was fewer. However, as the number of days of temporary work for men is limited (average of only around five days in a month), women often looked also looked for temporary work e.g. laundry or domestic helper. Informal lenders also play an important role as source of emergency funds; but this tends to tighten during calamities due to loss of assets that can be used as mortgage and the number of calamity victims. Financial support from relatives is normally sought but the support obtained is usually just enough to meet basic food needs and not sufficient re-start an agricultural activity. Finally, remittances from family members working abroad (overseas workers) served as important source of funds

(25% of farm households (Yedra 2010).

In Cambodia, farmers households affected by floods or short-term drought consume less, reducing their food intake significantly. They withdraw savings they might have accumulated, either by selling physical items or withdrawing cash if they were one of the few people fortunate enough to have access to cash deposit services. Some seek loans from various informal sources or from MFIs. Some default on repayments of existing loans. Others are forced to sell their productive assets (Son, 2004).

D. Ex-post Strategies at Community Level

Ex-post strategies at community level include sale of assets and transfers from mutual support networks (Jaffee, Siegel and Andrews, 2010).

Funeral Associations

One could not overlook the importance of farm family members in the farming operation. A death of family member could cause huge impact on farmers. The passing away of a person could mean the absence of partner labor that is the pillar of farming, loss of future income, the financial burden and risk which could in later stage result in an inability to fulfill the obligation to repay debt.

Funeral or burial societies have a long tradition in rural Thailand and are deeply rooted in the village community. The funeral society

represents the most widespread and popular micro insurance institution as its major function lies in pooling resources to cover funeral costs of its members. In its original form, membership is compulsory and includes everyone in the village aged over one month. Every time there is a death in the village, the members must provide a contribution of a fixed amount.

Based on these traditional funeral societies, the farmer clients with the support of Bank for Agriculture and Agricultural Cooperatives (BAAC) set up funeral associations. The rationale for setting up, from farmers' view, was to provide its members with immediate financial support meanwhile BAAC can secure loan repayment in case of borrowers' death (Siriwongyotha, 2010).

VI. Risk Management Strategies by Government, RFIs and Private Sector to Strengthen Resilience

The coping strategies of smallholder farmers, on their own or in tandem with their respective communities, are usually inadequate to cope and recover from devastating losses due to major disasters. Hence, there is need for support from outside their realm, which can be provided to a certain extent by their governments, rural financial institutions, private sector and outside donors.

Formal risk management measures include market-based

(share/transfer risk) and publicly-provided (transfer-absorb risks) strategies.

A. Market-based ex-ante strategies

Market-based ex-ante strategies include contract marketing, financial hedging tools (options), traditional agricultural insurance, weather index insurance and contingent funds for disaster relief. (Jaffee, Siegel and Andrews, 2010).

Contract farming/marketing

Contract farming and marketing became popular in recent decades, since it can benefit farmers through market access, extension service benefits, infrastructure support (e.g. warehousing, transporting) and even initial credit. There may be constraints such as inflexible farming system (e.g. may not plant others along farm perimeters) and limitations in marketing (may not get the best price in better times). It can also be an excellent private-sector-led strategy for poverty reduction, as it assures farmers of price. Buyers and smallholder farmers usually establish and agree on price or pricing mechanism are established for a commodity before harvest or before the commodity is ready for marketing.

In contract farming or out-grower schemes, producers are linked with large agri-businesses (e.g. exporters, processors and wholesalers) who are ultimate buyers of the produce. Under this model, a large agri-business enters into a contract with producers for

the large-scale production of a certain commodity with specified standards of quality and quantity that producers must meet. The buyer itself facilitates the financing and distribution of inputs to farmers on the condition that the produce will be sold to them upon harvest (i.e. loans are tied to a purchase agreement). The buyer also provides technical assistance, training, technology transfer, and monitoring and supervision. Despite incurring additional costs, the buyer must provide such services to keep up with the high standards of quality and quantity demanded by consumers. Buyers deal with large scale farmers or farmer organizations which, in turn, are responsible for organizing smaller farmer groups (Casuga and Paguia, 2008).

In some cases, buyers contract with small-scale farmers, provided they are formed into groups. In Cambodia, for instance, Angkor Kasekam Roong Roeung Co., LTD. (AKR) established its operations in 1999 started large-scale contract farming arrangements, contracting more than 32,000 farm households by 2004. AKR established commune associations to help enforce contracts. Each commune association consists of a head, a deputy and the village head. The head and deputy are trained by the firm to understand the basic technical aspects of organic farming and the farming of Neang Malis, the preferred rice seed

variety. Each association hands over to AKR management progress reports of every stage of production from plowing, transplanting, water management, and harvesting, provides basic technical advice to its members, advises them not to use chemical fertilizers, helps members grow other crops after the harvesting season, help members develop mixed or integrated agriculture, reports any issues related to the production process such as drought, flood, disease, insect and other significant issues that affect production. The firm channels its policies through the associations and provides extension services via its agents. AKR associations appear to be a good model for community-based agricultural development. They provide the basis and experiences for the future development of farmers' associations in Cambodia where farmers are predominantly smallholders. (Cai, 2008),

Weather index insurance

Prior to the introduction of weather-indexed crop insurance, crop production is subject to be influenced by adverse weather condition which has detrimental impact on crop yields. Unfortunately, there is little option with farmers to protect their crop against it. As a result, need arises to devise a system that can monitor the impact of uncontrollable weather on crop production, both in terms of acreage and

production. Thus, BAAC in collaboration with government agencies and Thai insurance companies, along with the World Bank's technical assistance, had initiated the weather-derivative-indexed crop insurance scheme for Thai farmers in order to enable them to do better agricultural production risk management especially weather-related risk, particularly floods and droughts. A feasibility study in Year 2005 and piloted in Year in the context of self-activated agricultural immune system by reducing the exposure to weather-based risk. Such system makes use of state-of-the-art 3-S technology including Geographic Information System (GIS), Remote Sensing (RS) and Global Positioning System (GPS), respectively. Retail agricultural insurance policies are sold in order to protect and stabilize farmers' income from the uncertainty of rainfall during the 2007 agricultural production. (Siriwongyotha, 2010).

For several years, the index-based livestock insurance was effective in Bayankhongor Aimag, but only 3 households out of the 464 surveyed households insured their animals. In 2010, the livestock insurance covered Gobi-Altai and Zavkhan Aimags. The recent dzud gave herders a good lesson and they are more likely to be interested in the livestock insurance.

B. Publicly-provided ex-ante measures

Publicly-provided ex-ante measures include pest/disease management, physical crop/food stocks, price guarantee or stabilization funds, input subsidies and public agricultural insurance. (Jaffee, Siegel and Andrews, 2010).

Integrated pest management (IPM)

IPM is an integrated ecological approach of crop management in reducing or eliminating the use of chemical pesticides while managing pest populations at an acceptable level. IPM use techniques such as use of natural enemies of a pest, special cropping practices (e.g. synchronized planting and harvesting in a farm community, proper timing and rate of fertilizer) and minimal use of pesticides based on regular monitoring of fields to diagnose pest problems. IPM is not entirely new as this was introduced as early as 1970s and initially developed for rice, corn and vegetables. It has however gained renewed relevance in 2000 in view of increasing threats of chemical pesticide use to human health and to the ecosystem. In 2005, it has been introduced also to mango one of major exported crops, in view of new threats (and associated risks) and excessive pesticide use. Losses to pest infestation on mango go as high as 10 to 40%. Recently, IPM gained new relevance due to new threats posed by climate change.

Experts predict that due to warmer temperatures, changing rainfall and drought patterns may cause the spread of many pests and diseases spread further. These new threats have renewed research interest on IPM, to develop tools for pest risk assessment and adaption and broaden pest management options to deal with emerging pests (Yedra, 2010).

In Mongolia, the government supports the following measures (percentage replies based on survey):

- Restocking the badly dzud-affected households (48.8%);
- Intensifying the sector through better animal health, breeding services and increased investments (9.6%);
- Improving fodder supply by increasing fodder production and building Soum-based fodder funds (8.0%);
- Proper government policies in support of herders' livelihoods (7.6%)
- Livestock marketing (7.6%);
- Improving rangeland management and pasture water supply (6.6%);
- Providing cheap loans and better management of non-performing loans (3.2%);
- Introducing livestock insurance system (2.4%);
- Struggling against animal thieves (2.0%); and
- Supporting herders' groups and cooperatives (1.6%) (Dalantainyam, 2010)

Expansion of protected areas

In 2000, protected Areas covered 16.3 million hectares of Mongolia. The protected area network increased in 2005 by 25.8% reaching 20.5 million hectares. 13.1% of Mongolia is currently included in the protected area network. Over the last 4 years, protection at Soum and Aimag level increased by 1 million hectares. At present, 40% of the protected area network includes desert ecosystems in the Gobi. Funding from foreign countries totalling 228 million tugrugs was spent on implementing 50 small projects to improve the livelihood of people living in the bufferzones of protected areas (Dalantainyam, 2010)

Government and private sector support

In Thailand, more than half of the agricultural households are engaged in rice production in view of its export importance. Low productivity of rice has been a drag on farmers' income. Over the last two decades, substantial investment has been made on public sector agricultural research and extension development of rural infrastructure to support productivity growth in agriculture, and on raising farm incomes. A number of modern rice varieties have been released for use by farmers. However, the adoption of varieties has been concentrated largely in the irrigated areas of the central plain, where the water

supply situation is more favorable. The adoption pattern has essentially widened the yield gap between favorable and unfavorable rice production environments, which created a productivity differential and further worsened regional incomes distribution. (Siriwongyotha, C. 2010)

Below are some innovative approaches promoted by extension agents to mitigate production risks faced by farmers particularly in view of new risks associated with climate change.

The Seasonal Climate Forecast (SCF) Pilot Project. In 2005, the Philippine Government with assistance from Australian government through the Australian Centre for Agricultural Research (ACIAR) initiated a project aimed at improving seasonal climate forecast (SCF) in selected areas highly vulnerable to climate variability. The project intends to bring SCF information to farmers to help them in their farming decisions. SCF is an innovation for managing seasonal climate variability. It gives a forecast for an incoming season that may range from three months to a year which gives an estimate of rainfall or temperature that is likely to be different from the prevailing average climate (e.g. the coming season is likely to be wetter or drier and warmer or cooler than normal). In some cases it gives indications as to increased likelihood of an El Nino or La Nina phenomenon (ACIAR,

2009). SCF information is given in advance thus it can help farmers in (a) selecting the crop and variety most appropriate to the climate forecast; (b) timing of cropping periods or planting schedule and (c) level of input use. This minimizes the risk of crop production failure during bad outcomes and aids farmers in taking advantage of opportunities during good outcomes (Yedra 2010).

Pasture irrigation

In 2009, total of 668 wells have been newly constructed around the country and 218 wells have been reconstructed; which has provided more than 3,500 herding families (2.5 million heads of livestock and 1.3 million hectares of pastureland) with water. For the construction of 668 new wells, the state has allocated MNT8 billion, and MNT1 billion for the reconstruction of 218 wells. Moreover, as a result of water research in Bayankhongor, Bulgan, Gobi-Altai, Dornogobi, Dornod, Uvurkhangai, Umnugobi, Sukhbaatar, Tuv, and Uvs provinces, 508 water points have been discovered (Dalantainyam, 2010).

Revenue Insurance

In Thailand, during the past few decades, the focus of agricultural policy was on the agricultural price support system in the form of crop pledging scheme. The scheme was aimed at major crops such as rice, maize and cassava to guarantee farmers a price for their crop. The pledging scheme was popular among farmers as they see it is the

only option that can shield them from price volatility because the government pays farmers higher than the market price.

However, critics believe agricultural price supports benefit rich farmers with large irrigation systems a lot more than they do poor farmers and it is a potential threat to the long-run competitiveness of Thai rice on international markets. The pledging scheme, which generally set prices higher than market rates, would be harmful in the long run, as it addicts farmers and weakens their capability to improve quality.

Currently, the government has opted to change the way to help farmers plan and manage price risk. The revenue insurance program was introduced in place of crop pledging scheme for the same crop and became most popular from the start. Whereas crop pledging scheme covers the difference between government set price and market price, revenue insurance pays when gross revenue (yield times price) falls below a specified level. The program gives farmers an incentive to hold on to their crop in hopes of benefiting from higher prices in future. This in turn would help reduce pledges under the normal pledging scheme, reducing state stockpiles and helping support market prices by reducing supply distortions. Again BAAC took the lead in handling this risk-management mechanism for farmers (Siriwongyotha, 2010).

Public agricultural insurance

Informal (traditional) risk-management practices cannot provide protection against high-severity, low-frequency co-variate risks that center on typhoons, floods, tsunamis and droughts. In these cases, risk transfer and insurance either through private mutual insurance and commercial insurance and/or publicly provided agricultural insurance may have an important role to play (FAO 2011).

In 2010, FAO, in tandem with APRACA, commissioned a study covering a total of 44 countries to review and assess agricultural insurance models in Asia and the Pacific region and to provide guidelines and recommendations to policy-makers seeking to introduce agricultural insurance programmes into their respective countries (FAO 2011).

Agricultural insurance systems are varied: major public sector programmes in India and the Philippines, public-private partnership in China and Korea, purely private partnership in Australia and New Zealand and the non-formal private mutual and community-based crop and livestock initiatives found in Bangladesh, India and Nepal. (FAO 2011)

Agricultural insurance and particularly new index insurance may have important roles to play in managing climatic and natural risks at different levels of aggregation, including

- ▶ at the individual farmer or micro-level to smooth production and incomes against major weather shocks.
- ▶ at the meso level as a business interruption cover to protect the agricultural loan portfolio of financial institutions and even input suppliers.
- ▶ at the macro or government level to ensure early relief and food security after natural disasters. (FAO 2011)

Insurance is a risk treatment option which involves risk sharing. A buyer buys a premium to be protected from a potential large loss.

Crop Insurance

Crop insurance is a risk management tool to even out agricultural risks and address the consequences of natural disasters to make losses more bearable particularly among the marginalized farmers. In the Philippines, the Philippine Crop Insurance Corporation (PCIC), established in 1978, is the agency mandated to implement and manage an agricultural insurance program for small farmers. The PCIC implemented crop insurance program nationwide starting 1981 initially covering only rice. Corn was added at the middle of the following year.

The Philippine Crop Insurance Corporation also offers agricultural assets insurance, covering machineries, equipment, transportation facilities and other

related infrastructures. PCIC also offers Agricultural Producers Protection Plan (APP), covering death of the insured due to accident, natural causes, and murder and assault. It covers agricultural producers/farmers and fisherfolk and their family members up to the 4th degree of consanguinity and farm workers, with various premiums at individual and group insurance. PCIC also provides Accident and Dismemberment Security Scheme covering the same producers and family members/workers as in APP. PCIC also provides loan repayment insurance, guaranteeing the payment of the face value of the loan upon death or disability of the insured borrower. (PCIC brochure, 2012)

Credit Guarantee

Credit guarantee is viewed as a credit risk-reducing mechanism to encourage financial institutions to lend to the socially-desirable sectors such as small farmers. Since most marginalized farmers cannot present acceptable collateral to the banks, credit guarantees are offered as "substitute" collateral.

In the Philippines, agricultural credit guarantee programs were intermittently implemented beginning with the Comprehensive Agricultural Loan Fund (CALF) guarantee programs starting the late 80s until the mid-90s. A lull in credit guarantee programs followed the late 90s as the government's

agricultural guarantee corporation (Quedan Credit and Guarantee Corporation) shifted its operations to agricultural lending. However, in 2008 following drop in rice production due to series of natural calamities, a new agricultural credit guarantee program (known as the Agricultural Guarantee Fund Pool) was launched.

C. Market-based ex-post strategies

Market-based ex-post strategies include savings and credit. (Jaffee, Siegel and Andrews, 2010). Certain strategies can also be considered as risk management strategies: joint-liability lending, and value-chain integration

Savings and Credit

The Rural Development Bank of Cambodia, a wholesale lender to MFIs, recommends several financial moves to help MFIs in difficult times and at the same time maintain sustainability of the MFIs.

- MFIs should encourage their clients to accumulate savings as an asset against disaster events, educate their clients about the advantages of accumulating savings. Savings must be immediately available for withdrawal during disaster.
- It will be appropriate to offer options for temporarily reducing repayments (rescheduling loan repayment). Repayment may be made to consist of "interest only" or it may be suspended completely.
- Alternatively, the MFIs may offer to extend the term of the loan

(loan can be treated as loan in arrears or as a refinanced loan).

- No grant or loan cancellation as writing off loans have a number of negative impacts, it's likely to cause "repayment apathy" on future loans

When some of the financial concession employed, particularly loan restructuring and if MFIs considers that there is no additional risk inherent in the restructured loan than was present prior to the disaster, the loan might be refinanced and recorded in the balance sheet as a structured loan which would otherwise be treated simply as a "past due" loan. If restructured loans are treated appropriately, there need not be any alteration to the accounting policy on arrears ageing and delinquent loan write off. When an MFI are severely impacted by a natural disaster, it may experience a serious liquidity crisis and might need to restrict the withdrawal of savings. Such actions could have a disastrous impact on the credibility of the MFI as a long term financial intermediary. Therefore, MFI need to ensure that they have access to sufficient capital, especially when a natural disaster strikes (Son, 2004).

During the early period of BAAC's operations, it depended largely on government fund and borrowings. BAAC's expansion of its branch nework to every part of the country required a great deal of operating fund. Limited fund from

government and high cost and risk-bearing borrowings especially from overseas led to self-reliance by mobilizing savings domestically. Many saving products have been introduced to the public. Besides the regular savings products e.g. savings account and time deposit account, the most popular products are Om sap taweechoke and Om sap taweesin. Both have drawn significant savings not only from farmers or rural people but also from general public. This contributed to BAAC's increased operating fund from zero in 1966 to 84% by the end of fiscal year 2009. The deposits reached 641,883 THB million (as of 31 March 2010) which is ample for its lending. Thus, smallholder farmers have various savings modes to use that would cater to their various needs: day-to-day expenditure, support to production activities, contingencies for disasters, and long-term deposit is for long-term needs. (Siriwongyotha, 2010).

In Bangladesh, rural financial institutions were enjoined to take necessary steps to disburse new loans to farmers according to the actual demand. A "Complaint and Credit Supervisory Cell" was formed in order to monitoring the quick disbursement of credit by all RFIs. (Bangladesh Bank, 2004).

During the 2004 tsunami, Indian financial institutions rushed to the needs of the tsunami victims by offering special schemes and packages such as loans for repair,

rebuilding and renovation of houses and starting new economic activities at highly concessional interest rate of 7%. The loan amount carried simple interest rate, with 18 months moratorium and between 5 and 15 year repayment. In addition, banks provided special investment credit for pursuing such activities as cattle rearing, poultry, plantation crops, horticultural crops etc for all those who have suffered loss on account of the tsunami, rescheduled existing loans with a 2 year moratorium, fresh loans for income-generating activities, covering all borrowers who were sanctioned loans but not disbursed during the tsunami and offering loans to self help groups (SHGs) at ten times their savings as against four times that was in practice (Alam 2004).

At that time of BAAC's establishment, very few Thai farmers had land title documents which would be considered acceptable as security for bank loans. BAAC adopted joint-liability as its principal basis of loan security, following the use of the concept on a small-scale by the commercial Bangkok Bank for a few years in the early 1960s. Joint-liability has been at the heart of BAAC's operations ever since. Without it, the bank would not have been able to find enough acceptable farmer-clients to expand the size of its clientele as it has done.

A basic requirement for joint-

liability security for BAAC loans is that the farmers concerned, after passing BAAC's basic eligibility criteria, form themselves into groups of people who know and trust each other. These groups may vary in size from a minimum of 5 to a maximum of 30 farmers, according to the bank's regulations; in practice most groups consist of 12-15 farmers, and provided they pass the bank's basic eligibility criteria the membership is decided by the farmers themselves and not by the bank. Each year the group members who want to borrow for seasonal production costs sign a contract in which they accept liability not only for their own individual loans, but also for the loans borrowed by other members of their group. Hence, the term 'joint-liability'. In the very small number of cases where joint-liability borrowers are taken to the courts for non-repayment, the whole group will be involved in the court action.

The groups formed by the farmers are not legal entities, and cannot borrow or enter into contracts as groups. The loans are made by BAAC to individual farmers, not to the group collectively. The amounts borrowed by each person depend on his or her individual needs, up to a maximum of 50,000 Baht (US\$ 2,000) which can be borrowed with this form of security. The groups exist only in so far as their individual members are legally bound to each other and to

BAAC as the result of signing a joint-liability contract. The legal commitment ceases once the loans are repaid. Therefore joint-liability groups are conceptually quite different from cooperatives and farmer associations, which are permanent, legal bodies and which borrow on a wholesale basis from BAAC for their own institutional development and for on-lending to members.

The concept of joint-liability depends heavily on the establishment and maintenance of good, trusting relationships between group members, and between them and the bank. Therefore the security of the system rests on systematic supervision by field staff who are able to visit client farmers in their homes and at their farms (Siriwonyotha 2011).

In Bangladesh, flood has been a common natural calamity in our country which lives and livelihood almost every year. Thus, ASA Bangladesh launched its Flood & Rehabilitation Loan to assist the victims in getting over the calamity.

Value-Chain Integration

The establishment of Agricultural Marketing Cooperatives (AMCs) by BAAC farmer client in 1998 to support the provision of quality agricultural inputs and marketing channels of agricultural products for client farmers was an innovation of farmers with the support of BAAC in order to gain more bargaining power in terms of farm input procurement, selling of

farm produces so to relief their burden on risk in agriculture. The background of the establishment is presented in Thailand with a high economic growth during 1986 and 1996, based on both favorable external factors and sound policy fundamentals, including prudent fiscal management, aggressive export promotion, trade policy liberalization, and market-friendly policy interventions. A total of 74 AMCs were established with more than 80% of BAAC 6 million farm families benefit from AMCs 5 billion Baht business volume.

D. Publicly-provided ex-post measures

Publicly-provided ex-post measures include disaster assistance, social funds, cash transfers and waiver (cancellation) of crop loans (Jaffee, Siegel and Andrews, 2010).

Disaster assistance

Most countries have well developed contingency plans and risk management programme, involving relief, recovery and reconstruction. Most receive post-disaster compensation in the form of cash, replacement poultry, free seeds and fertilizers.

India has a National Crisis Management Committee (NCMC) responsible for assessing the impact of major disasters in India. In the event of a disaster, a multi-disciplinary team, at the invitation of the affected state, carries out disaster assessment and makes recommendation for fund

assistance from the National Calamity Contingency Fund and the Prime Minister's Relief Fund. Each state or province has a corpus of funds administered by a state level committee of the state government. The corpus is built by annual contributions of the Government of India and the state governments concerned in the ratio 3:1. A High Powered Committee (HPC) for the preparation of Disaster Management Plans, constituted in 1999 by the Government of India, has representatives from concerned ministries dealing with industrial, nuclear, biological, chemical disasters, etc. Its tasks include (i) review of the arrangements for preparedness and mitigation of natural disasters; recommend measures for strengthening organisational structures and (ii) formulation of a comprehensive model plan for Natural Disaster Management at the National, State and District level. A Disaster Preparation and Response Committee has been set up by the Government of India involving the NGOs for the purpose of preparing the communities to face natural disasters and to make them respond to emergency relief operations. The Central Water Commission (CWC) responsible for monitoring of floods has a flood forecasting system covering 62 major rivers all over India. The CWC also monitors the water levels of 60 major reservoirs. Similar

monitoring of smaller reservoirs is carried out by the irrigation departments of state governments and gives advance warnings (Alam, 2005).

In Cambodia, the Royal Government of Cambodia has created the Cambodia National Disaster Committee to respond to all kinds of disaster activities in the whole country. (Son, 2004).

Waiving/ restructuring of loans

Immediately after disasters, most of MFIs in Cambodia reschedule loans on a case-by-case basis (by individual or group). The decision on reschedule loan repayments is based on a detailed assessment of clients' temporary loss of their income. In some cases, MFIs choose between having clients continue to pay interest while the principal payments are postponed or stopping the accumulation of interest until after principal repayment has resumed. In some exceptionally bad cases, MFIs may consider writing off loans to the client but they are cautious about sending the wrong signals to the community or people (Son, 2004).

In Bangladesh, the following disaster assistance were employed in 2005: rescheduling of all outstanding dues for the next year, relaxation of down payment scheme and waiver of interest for agricultural (and fisheries)-related borrowers (Bangladesh Bank, 2005).

VII. Recommendations

- Risk management needs to

improve dramatically so that agriculture and agricultural finance can flourish.

- Agricultural lending needs robust risk-transfer techniques and to pursue more complex instruments and alternative forms of collateral as well as substitute instruments for collateral such as credit guarantee.

- Private insurers shy away from crop insurance due to inherent market constraints of this type of insurance (e.g. premium rates would be too high that would deter farmers from buying and the relatively low profit potential of such endeavor). Crop insurance needs government subsidy either or both in terms of adequately capitalizing the crop insurance corporation and/or by continuing its premium subsidy.

- Support from government and development agencies is also crucial in mitigating production risks faced by farm households. Farm extension programs and improved weather information can help farmers improve indigenous practices in mitigating production risks associated with weather and pests (e.g. through selection of crops/varieties, timing of cropping, and adoption of appropriate crop systems).

- In post-disaster events, timely relief and rehabilitation assistance plays important role in helping rural families, particularly the poor, cope with the negative impact of major disasters.

- At the farmer level, government need to spur the rebuilding of farm extension services, while farmers need to become more financially literate and save more so they can retain some of the risks.

- Governments, donors, and insurance companies need to collaborate in the development of yield-insurance products that are inexpensive, sustainable, and appropriately designed. Governments, commodity exchanges, and financial institutions likewise need to collaborate in developing futures, structured finance products, and other hedging instruments to reduce price risk.

- At present, the lack of high-quality weather data, inadequate distribution of weather stations, limited supply of people with risk-modeling capabilities and expertise in agricultural risk management, small capital markets, and weaknesses in regulatory and legal infrastructure hamper the pace of progress. Since the depth and efficiency of financial markets are highly correlated with the speed of overall economic development, innovative methods of improving rural financial services will be critical in facilitating and sustaining any marked improvement in rural welfare.

- Agricultural insurance needs to be strengthened. The current coverage is too limited to have a significant impact. Weather index insurance may possibly address

the problem of high overhead expense associated with crop insurance due to tedious process of measuring crop loss. Public-private tie-ups on agricultural insurance both with local and international insurers- should also be explored as demand for this insurance is huge as well as due to increasing threat of catastrophes.

- Uncontrollable risk, however, continues to be a major impediment to the development of more efficient rural financial markets. Renewed private-public sector efforts and higher amounts of investments will be required at various levels to address these issues.

- Given a market-oriented regulatory environment, private rural lenders can work out sound risk management practices appropriate to their type of clients. Public-sector policymakers need to provide leeway for interest rates to seek its appropriate pricing.

- Rural financial institutions have more roles to play in the context of rural development, apart from fulfilling its dual objectives of providing the maximum access to rural credit and maintaining its financial viability. They have to make their vision clear and commit to place corporate social responsibility and enhancement of

quality of life of smallholder farmers as a priority, particularly in times of disasters.

- The provision of loan supports rural sector activities as capital to create value-addition. Focus should be given to the increase of revenue and decrease of costs of farmers by developing a variety of products that meet the needs of farm families: this ranges from the improvement of productivity, finance for processing, marketing and agricultural services to a broader range of activities in agricultural value chain.

- Communities are centers for rural network and customer development. Community database must be structured to help identify and select potential targets for development assistance and market-oriented support.

- A g g r e s s i v e s a v i n g s mobilization campaign in the rural areas should be vigorously pursued as a strong buffer against calamities.

- Rural lenders have to find ways to manage the risks of lending to farmers while maintaining continued financial profitability and growth. Farmers on the other hand have to continue to find ways to cope with the associated risks to ensure the financial well being of their families.

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I, K. K. Ravindran, hereby declare that particulars given above are true to the best of my knowledge and belief.

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**RECIPIENT OF FIRST EVER INDIRA PRIYadarshini VRIKSHA MITRA AWARD PROUDLY
ANNOUNCES JUST A FEW OF ITS RESPLENDENT ACHIEVEMENTS**

● Advances (From inception to 30-03-2013)	Over ₹4173.44 Crores
● No. of loan cases sanctioned	17.79 Lakhs
● Share of Weaker Section in Bank's financial assistance.	166.15%

STRIKINGLY INNOVATIVE PROGRAMMES INTRODUCED BY THE BANK

<ul style="list-style-type: none"> ● Waste Land Development and Afforestation ● Rural Housing, S.R.T.O. ● Non-Farming Rural Enterprises, Sericulture, Integrated Horticulture / Floriculture / Tissueculture, Medicinal Plant, Dairy Development and Poultry / Piggery / Rabbit Rearing / Fisheries and Fish Boat ● Big and Small Lift Irrigation Schemes of area 300-2500 acres implemented ● Rural Godowns / Agri Clinic & Agri Business Centres ● Purchase of Agriculture Lands ● Solar Lights, NFS 	<ul style="list-style-type: none"> ● Purchase of Two Wheelers ● Rain Water Harvesting Structures ● Dairy Development ● Vermi Compost Units / Bio-digester ● Short term crop loan. ● Farm Mechanisation ● Combined Harvester ● JCB Dozers ● Coffee curing, Drying yards (Paddy, Areca, Coffee etc.) ● Agricultural Implements ● Gold Loan, Salary Loans etc.
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BANK ACCEPTS FIXED DEPOSITS

1. (a) 91 days - 7% (b) 181 days - 8%
2. One to two years - 9.5%, Above two years - 9.75%
3. Two years and above -9.75%
4. 0.50% of additional Interest to Senior Citizens
5. Bank advances Gold, Car, Salary, Housing Loans, House Mortgage etc. at attractive rate of interest.

STRENGTHEN THE FARMERS' BANK

FOR DETAILS, PLEASE CONTACT US OR OUR BRANCH OFFICES OR ANY PRIMARY CO-OPERATIVE AGRICULTURE AND RURAL DEVELOPMENT BANK IN THE STATE.

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Managing Director

जलवायु परिवर्तन और कृषि

ग्लोबल वार्मिंग, जलवायु परिवर्तन और इनके दुष्प्रभावों पर समय-समय पर काफी बहसें होती रही है। कहने की जरूरत नहीं है कि ये मुद्दे कितने महत्वपूर्ण हैं। जलवायु परिवर्तन के दुष्प्रभावों का समाधान निकालना आज हमारी पहली प्राथमिकता बन गई है। दरअसल जलवायु परिवर्तन इतना धीमा होता है कि हमें दिखाई नहीं देता है। दूसरे, इसे रोकने के लिए किये जा रहे उपायों को लोग विकास के विपरित कदम मानते हैं। यही कारण है की आज यह मुद्दा हमारे समक्ष एक बड़ी चुनौती बनकर खड़ा हो गया है।

सहस्राब्दि विकास लक्ष्य के तहत बेहद गरीबी और भुखमरी से पीड़ित लोगों की संख्या को वर्ष २०१५ तक आधा करना है, इसे प्राप्त करने हेतु कृषि एक महत्वपूर्ण विकासात्मक माध्यम है। विकासशील देशों की तीन-चौथाई जनसंख्या गाँवों में बसती है, और उनमें से अधिकतर लोग प्रत्यक्ष व अप्रत्यक्ष रूप में अपनी रोजी-रोटी के लिए कृषि पर निर्भर हैं। कृषि उत्पादन में वृद्धी अर्थव्यवस्था के अन्य क्षेत्रों की वृद्धि को भी उत्प्रेरित करती है।

भारत के सकल राष्ट्रीय उत्पाद में ३५ प्रतिशत हिस्सा कृषि का है। जलवायु परिवर्तन का प्रभाव खाद्य सुरक्षा एवं कृषि पर निर्भर लाखों लोगों की जीविका के लिए समस्या उत्पन्न कर सकता है। निम्नकोटि की भूमि और पानी की कमी जैसी समस्यायों के बढ़ने तथा भूमण्डलीकरण के अतिरिक्त दबाव के कारण कृषि का भविष्य मूलभूत रूप से प्राकृतिक संसाधनों के बेहतर प्रबन्धन पर आधारित होता जा रहा है। जलवायु परिवर्तन और कृषि दोनों एक दुसरे से संबंधित हैं तथा जलवायु में यह परिवर्तन आने वाली सदी में फसलोत्पादन व खाद्यान्न उपलब्धता को मुख्य रूप से प्रभावित कर सकता है। भारत जैसे देश में, जहां जनसंख्या का एक बड़ा हिस्सा प्रत्यक्ष या परोक्ष रूप से कृषि पर आधारित है, उसके लिए जलवायु में परिवर्तन की यह स्थिति और भी महत्वपूर्ण हो जाती है।

सौजन्यः सृजना

जलवायु परिवर्तन से संबंधित संयुक्त राष्ट्र संघ के अंतरशासकीय पैनल (यूएनआईपीसीसी) के आंकलन के अनुसार जलवायु परिवर्तन के प्रभाव से विकासशील देशों के सकल घरेलू उत्पाद में १.४ से ३.० प्रतिशत तक की गिरावट आ सकती है। भारत में, ग्लोबल वार्मिंग की समस्या और भी गंभीर होने की आशंका है। तापमान में यदि २ डिग्री सेल्सियस की वृद्धि होती है तो सकल घरेलू उत्पाद में ५ प्रतिशत की गिरावट आती है और इसी प्रकार तापमान में ६ डिग्री सेल्सियस की वृद्धि से सकल घरेलू उत्पाद में १५ से १६ प्रतिशत तक की गिरावट आती है। इस प्रकार, खाद्य एवं कृषि संगठन (एफएओ) के आंकलन के अनुसार भारत में कृषि पर पड़ रहे जलवायु परिवर्तन के प्रत्यक्ष प्रभाव के रूप में अनाज के उत्पादन में २५ मिलियन टन तक की क्षति होने की आशंका है।

प्राकृतिक संसाधनों के सही प्रबन्धन, प्रोत्साहन एवं उनमें निवेश के माध्यम से कृषि पर्यावरण में काफी सुधार लाया जा सकता है तथा प्राकृतिक संसाधनों के बेहतर उपयोग से धरती और उसकी जैव विविधता को सुरक्षित रखा जा सकता है।

जलवायु परिवर्तन के कुछ संभावित असर

यूएनआईपीसीसी में के पूर्वानुमान के अनुसार सन् २०१० तक ग्रीनहाउस गैसों के असर से तापमान में १.४ से ५.८ डिग्री सेल्सियस तक की वृद्धि हो सकती है और अवक्षेपण के पैटर्न में परिवर्तन के परिणामस्वरूप समुद्र के जलस्तर में १५ से १५ सेमी. तक की वृद्धि हो सकती है। वातावरण में कार्बन डायऑक्साईड, मीथेन, नाईट्रोजन औक्साइड, क्लोरोफल्लोरोकार्बन, आदि जैसी ग्रीनहाउस गासों की मात्रा में काफी तीव्रता से वृद्धि हो रही है। ये गैसें पृथ्वी से निकल रही विकिरणों को रोकती और सोख लेती है जिससे धरती की सतह का तापमान तो बढ़ता ही है, साथ ही धरती के वायुमंडल के निचले स्तरों का तापमान भी बढ़ जाता है। युएनआईपीसीसी की

रिपोर्ट के अनुसार तापमान में मात्र २ डिग्री सेल्सियस और वर्षा में ७ प्रतिशत की वृद्धि से फार्म स्तर पर कुल आय में लगभग ८ प्रतिशत का घाटा होता है। जल एवं उर्वरकों के अविवेकपूर्ण उपयोग से हम जलवायु परिवर्तन की इस समस्या को और गंभीर बनाते जा रहे हैं। यह अनुमान लगाया गया है कि वायुमंडल में एक वर्ष में जितनी मीथेन गैस उत्सर्जित होती है, उसमें से लगभग २०.४ प्रतिशत मीथेन गैस नाईट्रोजनीय उर्वरकों द्वारा उत्पन्न होती है जिसे ठहरे हुए पानी में धान की खेती के लिए प्रयोग में लाया जाता है।

तापमान में वृद्धि से वायुमंडल में कार्बन डाईऑक्साइड की मात्र में भी वृद्धि हो जाती है। यद्यपि वातावरण में कार्बन डाईऑक्साइड की मात्रा बढ़ जाने से पेड़-पौधों को बढ़ी हुई मात्रा में कार्बन डाईऑक्साइड उपलब्ध होगी जिससे वे अधिक तेजी से प्रकाश संश्लेषण करके तेजी से बढ़ सकते हैं, परन्तु ऐसा होता नहीं है वास्तव में उच्च तापमान से जैविक प्राक्रियाएं बाधित होती हैं जिसके फलस्वरूप उपज घट जाती है। बढ़े हुए तापमान के कारण पेड़-पौधों और मृदा से होने वाले वाष्पीकरण की दर में भी तेजी आ जाती है जिसके फलस्वरूप मिट्टी में उपलब्ध नमी पर प्रतिकूल प्रभाव पड़ता है। कार्बन डाईऑक्साइड के स्तर में वृद्धि से पेड़-पौधों की पत्तियों का आकार भी बड़ा हो जाता है जिसके कारण वाष्पीकरण भी तेजी से होने लगता है। जलवायु के तापमान एवं आद्रता स्तरों में इस परिवर्तन से परागण पर प्रतिकूल प्रभाव पड़ता है। इसके फलस्वरूप दाने कमजोर हो जाते हैं तथा पैदावार कम होती है। मिट्टी के तापमान एवं आद्रता में परिवर्तन से उसमें रहने वाले सूक्ष्म जीवों पर प्रतिकूल प्रभाव पड़ता है। जमीन की उर्वरता कम हो जाती है। उसके पोषक तत्वों में कमी आ जाती है और उसके पीएच स्तरों पर प्रतिकूल प्रभाव पड़ता है।

तापमान परिवर्तन वर्षा और अवक्षेपण के पैटर्न को प्रभावित करता है। इससे बारिश की अवधि और उसके फैलाव पर प्रभाव पड़ता है। यहीं नहीं, बारिश आने व बंद होने के समय पर भी इसका गहरा असर पड़ता है। वर्षा की अभिरचना में बदलाव का सीधा-सीधा असर पानी की भारी किलत के रूप में होगा, यह भी हो

सकता है कि मिट्टी में पानी छिज न पाए और अधिक मात्र में व्यर्थ बह जाए और बाढ़ की स्थिति उत्पन्न हो जाए। पुणे स्थित राष्ट्रीय जलवायु केंद्र के अनुसार गत कुछ वर्षों से देश के प्रमुख अनाज उत्पादक क्षेत्रों में जुलाई माह में कम वर्षा दर्ज की गई और अगस्त माह में अधिक वर्षा हुई। मानसून ढाँचे में एक और बड़ा बदलाव देखा गया है, वह है मानसून का पश्चिम की तरफ अधिक झुकाव, जिसके चलते कुछ विशेष क्षेत्रों में ही काफी बारिश पड़ जाती है, और वहां बाढ़ आ जाती है और दूसरे क्षेत्रों में सूखे और भुख्वमरी की स्थिति उत्पन्न हो जाती है। पर्यावरण और जलवायु का अधिक गर्म होना तथा साथ ही उसमें अधिक आद्रता का अर्थ है कीट-पतंगों की बड़ी संख्या और उनके जीवन चक्रों में वृद्धि जिसका सीधा असर अनाज, पशुओं और मनुष्यों पर पड़ता है। इस प्रकार वर्षा की अभिरचना में परिवर्तन से कृषि व्यवस्थाओं, गर्मी व ठंड के प्रारंभ तथा समाप्त होने के समय और तापमान में भी परिवर्तन होने लगता है जिससे फसल पद्धतियों पर भी बुरा प्रभाव पड़ने लगता है। उदाहरणार्थ शीतकालीन व रबी की फसलों उगाने के लिए उष्णकटिबंधीय देशों में शीत ऋतु में भी पर्याप्त ठंड का न होना। शीतोष्ण फसलों में बीजोत्पादन भी इस कारण प्रभावित हो सकता है।

फील्ड स्तर के कुछ अनुभव

विभिन्न पर्यावरण स्थितियों में रहने वाली प्रजातिया कार्बन डाईऑक्साइड। तापमान, आद्रता और प्रकाश आवर्तन में होने वाले हल्के-से-हल्के परिवर्तन के प्रति भी संवेदनशील होती है। नीम और जामुन में नई पत्तियों के आने, पहली बार पुष्टि होने तथा फलों के आने में परिवर्तन होते देखा गया है। वर्ष २००१ के दौरान यह देखा गया कि नीम में मई तक भी फलने के लक्षण विकसित नहीं हो पाए थे। जिसके फलस्वरूप बहुत ही कम बीजों का उत्पादन हुआ था।

देरी से बोई गई बोडो धान में निषेचन के पूर्व ही पराग नली के सूखे जाने के कारण धान के खोखल पाये गए। फरवरी के मध्य में बारी-बारी उष्ण और शीत लहरों के प्रभाव से पौधों की डंठले झुक गई, जिससे उनका परागण बुरी तरह प्रभावित हुआ।

फरवरी के मध्य में पहले उष्ण फिर शीत लहरों के आने के कारण पश्चिम बंगाल के पश्चिमी क्षेत्र में आम में बौरा आना प्रभावित हुआ।

यह देखा गया है कि कुछ क्षेत्रों में अनियमित वर्षा के कारण धान में बुवाई के तत्काल पश्चात कुछ ही दिनों में उनमें अंखुए निकलने लगे।

तापमान, वर्षा आदि में परिवर्तन के प्रभाव से काजू एवं खीरा वर्ग में नर फूलों की संख्या में वृद्धि देखी गई है।

कुछ अरसे से दक्षिण बंगाल में मार्च माह के दौरान बार-बार आने वाली भारी आंधी ने किसानों को सिर्फ मिर्च उगाने पर मजबूर कर दिया है। पहले वे मिर्च के साथ-साथ तरबूज की खेती भी करते थे। अब वे केवल मिर्च की खेती ही करते हैं।

कुछ किसानों ने अनाज की देसी किस्मों को फिर से अपनाना शुरू कर दिया है क्योंकि उनकी खेती करना अधिक लचीला होता है।

जलवायु परिवर्तन और भारत सरकार

३० जून २००७ को प्रधान मंत्री श्री मनमोहन सिंह ने जलवायु परिवर्तन पर भारत की पहली राष्ट्रीय कार्ययोजना (एन.ए.पी.सी.सी) जारी की जिसमें जलवायु उपशमन एवं अनुकूलन के लिए वर्तमान और भविष्य की नीतियों को रूपरेखा दी गई है। इस योजना के अंतर्गत आठ राष्ट्रीय मिशनों की पहचान की गई है जो सन २०१७ तक चलेंगे उच्च आर्थिक विकास के माध्यम से जीवन स्तर में सुधार लाने की आवश्यकता पर प्राथमिक रूप से जोर देते हुए इस योजना में “ऐसे उपायों की पहचान की गई है जिनके माध्यम से विकास संबंधी उद्देश्यों की पूर्ति के साथ-साथ जलवायु परिवर्तन का प्रभावशाली समाधान हूँडने में भी सहायता मिलेगी। “योजना के अनुसार ये राष्ट्रीय उपाय विकसित देशों की सहायता से अधिक सफल हो पाएंगे। इस योजना के अंतर्गत यह संकल्प लिया गया है कि विकासात्मक उद्देश्यों को प्राप्त करने के लिये किसी भी समय भारत में प्रति व्यक्ति ग्रीनहाउस गैसों का उत्सर्जन विकसित देशों

की तुलना में अधिक नहीं होने जाएगा। संबंधित मिशनों के कुछ अंश नीचे दिए जा रहे हैं।

१. **राष्ट्रीय जल मिशन**-जलवायु परिवर्तन के प्रभाव से पानी कमी की स्थिति और अधिक बिगड़ने की आशंका है। इस बात को ध्यान में रखते हुए इस योजना में यह लक्ष्य निर्धारित किया गया है कि मूल्यन और अन्य उपायों के माध्यम से पानी के प्रयोग में २० प्रतिशत का सुधार लाया जाएगा।
२. **हिमालयी पारिस्थितिकीय तंत्र को दीर्घकाल तक बनाए रखने के लिए राष्ट्रीय मिशन** - भारत में जल आपूर्ति के प्रमुख स्रोत ग्लेशियर हैं जो ग्लोबल वार्मिंग के कारण कम होते जा रहे हैं। इसे ध्यान में रखते हुए इस योजना में हिमालयी क्षेत्रों की जैव विविधता, वन संपदा तथा अन्य पारिस्थितिकीय मूल्यवान निधियों को संरक्षित करने का लक्ष्य निर्धारित किया गया है।
३. **हरित भारत हेतु राष्ट्रीय मिशन** - इस योजना का लक्ष्य है, ६ मिलियन हेक्टेयर खराब वन भूमि पर वृक्षारोपण करना ताकि भारत का वन क्षेत्र २३ प्रतिशत से बढ़कर ३३ प्रतिशत तक हो जाए।
४. **दीर्घकालिक कृषि के लिए राष्ट्रीय मिशन**- जलवायु के अनुकूल फसलों की किस्मों का विकास, मौसम बिना व्यवस्था और कृषि पद्धतियों के विस्तार के माध्यम से बदलती जलवायु के अनुकूल खेती अपनाने की प्रवृत्ति को विकसित करना इस योजना का लक्ष्य है।

भारी कार्यनीति

विभिन्न कार्यक्रमों के कार्यान्वयन से प्राप्त अनुभवों, किसानों, राष्ट्रीय संसाधन प्रबंधन से संबंधित कार्यकर्ताओं से हुए संवादों तथा इससे संबंधित साहित्य की समीक्षा से कुछ उपनाने योग्य कार्यनीतियां उभर कर साईं हैं, जिन्हें नीचे दिया जा रहा है।

१. **वाटरशेड दृष्टिकोण**-जल संरक्षण तकनीकों के अलावा वाटरशेड दृष्टिकोण प्रभावी उपाय है। इनमें भूगर्भ जल को रिचार्ज किया जा सकता है।

और मिट्टी के कटाव में भी काफी कमी लाई जा सकती है और इससे कार्बन पृथक्करण को बढ़ाने में भी सहायता मिलती है।

२. **वर्षा जल संरक्षण संरचनाएं** - छत पर बारिश का पानी जमा किया सकता है, खेतों में ही डोबा, हापा आदि में बारिश का पानी इकट्ठा किया जा सकता है जिससे वर्षा के जल के संचय के साथ-साथ भूमि को भी बेहतर ढंग से रिचार्ज किया जा सकता है तथा भविष्य में उस पानी का उपयोग किया जा सकता है। डोबा खेत में खोदा गया ३ मी. x १.५ मी. x १मी. माप का गड्ढा होता है जिसे प्लास्टिक शीट से ढका जाता है और उसमें बारिश का पानी इकट्ठा किया जाता है। जबकि हापा भी एक गड्ढा ही होता है किन्तु उसका आकार बड़ा होता है यह किसान की भूमि के ५ प्रतिशत क्षेत्रफल में फैला होता है तथा यह मॉडल ५४ मॉडल के नाम से प्रसिद्ध है। ३०-४० मॉडल में, किसान की समग्र भूमि को ३० फुटं ४० फुट के प्लोटों में विभाजित कर लिया जाता है तथा प्रत्येक प्लोट के सबसे निचले हिस्से में वर्षा का पानी इकट्ठा करने हेतु एक गड्ढा खोद दिया जाता है। ये सभी मॉडल काफी कारगर सिद्ध हुए हैं।

३. **उत्पादकता में वृद्धि** - सर्वोत्तम कृषि पद्धतियों का प्रयोग, भूमि के जैविक तत्वों में वृद्धि तथा जैव उर्वरकों व कीटनाशकों का कम से कम प्रयोग करके हम उत्पादकता में काफी वृद्धि ला सकते हैं। कार्बनिक व हरी खाद, एकीकृत पोषण प्रबंधन, एवं जैव कीटनाशकों के उपयोग के साथ-साथ मिट्टी की नमी संरक्षित करने की पद्धतियां अपनाने हेतु किसानों को प्रोत्साहित किया जाना चाहिए।

जल्दी व देर से बोई जाने वाली किस्में अपनाई जाए और ऐसी किस्मों का चिकास किया जाये जिन पर ताप का असर कम हो और जो पानी की कमी में भी जीवित रह सके।

४. **फसल क्रम में परिवर्तन** - फसल क्रम, पैटर्न और फसल की पद्धतियों में परिवर्तन लाया जाए। उदाहरण के लिए पारंपरिक धान की खेती के स्थान पर एसआरआई धान की खेती की जा सकती है। एसआरआई धान की खेती में काफी कम पानी लगता है और उसमें जैव उर्वरकों का प्रयोग किया जाता है जिससे मीठेन गैस के उत्सर्जन में भी काफी कमी आती है। ऐसआइआई धान के बाद मसूर और चने जैसी दाल की फसलों की खेती की जा सकती है। बंगाल के पश्चिमी क्षेत्रों में कम समयावधि में होने वाली धान की फसल-उसके बाद आलू की शीघ्र फसल-फिर तिल/मूँगफली की फसल जैसे नए पैटर्न अपनाए जा रहे हैं। इन नए पैटर्नों/क्रमों का अध्ययन और प्रचार-प्रसार किया जाना काफ आवश्यक है।

५. **नए और नवोन्मेषी उपाय** - पटसन की खेती वाने क्षेत्रों में पानी की कमी और पटसन की कटाई और धान की अगली फसल की बुआई के बीज की अपर्याप्त समयावधि के कारण कई किसानों ने पटसन की खेती ही करना छोड़ दिया है। पटसन गलाने की नई व नवोन्मेषी प्रौद्योगिकी (जिसमें पानी और समय काफी कम लगता है- तथा बेहतर किस्म के पटसन का उत्पादन होता है) और एसआरआई धान के प्रादृभाव से अब किसान फिर से पटसन और धान दोनों फसलों की खेती करने की स्थिति में आ गए हैं। नाबाई द्वारा स्थापित प्राकृतिक संसाधन प्रबंधन केंद्र भी डोबा वाले इसी मॉडल का प्रचार-प्रसार करता आ रहा है ताकि पटसन को गलाने के कार्य के साथ-साथ डोबा का उपयोग जल संरक्षण ढांचे के रूप में भी किया जा सके। पटसन गलाने हेतु इस्तेमाल किया गया पानी बाद में एसआरआई धान की सिंचाई के काम आ सकता है।

६. **वैकल्पिक उपयोग/भूमि का दक्षता से उपयोग** - ऊंचाई वाले क्षेत्रों की भूमि अक्सर पानी के अभाव और मिट्टी की पतली पर्त के कारण बंजर पड़ी रहती है। इन जमीनों में हापा जैसे छोटे-छोटे

वर्षा जल संरक्षण ढांचे बनाकर इनमे पशु-चारे के रूप में काम आने वाले तथा ईंधनोपयोगी पेड़-पौधों की खेती की जा सकती है। इसी प्रकार मध्यम ऊंचाई वाले क्षेत्रों की जमीनों में भी छोटे-छोटे जल संरक्षण ढांचों में एसआरआई धान और सब्जियों की खेती की जा सकती है। जिससे खाद्यान्न उत्पादन में वृद्धि होगी। नवाई के बाड़ी कार्यक्रम के अंतर्गत बागवानी आधारित उत्पादन की अवधारणा इस मामले में काफी प्रभावशाली सिद्ध हो सकती है। बाड़ी में फलदार पोड़ों के साथ बीच-बीच में चारा उत्पादक/ईंधनोपयोगी पेड़ और साथ ही अंतः फसल के रूप में सब्जियां भी उगाई जाती हैं। निचले क्षेत्रों में जहां पानी जमा होना एक आम मुद्दा होता है वहां मछली-पालन सबसे उत्कृष्ट विकल्प है। धान की दोहरी फसल-मछलीपालन-बतख पालन/वर्षा जल संरक्षण हेतु खोदे गए तालाबों में शॉवाल-तालाबों के किनारों/मेड़ों पर सब्जी की खेती / फलदार पेड़ों का रोपण जैसे एकीकृत कृषि मॉडल, बंगाल के दक्षिणी क्षेत्रों में धान की परंपरागत एक फसल बाली खेती के स्थान पर एक प्रभावशाली विकल्प के रूप में सामने आए हैं।

६. **विविधीकृत खाद्य उत्पादन** - आम तौर पर खेती में अनाज का उत्पादन किया जाता है जो मुख्य रूप से कार्बोहाईड्रेट संबंधी हमारी जरूरतों को पूरा करता है। अनाज के अलावा हमें अपने खेतों में ही उपलब्ध संसाधनों के पुनःचक्रण/पुनःउपयोग द्वारा सब्जियां, फलों का उत्पादन करना चाहिए। अंडों व मांस के लिए छोटे पशुओं का पालन करते के साथ मछली पालन जैसे कार्य भी करने चाहिए। उदाहरण के लिये - बकरी अरहर के डंठल खाती है, इस प्रकार जहां भी अरहर उगाई जाती है, वहां बकरी-पालन गतिविधि स्वतः ही शुरू की जा सकती है। इसी प्रकार धान उगाने वाले क्षेत्रों में मशरूम उगाया जा सकता है। मछली और बतख पालन के लिए वर्षा जल संरक्षण ढांचों का अच्छा उपयोग किया जा सकता है। खाद्य असुरक्षा को दूर करने के

लिए मुर्गोपलन एक अन्य उपाय सिद्ध हो सकता है।

c. **स्थानीय प्रौद्योगिक ज्ञान** - किसान को जलवायु परिवर्तन का सामना करने के लिए किसानों ने अनाज की किस्मों और खेती क्रम में बदलाव किए हैं और इन्हें बेहतर विकल्प के रूप में अपनाया है। जरूरी है कि हम किसानों द्वारा अपनाई गई इन प्रौद्योगिकियों को पहचाने और उनका प्रसार करें।

९. **जलवायु संबंधी ज्ञान** - किसानों को जलवायु संबंधी जानकारी प्रदान करना, जलवायु परिवर्तन के प्रभावों से परिचित कराना और उसके बारे में जागरूकता पैदा करना अपेक्षित है ताकि उसके अनुसार अपनाई जाने वाली प्रणाली मुहैया कराई जा सके।

कृषि उपकरणों विशेषकर पंपसेटों की कार्यक्षमता में सुधार लाना तथा बिजली की बजाय सौर ऊर्जा और अन्य अक्षयी (नवीकरणयोग्य) ऊर्जा के उपयोग को बढ़ावा देना चाहिए।

नीतिगत परिवर्तन विशेषकर उर्वरकों, कीटनाशकों सिंचाई हेतु बिजली और जल प्रभारों पर सविधि में नितिगत परिवर्तन किए जाने की आवश्यकता है।

यद्यपि जलवायु के कृषि पर वास्तव में पड़ने वाले प्रभावों के संबंध में अनुसंधान से कोई निष्कर्ष सामने नहीं आ सके हैं और जो भी निष्कर्ष उपलब्ध है की हमें इन प्रभावों का सामना करने और बढ़ती जनसंख्या के लिए खाद्य सुरक्षा सुनिश्चित करने हेतु विविध कार्यनीतियों को अपनाना होगा। प्राकृतिक संसाधन प्रबंधन के क्षेत्र में कार्यरत सभी एजेंसियों जैसे अनुसंधान संगठनों, विस्तार एजेंसियों, नीति बनाने वाले निकायों, नबाई जैसे विकास संगठनों को जलवायु परिवर्तन के प्रभावों



THE MEGHALAYA CO-OPERATIVE APEX BANK LTD.

HEAD OFFICE : SHILLONG
 (Government of Meghalaya Sponsored Bank)
 Estd. 16th February, 1971

Phone : 0364-2224166 / 2224160
 E-mail : apexbank@sancharnet.in
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A premier State Cooperative Bank in the North-Eastern Region having democratically elected Board of Directors since inception and managed by professionals.

FINANCIAL HIGHLIGHTS

	(As on 31.03.2011)	(As on 31.03.2012)
• Paid up Share Capital & Reserves	: ₹ 5209.10 Lakhs	₹ 7425.37 Lakhs
• Deposits	: ₹100273.24 Lakhs	₹ 118361.93 Lakhs
• Loans & Advance	: ₹ 34218.84 Lakhs	₹ 42223.38 Lakhs
• Investments	: ₹ 39898.78 Lakhs	₹ 47239.12 Lakhs
• Money Call & Short Notice	: ₹ 32898.43 Lakhs	₹ 41609.52 Lakhs
• Net Profit	: ₹ 2210.26 Lakhs	₹ 1117.82 Lakhs
• Working Capital	: ₹121827.43 Lakhs	₹ 145392.22 Lakhs

Our Banking Products & Services

- *Current Deposits*
- *Savings Bank Deposits*
- *No Frills Savings Deposits*
- *Fixed Deposits*
- *Recurring Deposits*
- *Monthly Income Deposits*
- *Double Benefit Scheme*
- *Cash Certificates*
- *Fixed Deposit linked with RDs*
- *Housing Loan Linked Deposits*
- *Children Education Deposits*
- *Crop Loans for Agriculture through KCC / SHG / JLG Cooperatives*
- *Term Loans for Agril. & Allied Agriculture*
- *Aquaculture Development One Thousand Ponds Scheme*
- *Loans for Housing/Housing Complex*
- *Loan for SRTO*
- *Consumer Durables Loans*
- *Loans to Technocrats & Professionals*
- *Loans to educated unemployed youths*
- *Cash Credit & Overdraft Facilities*
- *Loans for Children Education*
- *Loans for women through WDC Cell*
- *Integrated Village Development Scheme*
- *Term Loan for Tourism Development*
- *Personal loan to salary earners*
- *Bank Guarantee*
- *Safe Deposit Lockers & Other Ancillary Services*
- *Loans to Tribals under NSTFDC Schemes*
- *Loans to Physically Challenged under NHFDC*

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Mr. D.F. War
 Managing Director

M. Rahman
 Vice-Chairman

W. K. Kyndiah
 Chairman

LEARN THE FRUIT PLANT

Dr. R. K. Tyagi*

Though it is not required but it can be very useful for the farmers if they first study the morphology and anatomy of the branch and root system of the principle fruit plants suitable for there area and then go over to the fruits commercially grown in there fields as the same time covering the botanical and biological peculiarities of the most important wild fruit plant.

To achieve a quick expansion in orchard territory the collective and state farm requires considerable quantities of quality planting material. Therefore it is the task of the nurseries to step up production in desirable quantity and of quality.

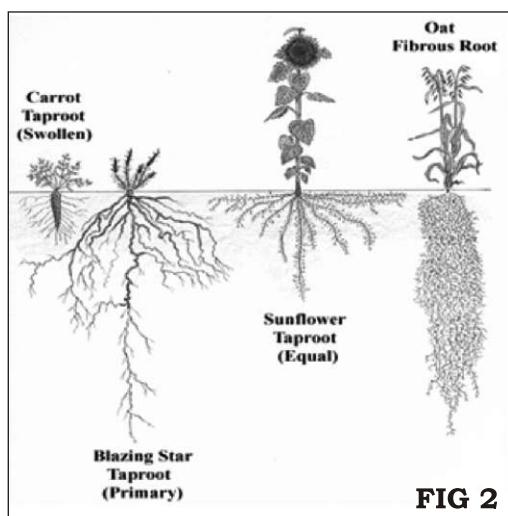
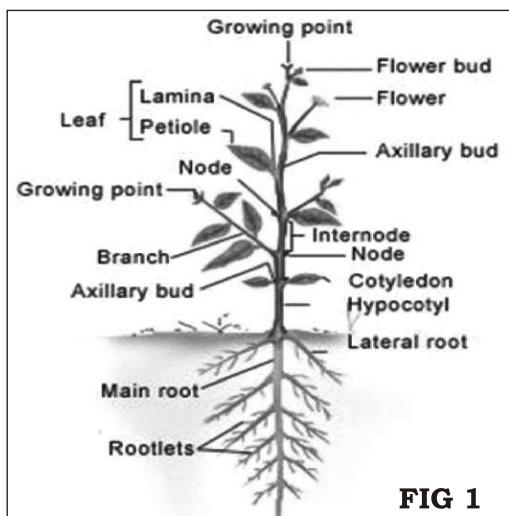
Depending on size, longevity and certain morphological characters the fruit plants, may be grouped as follows.

1. Trees with a powerfully developed stem: - Pecan,

Walnut, Sweet Chest Nut, Pear, Sweet Cherry and Apple.

2. Trees with less developed stem: - Apple, Quince, Apricot, Persimmon, Plum, Sour Cherry.
3. Shrub like trees: - Sour Cherry, Plum, Peach, Filbert, Fig, Pomegranate.
4. Shrubs: - Gooseberry, Currents.
5. Semi shrubs or brambles: - Raspberry.
6. Vines: - Grapevines, Actinidia, Schizandra.
7. The Herbaceous perennials: - Strawberry and Cranberry.

All fruit plants possess three main vegetative organs. The roots, the stem and the leaves. The other parts of the main organs, the fruit plants possess developed root and shoot systems.



Root System

1. Root System of generative origin: - Budded or grafted on the stocks.
2. Root System of vegetative origin: - Soft Fruit, e. g. a) Strawberry, Current and b) Subtropical fruits, e.g. Olive, Fig Pomeberry, Stem Cuttings, Clonal root Stocks, Pear on Quince, layers, etc.
3. Root System of vegetative origin: - having developed Fan stems or sour out of the roots of parent plant, Sour Cherry, Plum, And Raspberry.

Depending on size (length and thickness) the roots are grouped as follows.

- 1) Main or seaf-fold roots: - long 0.3 to 14 m., thick up to 10 cm.
- 2) Fibrous roots: - Fraction of mm. to several cm. and thin up to 3 mm.

Depending on the type of distribution:-

- 1) Horizontal Roots
- 2) Vertical Roots

- The tip of the root (the last 3mm portion) had no root hairs.
- In apple (*m. sieversii* pop) root hairs average length 81.6 microns and maximum length 163.6 microns.
- Root hairs live for 18 days in apple, 26 days in quince, Tran 10-40 days in grapes (depending on the order of branching and time of formation) and form 10-27 to 190-320 days in strawberry (depending on time of formation).

Depending on morphological and anatomical structure and functions, the fibrous roots are divided into four types.

- 1) The growing, or axial roots are of primary structure white in

Length of Root Hairs in Fruit Plant (Microns)

Species	Range of Length Observed	Predominant Length
Apple (various sp. wild apple)	60-750	-
Wild Apple	140-260	180-240
Pear (various species)	50-235	-
Ussurian Pear	50-80	60-70
Sour Cherry	380-520	400-450
Mahalab Cherry	400-560	450-500
Plum	280-340	300
Peach	240-600	350-450
Strawberry	750-1200	1200
Raspberry	140-270	180-210
Black Current	380-500	400
Grape Vine	240-460	300
Fig	200-460	260-400
Lemon	45-60	50

colour, with a large meristematic zone and an ability to absorb.

2) The absorbing, or active roots:- they are also called the feeding roots. Their main function is to absorb water and mineral substances from the soil and to transform them into organic compounds. They do not develop secondary growth and are short lived.

i. A. moromtsev (1963) studied in detail the sequence of tissue development in secondary growth of growing, absorbing root and established that there are two types of the process involved, which he called synchronous and asynchronous. He based his division on the morphogenetic and anatomic peculiarities observed.

ii. In the synchronous type, the cambium and the cork producing layer, called cork cambium or phellogen, are beneath the primary cortex of a growing or absorbing root and being functioning simultaneously or almost simultaneously, after which the cortex atrophies quite rapidly and is shed, as is the case in apple, pear, quince, sour cherry, plum, and apricot. The life of primary cortex is normally from 12 to 30 days.

iii. In the asynchronous type, the phellogen is developed some time after the cambium. In some species like walnut, filbert and sweet chestnut, only 3-10 days interval between cambium formation and phellogen formation. While in others such as strawberry, raspberry, avocado, and lemon. This period reaches 30-100 days. In the later group the primary cortex functions for a long time and atrophies only after a considerable growth of the root and following cork formation.

3) The intermediate roots are of primary structure, light grey in colour, sometimes with a liliac tinge, as in apple. The presence of intermediate roots is a good indication in assessing the stage of root growth; it shows that the root system has been active at least for one to three weeks.

4) The conducting roots are of secondary structure, light & dark brown in colour. They usually arise from the growing roots whose primary cortex has atrophied and been supplanted by secondary cortex, after which they grow thick and thicker every year until they become lateral or main roots.

Their function is to conduct water and nutrients in both directions, as well as to anchor the plant.

In general it can be said that the deeper the roots the bigger will be their tissue cells.

Root Hair

A root hair is a tubular out growth of the outer wall of a cell in the epidermis of the absorbing zone of the root. It is a cell in itself and has protoplasm with a nucleus. Its cell wall is very thin, which facilitate water intake. All trees and soft fruits have root hairs. No root hairs were found in avocado.

Vegetative and fruiting growth

1. Pome-fruits the Shoot: - A stems which is one year old, or less, it is called a leader, or extension shoot, it has been selected to extend the branch framework of a tree, or a maiden lateral if it is a lateral shoot. In pomefruits, shoots as a rule bear no fruit buds.
2. "Premature" Shoots, young lateral growths which have develop in summer from the lateral buds of a shoot in its first year.
Premature Shoots are a rare occurrence with the pomefruits but are often developed by the

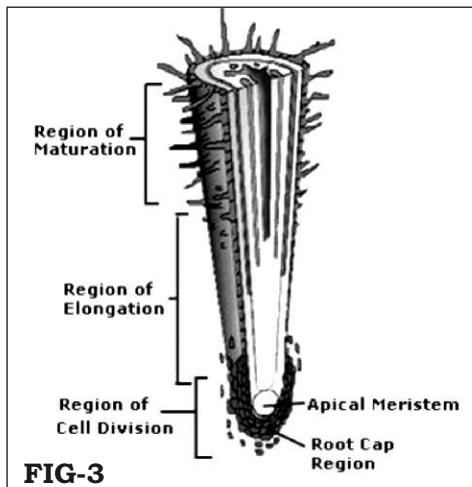


FIG-3

stone fruits, particularly by sour cherry & plums.

3. The water sprouts, vertically growing shoots arising from dormant and adventitious buds on old wood (owing to old age, hard pruning, breakage, etc.) they have long inter nodes and large leaves. In time if their growth is impeded or they are clipped, they become ordinary branches.
4. The brindilles, thin lateral shoots about 7-30 cm to usually ending in a fruit bud. Normally they are thin and bend more easily then vegetative shoots.
5. The Dard, a short lateral shoot, not more than 5-10mm. long, usually ending in a fruit bud. They are straight some what thicker at the base than at the top and have shortened inter nodes and very closely spaced lateral buds.
6. The spur, a short lateral branch with the nodes close to gather often largely consisting of successive bourse one year old spurs are from 2-3 mm. to 2-3 cm long, with rudimentary lateral buds, ending in a well developed wood or fruit bud.

They occur below Dard at right angles to the branch.

7. The spur system or compound spur is a short compound fruiting branch made up of several spurs.

As a rule, fruit spurs and spur systems increases in length slowly being covered from year to year by ring-shaped scars where closely spaced bud scar and leaf petioles were once attached. There annual rings help to make a fair estimate of the age of a fruit spur. This is the most essential, for good fruiting can usually be expected from 6-10 years old spur-while spur system of 10-15 or more years old mostly just flower or bear poor-quality fruit. Beside been unproductive, such flowering entails unnecessary expenditure of nutrients anis, therefore, remedied by thinning out to encourage new growth to form.

Finally, there are bourses which are swollen stems at the base of the inflorescence in pomefruits. They are formed of phloem tissue swollen by the food material stored in it and are particularly large in pears and certain apple varieties. The bours retains marks where fruit and even flowers and ovaries were attached year ago, by which the quality and quantity of the previous year's cropping as well as a tree care can be assessed.

The Stone Fruits have following formations

- 1) The Shoots
- 2) The Premature Shoots
- 3) The Water Sprouts

- 4) Fruiting Branches: growth of previous year 10-40 cm
- 5) Mixed Shoots and Branches: fruit bud & wood buds alternate all along their length.
- 6) Bouquet Branches: shortened fruiting branches 0.50 cm to 3 cm. long ending in a cluster bud of which 1 or 2 are wood buds and 4-10 are fruiting fruit buds.
- 7) The Dards: short fruiting shoots in European plum and apricot varieties from 0.5 to 8-10 cm long. The Dard of a plum may end in a thorn; they live from 2 to 5 years.

The branches of many fruit plants bear certain other growths known as:

- 1) The thorn or spines-They are protective formation of stem origin. They are short modified branches arising in the axils of leaves and characteristics of apple, pear plum, blackthorn, myroblan, plum, apricot, etc.
- 2) The prickles-There are multi cellular excrescence of the bark as in goose berry.

The buds, fruit plants have vegetative or wood buds (also called growth buds) ensuring the development of the branch system of the tree and reproductive or fruit buds (also called blossom buds) from which flowers and then fruits develop.

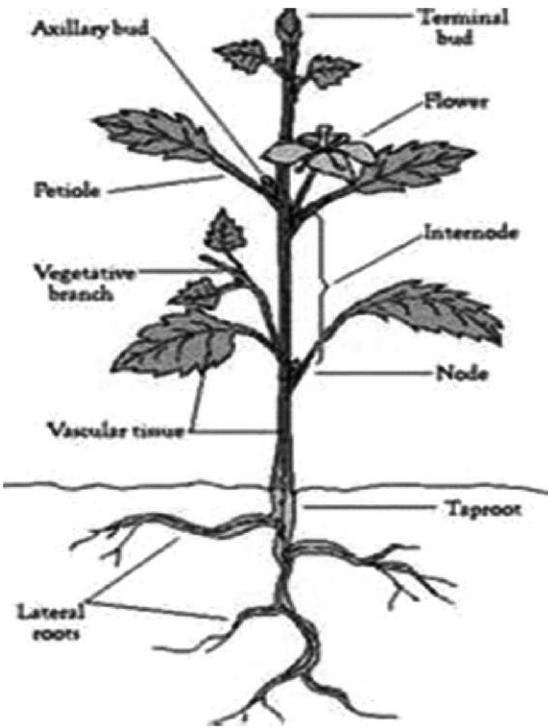
In general reproductive buds are larger than the vegetative buds. The vegetative buds may be born either terminally at the tip of the shoots, in which case they are called terminal or apical bud, or on the sides of shoot when they are known as lateral buds. In the same way, the reproductive buds may be born either terminally, at the tip of the shoots, as in apple and pears (in most varieties which in consequences are known as tip bearers), quinces, olives (in some varieties), and nuts (the female flowers), or on the side of shoots, as in all stone fruits, nuts (the male flowers), sub-tropical fruits, and in apple and pear (sometimes).

The vegetative or wood buds may be of the following types: - (1) terminal (2) axillary (3) dormant and (4) adventitious.

(1) The Terminal or Apical buds:

They terminate growing branches and the shoots on them upon development. Such a bud gives rise to a shoot with inter nodes and leaves again terminating in a wood bud.

(2) The Axillary buds: These are



situated in the axils of leaves of all leaf-bearing branches and shoots. As a rule three buds arise in leaf axils out of which one or two are blind and hidden in bark of the shoot or branch. The better developed axillary buds are located in the middle

part of shoot or higher in apple, pear and quinces, in the lower part in currants and gooseberries and at the base in raspberries. Some of the stone fruits develop wood buds collaterally with fruit buds in the same leaf axils.

(3) The Dormant buds: The Dormant buds occur in the axils of leaves and, in most varieties, at the base of every stem. They are recognized by minute size and few embryos leaves, and are sometimes practically invisible. They may remain dormant for a longer time growing slightly every year due to terminal growth of the shoot (by no more than the increase in shoot girth). The

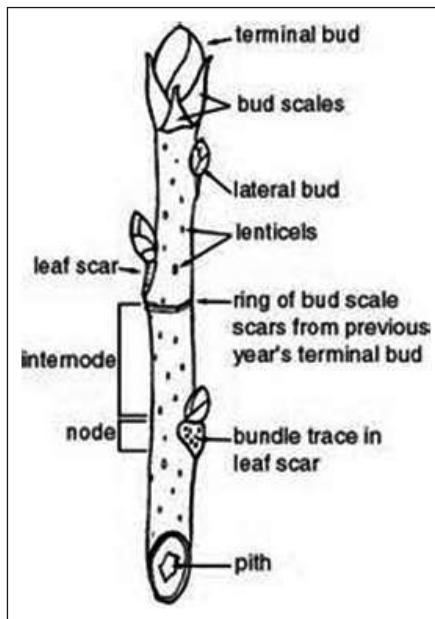
dormant buds of apple and pears may remain alive tens of years, those of sweet cherries, plums, apricots and particularly of peaches and sour cherries being less viable. They may start into vigorous growth and produce a shoot through same stimulation such as pruning heavy leaf damage, normal-bud damage, etc.

(4) **The Adventitious buds:** The adventitious buds are poorly if at all differentiated bud initials that may arise anywhere outside of the axils of leaves, once the ability of most of fruit plants to produce adventitious buds depend vegetative propagation, tree shaping and pruning.

The reproductive buds or fruit buds are of three types: (a) Simple, (b) Mixed, and (c) Multiple.

(a) **Simple buds:** Simple buds arises on sides of vegetative or fruiting wood and contain only embryo of flowers; they are the characteristic of stone fruits, the walnut and filbert nut (the male flower) and of red and white currants and lemons.

(b) **The Mixed buds:** The mixed



buds are born either terminally or axillary on fruiting wood and contain not only reproductive but also vegetative parts and leaf initials; there are the characteristic of the pomefruits, and of raspberry, black currant, gooseberries, persimmon, fig, walnut, sweet chestnut and filbert (the female flower).

(c) **The Multiple buds:** These are double and triplet buds that occur in the leaf axils of some stone fruits (sometimes only in certain varieties) in the following combinations:- One wood bud and one fruit bud; two fruit buds and with one wood bud in between, two and rarely, three fruit buds.

The best combination is a triple, with a wood bud between two fruit buds, which produces both fruit and leaves; in this case normal supply of nutrients substances are ensured. When only fruit buds arise on a maiden lateral, which sometimes occurs in peaches, such as a shoot is removed as unfruitful, the practice being known as disbudding.

No clear cut distinction can be drawn between vegetative and

reproductive buds, since in certain conditions vegetative buds can develop into reproductive buds.

Anatomical features of vegetative and fruiting growths. A transverse section through a shoot or branch will show an examination; the following main parts of the tissue:

- (1) Outer part-Bark covered with cork tissue.
- (2) Middle part-Wood or xylem
- (3) Cambium-The thinnest layer of tissue between bark and wood.

The cambium, or lateral meristem, consist of thin walled elongated living cells rich in protoplasm and containing a large nucleus. Every year all stems increase in girth through division of cambium cells, which cut off new cells (bigger in spring and smaller in autumn) on both tangential faces, the cells towards the centre differentiating into xylem (wood)-elements and the cells towards the outer-side into phloem (inner bark or bast)-elements, thus the wood and bast tissue are connected all along the stem in cylinder arrangement, which allows for quick conduction of water and nutrients substances upward, mainly through the xylem vessels and tracheids, and downwards through the phloem sieve tubes.

It has been established that as a shoot develops into fruiting wood its anatomy greatly changes, viz. the amount of its living, unlignified phloem tissues increases while that of xylem decreases.

With the more phloem tissue, the fruiting branches develops the more food reserve they have, since these tissues are better equipped for storage.

Floral Morphology

If male and female flowers are on the same plants are called monoecious and if the sexes are separated into the inflorescences or different plants such plants are called dioecious.

Monoecious-Nuts filbert, walnut, pistachio, sweet chestnut, and pecan. All are anemophilous, i.e. pollinated by wind.

Dioecious-Hautbois and fig, knowledge of flower morphology is essential particularly when planting pollinators together with female flowered plants such as hautbois, fig, persimmon and mulberry.

Morphology and Anatomy of Fruit:

1. True Fruits: are berries and drupes.
2. The false fruits are formed from whole flower, including receptacle and ovary, making a composite structure. These are apple, pear, quince, rowan, hawthorn, pomes, walnut, filbert, sweet chestnut, are also called false because they are enclosed in united bracts.
3. The aggregate fruits: strawberry, raspberries, dewberry.
4. The inflorescent or infructascence e.g. fig, mulberry.



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Kisan Credit Card: KCC for Purchase of Fertilizers, pesticides, equipments and maintenance, and payment of electricity bills etc. It is a medium term credit requirement of its borrowers who are regular in their repayment obligation to the Bank.

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5. All the loans issued by the Bank are theoretically recoverable since they are secured by registered mortgage of land and as such FDs mobilized by the Bank are fully secure.
6. Loan against FD to the extent of 75% of FD is available.

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Women's Leadership in Micro Finance: Issues and Challenges

Dr. Vibhuti Patel*

Introduction

Nineties was a difficult decade for both the urban and rural poor women as women were rapidly losing their livelihood base due to structural adjustment programmes and macroeconomic stabilization policies. Reduction in budgetary allocation for social sector (privatization of education and health as well as dismantling of public distribution system) and privatization of essential survival needs made lives of poor women unbearable. Draught in several parts of India and liberalization of agrarian market added fuel to fire with increasing numbers of farmers' suicides and starvation deaths. It was in this backdrop, that women's leadership in microfinance thro' Self Help Groups (SHGs) came to the fore to provide safety net to the poorest of the poor women initially in the four Southern States- Karnataka, Andhra Pradesh, Kerala and Tamilnadu and during the 21st century all over the country.

The UN Commission on Status of Women in 2007 advised the leaders of the member countries to fully maximize the role of, as well as ensure access to, microfinance tools, including microcredit for

poverty eradication, generation of employment and especially for the empowerment of women, encourage the strengthening of existing and emerging microcredit institutions and their capacities, including through the support of international financial institutions, and ensure that best practices are widely disseminated. Microfinance is perceived as an effective strategy to reach the Millennium Development Goals. (Elizabeth et al, 2003).

Micro finance through Self-Help Groups (SHGs) has proved to be a strategic measure for organizing women in groups and promoting savings and thrift habits to gain access to institutional credit for their socio-economic development and empowerment. (DWCD, 2005). It empowers women since it instills a perception of strength, self reliance and confidence when the poverty trap is broken. "The entire process of forming a group, of functioning in a sustained manner, of regulating finances, and being mutually accountable, is in itself projected as empowering. An important dimension of SHGs is the peer pressure, which the members of a group exert amongst themselves, which acts as a

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substitute for formal collateral in that it is taken as the guarantee for loan repayment." (Deshmukh-Ranadive, 2008). Two important features of this model are self selection of group members that bypasses the adverse selection problem and peer monitoring tackling moral hazard problem (Stiglitz, 1990).

This sector requires credit policies that lead to the creation of productive processes and assets and sustainable institutional development. Most of the SHGs continue to engage in traditional stereo-typed, low return activities and the fundamental livelihood concerns of the rural poor women remain largely un-addressed (Report, 2007). Questions are asked by women's studies scholars: "Can women's empowerment happen within a larger context that is disempowering? And, can exclusive programme focus on women help change gender and caste based inequalities?" (Lingam, 2008)

Rays of hope are coming from micro credit institutions which are combining economic agenda along with nurturance of women's leadership for agenda of social justice, gender justice and women's rights to dignified and secure life (Kazi, 2007). In India, such efforts are made by Self Employed Women's Association (SEWA), Parivar Vikas of Stree Mukti Sangathan (Mumbai), MASUM (Pune), Sakti (Bangalore), Mann

Deshi Mahila Sahakari Bank (Maharashtra) in the voluntary sector. In the government sector, MAHILA SAMAKHYA programmes in Andhra Pradesh, Uttaranchal, Karnataka, Gujarat, MAVIM in Maharashtra and Kerala's famous KUDUMBASHREE have been responsible for women's leadership in micro finance (Jose, 2005). In Kerala, SHG movement has ensured new leadership among poor women. The state sponsored Kudumbashree mobilization has made collectives of women from the marginalized strata very proactive in contrast to relative passivity of women of the new elite (Devika, 2007). Founded in 1995 with support of district administration and funded by UNDP, Network of Voluntary Organizations of Kurnool (NOVOK), a collective of 13 non-governmental organizations (NGOs) working in Kurnool District of Andhra Pradesh (AP) has facilitated the process of formation and strengthening of people's institutions locally called 'Dalit Samakhya' (Dalit Collective) in 347 villages covering 17 mandals and 50,000 Women Self-Help Groups.

Women's Leadership and Community issues, Mobilization and Institutions

"We are building a new society Everybody is equal, no caste differentiation We build trust among community of human beings." "Come women come to SHG. Don't cry alone, we are with

you. Come out of the kitchen
Don't get destroyed by dominating voices
Gain awareness, be part of a
revolutionary fervor."

This song was powerfully and confidently rendered by the members of 6 Women Self Help Groups (WSHGs) of Magadi and Nelamangala in rural Bangalore formed under the leadership of Sakti, a women's rights organization, when I visited them in 2006. The following case study is based on my field trip to WSHGs of Sakti (Patel & Vedmani, 2005).

Case Study of Sakti

When life of women in the communities where Sakti was working became miserable due to neoliberal macroeconomic policies and draught in Karnataka, Sakti, a women's rights group decided to provide safety net through formation of Women's Self Help Groups (WSHGs) among the poorest of the poor women in Bangalore district. During 1998-2000, Sakti formed 317 WSHGs in 128 villages among the poor, disadvantaged (widows, single and deserted) and marginalized women. Hivos provided financial support to initiate various activities through these groups.

Unemployment among Local Artisans:

Many local artisans had lost their livelihood base due to ready made goods from abroad entering the rural market. Influx of plastic wear rendered local potters unemployed. Local mat-makers

and carpenters were finding difficulties due to their products being substituted by plastic and other machine-made products. Sakti-supported WSHGs started giving loans to women to start new enterprise such as mulberry cultivation, Seri culture, dairy development, sweetmeat shops, etc.

Rate of Interest

In the beginning, most of the SHWGs were charging 5% rate of interest per month. Though they accepted that 60% rate of interest per annum was high, the group needed revolving fund in the context of less saving. Once they collected enough amounts, they started reducing the rate of interest to 3% and in some WSHGs even 2%. In the meetings, many women expressed that burden of interest was too high. The women have been borrowing money for availing education of children, petty business and meeting the expenses of health services and marriages. The members feel that the WSHGs which have acquired Swarna Jayanti Gram Swarojgar Yojana (SGSY) loans should reduce the rate of interest to 1.5 %.

Supportive Role of Banks and other Financial Institutions

In 2006, Sakti WSHGs were supported by several micro-finance institutions and the nationalized banks. State Bank of Mysore, Vijaya Bank, Indian Bank, Bank of India, Cooperative Bank, Karnataka Bank, District Credit

Cooperative Bank, Canara Bank, Grameen Kalpaltaru were providing loans to the WSHGs. Bridge Foundation was charging 13.5 % rate of interest which was found to be too high. The nationalized banks were charging 9% and cooperative banks were charging 12 % rate of interest.

Karnataka Urban Infrastructure Development Finance Corporation (KUIDFC) gets loan from World Bank and Asian Development Bank. As there is social/development/gender component in their programmes, the matching grants were given for construction of low-cost toilets. Sakti had a supervisory role. Moreover, Sakti was asked to conduct leadership, health and gender training. From the financial assistance provided by KUIDFC Sakti formed 77 SHGs in the urban slums, out of them 44 WSHGs are constituted by the poor muslim women. Revolving fund ₹5000 each was given to 50 WSHGs and 20 SHGs were given the revolving fund of ₹20000 each.

Case Study of MASUM, Pune

MASUM started the Women's Self-Help Savings (SHGs) Groups Parner Block of Pune district in 1997 to initiate a savings and credit programme for rural women with an aim to strengthen the economic self reliance of rural women, empower women through creating access to credit and motivate them to gradually build their own resources base.

Womens's Resource Development Programme (WRDC) by MASUM

Started in 1991 in Malshiras and Mavdi villages WRDC was modeled in line with Bangladesh Grameen Bank. Currently, it has 5000 members and covers 18 villages. In this programme meant for women, 6 to 10 women from the same neighbourhood form a group and become members of 'Streedhan '. Each group selects a name and also elects a chairperson and secretary. Women have to save at least ten rupees per month. These savings earn an interest of 5 % per annum and the member is free to withdraw her savings at any given point in time. For eligibility for loan of ₹1000, women need to save for three months. This amount increases in the subsequent years. The loan is available at a low interest rate of 12% per annum and without any collateral. Only two members need to sign as guarantors. Larger loans of ₹10,000 and above are made available for production purposes only to members who have saved money for three years and have had a good loan repayment record. The initial loan amount has been deliberately kept small to allow women to manage funds and more importantly to dissuade men from taking undue interest in the scheme.

Group meetings are held in the neighbourhood on a fixed date every month. Two local women in each village facilitate the group

meetings. The group members decide who should receive the loan in the monthly meeting. All the monetary transactions such as disbursement of loans, issuing of receipts and all entries in the passbook are made during this meeting. The group meetings are also used to disseminate information on various social and health issues.

Bachat Gat (Women's Self-Help Savings Groups)

In 1997 MASUM started SHGs in Parner block, with the aim to ensure the members a space to interact freely with one another in the process of saving money from their earnings. At present, it has 800 members and covers 8 villages.

A SHG is formed when 15-20 women come together, form a group, elect office bearers (president, secretary and treasurer) from among themselves and open an account in the name of the group. MASUM trains office bearer of SHGs to maintain individual forms and passbooks of all the members of the self-help groups. These groups are entitled to loan facilities from the bank after the group completes two years. In the interim period the group resorts to internal lending with its own accumulated savings and at times MASUM lends money to the group at the terms and conditions that are in accordance with those of the bank. The group in turn lends this money to its members at the interest rate of 2 % per month.

Generally loans to the amount of ₹10,000 are given to individual members. Savings lodged with the bank earn interest at the current rate of interest offered by the bank.

The groups meet once a month to complete the various transactions of savings, repayment and fresh loan disbursement. They are able to independently maintain the pass book and ledger entries and manage the accounts of their group. The monthly meetings also provide an opportunity to disseminate information and have discussions on various health and social issues affecting the community.

The reasons for availing the loan are varied. These would include paying for medical expenses, payment of old high interest loans, purchase of books, clothes for children, payment of exam fees of children or functions like marriage and religious ceremonies, purchasing sewing machines or welding machines and starting small business or investing in improving their agriculture.

The response of the women with reference to their loan repayment has been consistently positive in all villages. The recovering of loans on an average is 96%. Social pressure has been an effective method of recovery from willing defaulters.

These two case-studies reflect the general pattern of empowerment of women thro' micro- finance in the SHG movement in South Asia (Thekkedara, 2007).

Global Experiences of Multifaceted Development of Women

Globally also, empowering impact of micro finance has been documented by many researchers. Making a strong case for microfinance activities, Hashmi (2004) cites the following empirical evidence in support of micro credit:

- In Zimbabwe clients were able to maintain consumption levels in the face of rising food costs. Experience shows that this impact on poverty alleviation intensifies the longer clients stay with a given program, thus reinforcing the benefits of continuing in the program.
- CRECER (Credito Con Educacion Rural) in Bolivia found that incomes of two-thirds of its clients had increased after joining the program.
- Clients of BRAC (Bangladesh Rural Advancement Committee) who stayed in the program for more than four years increased household expenses by 28% and assets by 112%.
- SHARE (Society for Helping Awakening Rural Poor through Education) in India documented that 75% of its clients who participated for longer periods saw significant improvements in their economic well-being.
- One of the first things poor

people do with their new income from microenterprise is invest in their children's education. BRAC (Bangladesh Rural Advancement Committee), SEWA (Self-Employed Women's Association, India) and Save the Children (Honduras) saw that clients' children were more likely to go to school, stay in school longer and have lower drop-out rates. Families with access to microfinance services have better health than those who do not.

Women's Leadership in Organization Development, Governance and Human Resources

Micro finance institutions have used several methods of mentoring to evolve women's leadership for development of organization, efficient governance and human resource development.

Exposure Trip

Most WSHG members in the above mentioned groups have expressed that they gained lot of knowledge by their exposure from other successful models of SHGs. Kasturi from Sakti had visited AIR India in Dharmapuri in Tamilnadu and got inspiration for vocational training of women in unconventional areas such as masonry and construction work. She also got opportunity to attend workshops on AIDS awareness, gender training, legal rights and health issues.

Need for Vocational Training:

Micro Finance model of Mahila Arthik Vikas Mahamandal (MAVIM), Government of Maharashtra gives the highest premium to capacity building thro' vocational training. It promotes carpentry, printing business, motor winding, cycle-shop, buying and selling of paddy, making leather goods, bamboo craft, running hair cutting saloons and fishing among WSHGs (Balsaraf, 2007).

WSHG members of Sakti in Yerhalli, rural Bangalore demanded that they should be supported to start STD booth as there was none in their village. The WSHG members in Karnataka, A.P., Kerala, Tamilnadu and Maharashtra are trained in dealership of petrol and diesel oil, management of fair-price shops (ration-shops), ready-made garment shops and stationary shops, running of flour mill, production of soap and detergent washing powder and extraction and sale of neem and Honge oil from seeds.

WSHGs should organize vocational training courses in the areas of high employment opportunities. WSHG members can be trained to become plumber, fitter, turner, welder, electrician, carpenter, mason, flour mill operator so on and so forth.

Animated Discussion on Dowry and Declining Juvenile Sex Ratio

In the field trip to Karnataka and

Maharashtra when we asked the WSHG members whether they would give loan to women who would spend the amount for organizing dowry for daughter's wedding or for scanning of foetus to determine sex and resort to sex selective abortion. All of them said that as they were in close touch with each member, they could easily make out their motives. Generally women do not approach SHGs for such anti-women purposes as Sakti has organized several awareness generation programmes on the subject. In principle, the Sakti WSHGs do not support any causes that are detrimental to women's interest.

Plight of a Deserted Woman

Bhagyamma, a member of Nisarga Mandala from Yerhalli village of Ramnagar Taluka shared an experience of support provided by the WSHG to a woman who had an inter-caste love marriage. After she had one daughter and was pregnant once again her husband deserted her. Villagers were pressurizing her to go for abortion. But the SHG respected her decision and supported her at the time of delivery.

Dealing with wife-beating, bigamy and other Restrictions

Mayamma, a mandal member from Jogi Doddi narrated a case of domestic violence in which WSHG intervened. When husband did come for discussion with the WSHG members, they contacted a lawyer and issued a legal notice. The

victim's mother was the WSHG member. The WSHG pressurized the parents to see to it that he came for the discussion. He promised that he would never be violent with her.

Betulbee from Yashshwini Mandala from Haijur Moholla of Ramanagara town shared her experiences regarding prevalence of bigamous marriages in the area. "The WSHGs ask village elders to intervene whenever there are conflicts among two wives. Men are asked to look after both the wives and both should get share in property. But the husband has a gala time as he does not work, only lords around and thrives on the income of both the working wives."

Geeta from Bhagyalaxmi Mahila Sangh, Yerehalli said, "Earlier we were so diffident that we could not talk to outsiders, were not allowed go out of house. Now we have become mobile. We have attended even 3 days residential programmes that demand three nights away from home. Earlier, if there was a community related issue, we had to depend on men. Now we can handle crisis situation with courage and confidence."

"There was bore-well in our village. Person staying close by was irritated with the noise it made. He broke the handle of bore-well so that no one could operate it. When there was a drought, we pressurized the lady panchayat president and threatened to stage sit-in in front of her house and got a

technician to check and repair the bore-well. Water tank was due for cleaning. We pressurized the Panchayat to organize its cleaning."

Vasantha confidently added, "Earlier we were blindly obeying our husbands. Now we assert. We are respected as we are making financial contribution for the households".

Monitoring Schools

WSHG members in Sakti are also active in School Development Management Committee (SDMC). Kalamma from Netravati Mahima Sangh, one of the members of SDMC told, "We wake up dozing teachers, monitor quality of mid day meal, its distribution and conditions of toilets.

Sex Selection

Kalamma from Sakti revealed, "Van carrying mobile sonography machines used to come earlier to our village, Ramanagaram. But now, it has stopped coming as women are vigilant and everybody knows that the fine for sex selection is ₹50000/- and 5 years of imprisonment."

Role of Capacity Building, Skills, Information Dissemination and Technology for Women's Leadership

There have been reports from several states that WSHGs are concerned only about profit, they are least bothered about the long-term goals and objectives of empowerment of women. Many WSHGs give loans for degrading practices such as dowry, casteism,

communal bias and scanning for sex selection of fetus and sex selective abortions. Many activists have alleged that WSHGs are perpetuating casteism, communalism and patriarchy. In such a situation, in the passbook and books of account it must be clearly stated that WSHGs would support only those causes, which contributed towards secular humanism and women's safety, security, dignity and empowerment. While discussing these issues with members of Sakti, several members responded by saying that they know each and every detail of their members and would never give loans for any purpose detrimental to women's cause. If anything went wrong, they would immediately come to know and take necessary steps. But their WSHG passbooks had not mentioned the goals, objectives and dos and don'ts. The members agreed that WSHGs needed Nitiniyama i.e. Code of Conduct.

Registration of WSHGs:

Some women leaders of the WSHGs felt that registration brings recognition and also, if their WSHGs were registered they would benefit from the government schemes. But the rest retorted back by saying that neither for loans from the financial institutions nor for SGSY, the WSHGs were required to register. Moreover, if they register, the government interference increases. Some of them also said that Society's

Registration Officials demand bribe. Every year they have to submit audited statement of account, annual report and get renewal of SHG registration.

SGSY

The members expressed that their WSHGs managed to get loans under SGSY due to proper paper work by Sakti. The members said that none of them had to bribe the officials. They said that unlike the empowerment of men, the empowerment of women is rarely an individual phenomenon. "Our experience has shown that a woman continually thinks first of her family. This experience is both a positive, and a negative. From a banking standpoint, we often wish that a woman would use her loan solely to finance her enterprise. However, from a 'woman's' perspective, we understand that women are often both businessperson and caretaker. When a woman becomes empowered, the entire family becomes empowered. As a result, we believe that empowering women, will empower India." (Vibhuti & Vedmani, 2005)

A unique experience of Mann Deshi Mahila Sahakari Bank Limited which has used technology (SIM card and IT enabled services) for empowerment of women revealed that even in rural settings, technology can be used in surprisingly innovative ways to improve lives. The benefits of technology use are twofold - lives

are improved and women gain the confidence and skills to take a more active role in society. Averred Chetana Gala Sinha, "It is apparent that women are increasingly becoming technologically and financially savvy. We find that when women are given both the tools and the opportunity, they seldom fail to capitalize. Despite progress and our optimistic outlook, we received a disturbing letter recently from the Reserve Bank of India. Currently, women comprise only 1.25% of the entire Indian banking sector's lending portfolio. The Bank has recently set a benchmark to provide 4% of all lending services to women. This target is embarrassingly low, and we believe that it represents a poverty of vision. Microfinance institutions report an average repayment rate of 98% and beyond for female clients. Women have proved their innovation, desire, and dependability. Now, it is vital that policy makers widen their visions to create space for the empowerment of all women." (Sinha and Bean, 2007)

Women's Leadership in Microenterprise, Livelihoods, Employment, Agriculture and Land Facilitating Land leasing to the SHG Federation:

Eleventh Plan Subgroup on Gender and Agriculture, Planning Commission, GOI has recommended that WSHGs should be allocated land for agricultural activities after identification of land

from the open market and its quality must be assured by the committee of SHG Federation. Land Leasing of SHG federation with land owners must be ensured by entering into a formal tenancy arrangement for fixed term. Identification of beneficiary and appraisal through a committee of SHG federation should be respected by the authorities. Preference should be given to those women who have mortgaged their land & are engaged in agriculture labour. The state should provide input & agricultural equipments to the project beneficiaries in terms of seeds, manure, pesticides, pipes & pumps, tractor with trolley, thresher, plough, weighing scale etc through the project. (NAWO, 2006).

The Eleventh Five Year Plan has promised construction of grain storage facilities for the villagers to be facilitated by WSHGs and states that a Grain Bank would be established where the women who are participating in the land leasing arrangements would be contributing agreed amount of grains for the community use.

Vikalpa in Tilakwada, Narmada district, Gujarat has done commendable work in the direction of economic empowerment of rural women thro' SHGs by using the tool of participatory action research project. After having a detailed baseline done at the project village, the project identified around 31 acres of land which was mortgaged

by small and marginal farmers. Though the families being legal owner of the land became de facto landless because they were involved in concealed tenancy. The project through SHG federation provided them a revolving corpus to get back their mortgaged land with following preconditions

- ▶ Family had to agree to the precondition to avail the loan to register joint title in the name of wife and husband and wherever land title was in the name of sons then the name of daughter in law had to be registered.
- ▶ Loans were extended in the name of women exclusively.
- ▶ The loan was extended exclusively to bring back the mortgaged land.
- ▶ Single women were given 1st priority both in small land holders as well as landless category.
- ▶ Non SHG members had to become part of SHG after paying an equal amount to other members in the SHG.
- ▶ Land holding more than an acre per family was redistributed to the landless and small holders as long as the loan amounts are repaid.
- ▶ No interest was charged in the 1st year for the loan extended. From second year subsequently the farmers have to pay back half of the produce.
- ▶ The families are not allowed again to mortgage the land for

marriage/ dowry purpose.

In the 1st year around 25 families accessed the loan and applied for the joint titles in the land record to the local village level revenue official. Currently, the land has been transferred in the joint name of men and women of all the 25 families. Though the scale of project is very small but nevertheless the example confirms that if the policies are made inclusive then at the local community level, a process may be facilitated to have a joint ownership of land. (Mittra, 2007)

Dhan Foundation, a grassroots development organisation ensures finances for agricultural infrastructure through micro finance in South India. (Narendra, 2007). It started microfinance groups in Sirumaniyendal in Ramanathapuram district in Tamilnadu with the focus on fertilizer and managed to get the fertilizer at lower rate than market rate, obtaining the supply at the doorstep and easy availability of credit facilities. All members of microfinance groups insure their life before credit linkage. As many as 2,246 members have insured their lives under Birla Sun Life insurance and 386 members have insured with LIC's Janashree Bhima Yojana scheme. Another benefit of microfinance is that members are able to react quickly to emergency situations and mitigate loss. During flash flood in Madurai district, microfinance

groups used the common funds to immediately close tank breaches. Savings have also improved. Six microfinance groups in Ponpadhirkoodam in Kancheepuram district now have a total saving of ₹1.97 lakh. Dhan Foundation is also working towards deficit rainfall insurance for the farmers in rain-fed agriculture areas.

Gender Equality and Empowerment of Women

SHGs established by Stree Mukti Sangathan (SMS) consciously focus on women's liberation from cruel patriarchal forces operating among poorest of the poor women doing stigmatized work of recycling of garbage in the lowest rung of economic hierarchy in the metropolitan centers such as Mumbai and Pune.

Social empowerment

SMS has dedicated itself to the Women's Cause. It has developed lot of material using various audio visual forms over the years such as theater (its famous play *Mulagi Zali Ho* or *Beti Aayi Hai*), songs, CDs. Poster exhibitions etc. on various issues pertaining to women and children. All this was extensively used while conducting various awareness programs in the communities, SMS also used the material developed by other organizations like Pratham, Tathapi, Institute of Health Management, Pachod etc. for this purpose. SMS regularly organizes awareness and leadership

development camps (36 Sessions) for the SHG group leaders with many inputs such as Equality, Solid Waste Management, Health, Importance of Education, Work Culture, P.D.S., Atrocities, Effective Parenting etc.

Gender Sensitive and Environment Friendly Economic Empowerment of Women

SMS Established two training centres in M-ward (Chembur), for training Parisar Bhagini (Environment Sisters) in bio composting, vermiculture and gardening. 300 women have been trained in manure and gardening techniques so far. As a result of this 250 women have gained meaningful employment.

As a trainer and facilitator SMS secured work opportunities for Solid Waste Collection and Treatment in major public and private sector housing colonies and office premises viz. Tata Power, T.C.S., R.B.I., Indian Navy, BEST, Pfizer, CIDCO, MCGM, BARC, Somaia so on and so forth. 250 trained Parisar Bhagini successfully brought near zero-waste status in these colonies, campuses and also in the small housing complexes spread over 13 wards in Mumbai. In last 2 years work has spread to Navi Mumbai, Kalyan, Dombivili and now in Thane.

At WSF 2004, PBVS took over the contract of collection and disposal of waste and made a sizeable profit.

In November 2004 along with

SMS experts, Parisar Bhaginiis participated in training the staff, workers and residents of IPCL Township in Nagothane (Dist. Raigad). Today IPCL Nagothane is first Petrochemical Township in India achieving near zero waste status.

SMS as facilitator helped Parisar bhaginiis to register six service-cooperatives, 50 women each under the Cooperative act for business entrepreneurship.

SMS is one of the conveners of the following networks

1. Swachha: Alliance of Waste pickers in India

2. AWM: Alliance on Waste Management. (National Alliance of organizations working on waste issues)

3. MMAF: Maharashtra Microfinance Action Forum (Alliance of organizations working with self help (Micro finance) groups)

Environmental sustainability

The approach adopted by SMS in Parisar Vikas is found to be most sustainable as it imparts the beneficiaries with the knowledge and skills, advocates for their rights and helps them to be organized. It combines Economy, Empowerment and Environment. This helps Parisar Bhaginiis to have increased bargaining power, better social organization, increased income and self-sufficiency.

To make this model sustainable, SMS Simultaneously developed 5-6 composting models for use with the

available space in localities of different Socio-Economic background. SMS also took help of the concept of Advanced Locality Management Groups (Citizens' groups) encouraged by Municipal Corporation of Greater Mumbai (MCGM) Authorities. Many of these local groups gave employment opportunity to train Parisar Bhaginiis in their lanes. In turn Parisar Bhaginiis brought near Zero waste situation in these areas. Soon SMS received an opportunity to upscale its activities. SMS received maintenance contract for Nisarga Runa (Biomethanation) plant developed by BARC scientists with capacity of treating 5 tons of biodegradable waste every day. Today SMS is maintaining 3 such plants at Anushakti Nagar. SMS has also constructed two such plants for MCGM and maintaining them. One of the plants has successfully produced electricity from the biogas generated.

Three factors - poverty, gender inequality and poor 'quality of life' - pose major challenges to sustainable urbanisation. If good governance can combine adequate powers, resources and operational capacities with community and partner empowerment, local authorities can take a central role in sustainable urbanisation. Mobilisation of local resources, whether private or public or community-centric, is a major challenge. There is a greater participation of voluntary

organizations along with Municipal Corporation in the field of solid waste management now. SMS therefore feels that treatment of waste can become a potential opportunity to increase the people's participation in the whole process and make them aware of their own responsibilities. This initiative can also convert the wet waste into Green Gold and make a considerable difference in the environment. Use of such manure or soil in the cities will stop the relentless exploitation of hills and river basins in the rural area. It will also create better working conditions for the Municipal conservancy workers who struggle day and night to keep the cities clean. It will bring the necessary attitudinal change in the people, which will help in the gradual acceptance of the Parisar Bhagini by the society as responsible partners of the environmental entrepreneurship programme. (Mhapsekar, 2007)

Solid Waste Management in Bangalore:

Urban Solid Waste Management initiative of Sakti was started in 2005 in the Bangalore district as per the Supreme Court Guidelines. NGOs are motivated to join training programmes on segregation of solid waste. Sakti is networking with District Municipal Administration, Urban Development Department, Environment Department, and Residential Welfare Association to execute the project. KUIDFC is

giving loans to buy vehicles to the urban local bodies for solid waste management. It is a difficult area to convince SHGs to get involved in this "dirty" job.

Neutralizing Initial Male Hostility:

During last two decades, the SHG Movement has successfully dealt with male opposition. Many SHG leaders who have made judicious use of micro finance have been elected in panchayati raj institutions.

In Karnataka, Varija of Kaveri Mahila Sangh in Manchanabell village said, "Initially when we started going out to attend meetings, men were criticizing us. Even though I was a member of School Development Management Committee, I was not allowed to sit with them in the meeting. After success of our WSHG, they started giving us respect. They asked their wives to take interest in the WSHGs. We also selected one of our members to contest PRI election and actively canvassed for her. Even on the previous night of the election, we did door-to-door campaign for her. She got elected."

Anti-alcohol Campaign:

Kempamma Puttamma related the experience of collective struggle of her WSHG in Manchanabell village, rural Bangalore against alcohol shop. They started their agitation and saw to it that the shop was closed. They were successful in their effort for 3 months. Due to political pressure the officials allowed the shop to reopen and told

the WSHG that the shop owner had a license to sell alcohol up to March. When it comes to renewing his license to contact us again." The shop is still doing brisk business. But one member had a success in her personal life. Before the campaign began, her husband used to drink a lot and he also used to beat her. At the time of campaign, she left husband's house leaving her 3 children with him and started staying in her mothers' house. Her husband came to her mother's house, apologized and promised not to drink. She went back. Since last ten years he has not touched alcohol.

Similar experiences have been reported in rural Maharashtra. Women's movement in Maharashtra has forced the state government to ban sale of alcohol in those villages where more than 50% women of the village demanded the same. At present, nearly 300 villages in the state are declared Alcohol free.

Child Marriage:

In Karnataka, most of the WSHG members strongly felt that child marriages should be opposed. When we asked, "Is it because of the Child Marriage Prohibition Act?" They said, "Because they learnt in the health workshop that early marriages bring lot of suffering for women. At a young age girl's uterus is not fully developed. We should allow them to mature and educate them." averred Arasamma of from Ishwannahalli, Neelamangal Taluk.

Many SHGs in Southern states have launched campaign against child marriage.

Sex Selection and Two Child Norm:

SHGs supported by MAVIM (Maharashtra) and Sakti (Karnataka) announced that there was no scanning of pregnant women for sex selection in their area. Earlier women used to reproduce repeatedly till they gave birth to a male child. Now, they stop at two children, whether they are girls or boys.

Dowry:

While visiting SHGs in Karnataka, many tales of dowry harassment were told to me. Rammakka from Jyoti Mahila Sangh, Kolihalli, Neelamangal Taluk proudly revealed that she did not take dowry for her son's marriage. All her family members are earning through coolie work. Ganganarsamma, Mallige Mahila Sangh, Boodhianaplya colony in Magadi Taluka said, "I have 4 daughters and 4 sons. I neither gave nor took dowry at the time of their marriages. But most of the participants expressed their anger in these words, "Even if we give dowry, there is no peace in our lives. Only one family in 10 will say that they do not want dowry."

Family laws:

Due to training programmes about women rights, WSHG members of Sakti were aware about their legal rights. All of them agreed that all marriage should be

registered or else deserted women lose everything- property, status, say in family matters. They also asserted that property should be in the joint name of both men and women members of the family. Gangamma was extremely proud when she declared that she owned a house in her name.

Diverse Economic Activities of WSHGs:

In Magadi and Nelamangala WSHG members are doing varied economic activities- vegetable and flower selling, onion and garlic selling, coconut and tamarind selling, petticoat business, animal husbandry-cows, goats, buffaloes, brick making. Kempamma owned a bangle shop. Puttamma owned a provision store. Kittur Rani Chennama WSHG has taken flower garden on lease and all 14 members share the profit. They also prepare sweetmeat and snacks and boys sell them in nearby villages.

Experiences with SGSY:

In Karnataka, the women associated with Sakti complained that unless they settle earlier loans of other family members the bank officers don't sanction SGSY loans. In Neelamangama two WSHGs managed to get SGSY loans to buy goats and buffalos. In many villages, the bank officers said the WSHGs that they should convert their SHGs to Stree Shakti SHGs. Then only they would sanction the loan amount. Chamundeshwari Mahila Sangha Pattaldama Mahila Sangha from Maladi taluka

managed to get SGSY loans after fighting for a long time.

Combating Casteism:

SHG movements in Bihar, Himachal Pradesh, Karnatak and Maharashtra have made praiseworthy efforts at combating casteism.

Ramakka from Kittur Rani SHG from Ishwanhalli village of Nelmangala Taluka related her eye-witness account of the episode of caste conflict between Naik (Lingayat) and adi-Karnataka. S.C. woman was injured by cow. The S.C. community confronted the owner (Lingayat) of the cow. The owner insulted the S.C. group who finally approached the police. The circle inspector intervened to resolve the conflict.

Stree Shakti SHGs were not allowing the S.C. women to become members. Not only that when the S.C. women cooked the mid-day meal, their children were not allowed to eat by their mothers. In Manchanbelli the S.C. women fought, did not give up and continued cooking. For some days, the upper caste women did not send their children to eat mid day meal.

Ramakka also related story of temple entry movement by dalits in her village. "We were not allowed to enter the temple. When we tried to enter, other caste people pelted stones at us. Whole Ambedkar Samaj approached the police and the tahsildar. We had a meeting in the village and decided to enter the

temple along with the police and the tahsildar. The poojari came out as he did not want to conduct pooja. The police and the tehsildar forced him to conduct pooja for the Ambedkar Samaj. Now, we are allowed to enter the temple."

One S.C. girl was raped by the S.T. kuruba boy. Lady medical officer promptly examined the victim and prepared papers. The rapist was arrested. But boy's family paid money to police and got him released. The WSHG collaborates with the S.C. community. In Iswanalli, the headmaster of the school hit the S.C. girl with his shoes. Members of Kittur Rani Chennamma Mahila Sangh rushed to the school and warned the headmaster of dire consequences.

Change in Dress-code:

In those villages where WSHG members of Sakti, Bangalore are from the lower castes, earlier they were scared of dressing up nicely, lest that may antagonize the higher caste people. They also feared high caste jealousy and retaliation as dress represents status and power in the village hierarchy. Now, after success of their WSHGs women feel confident to dress up nicely. Many participants said, "Our family members tell us that they can't believe that we have stopped dressing shabbily."

Training Programmes:

Training programmes on women specific issues and legal awareness are inbuilt aspects of

successful SHGs. In my field trip to Karnataka, Dilshad from Prakruti Mandal and Mahilodaya Federation conveyed that the mandal had organized workshops on legal issues and violence against women. It also organized lecture demonstration on bio-intensive garden and rain water harvesting.

Women's Leadership in Innovations, Operations, Products, Services

Operational efficiency, innovative practices, branding of products and enterprise development are given highest premium in the microfinance movement. Many SHGs in several states of India have joined right to food and right to health campaigns. They have transcended the stage of money circulation and moved towards enterprise development.

Grading of WSHGs

In several states, the banks have also done grading of WSHGs. MAVIM (Maharashtra) and Sakti (Karnataka) have also done grading based on 25 sustainability indicators such as regularity of meeting, savings, repayments, book-keeping, loan register maintenance, cash-book and ledger maintenance, updating of individual passbook, internal lending, etc.

Antyodaya Yellow Card:

While interviewing WSHG members in rural Bangalore, I found that they expressed their anger concerning many women being left out from Antyodaya Yellow Card

scheme. After their fights with the Food and Civil Supply Officer, the cards were issued to the remaining women. Young woman panchayat member and also a motivator of Subodaya WSHG mandal, Leelawati told, "For past 4 years, sugar is not distributed through ration shops in the region." Others responded by saying that market price and ration-price of sugar are the same. Hence the ration shop owners don't feel motivated to distribute sugar through PDS.

Housing Loans:

Several SHGs in Karnataka, Kerala, and Maharashtra have managed to get housing loans for their members from their respective panchayats. Only if the foundation level construction has taken place, the panchayat releases the first installment of the loan. To begin this work, women take loan from WSHGs. After completion of mantle level, the second installment is released. After completion of construction of toilets and bathrooms, the last installment is released. If they fail to construct the toilet and bathroom, the authorities would deduct ₹3000. In any of these stages, if they are short of money, they approach WSHGs for supplementary amount.

Public Health:

In Karnataka, Bharati from Sandana Mandal and Bandhavya federation told me that government hospital is not functioning properly. Medical officer was getting cuts from the

pharmaceutical company and local drug shop on sale of glucose bottles. Hence, for every patient who approached him for treatment he would give prescription for purchase of glucose bottle. The women WSHG members were very angry and staged Dharana in front of the PHC from where the doctor operated.

Indira from Chaitnaya mandala of Sparsha federation said that they collaborated with Vidyapeeth Medipallya Ashram to organize street play and discussion for awareness generation on alcoholism, HIV-AIDS and general health issues. She also organised separate sessions on meditation.

Bhagyamma S. from Medanhalli informed that her mandala had organized a workshop on mother and child health and food and nutrition.

Many WSHG members complained that pregnant women had to be treated by male gynaecologist in the government hospital. It was very embarrassing. They wanted to be treated by a woman gynaecologist.

In 2005, Yashshwini SHG issued health card for ₹60 each to their members that would cover health expenditure worth ₹10000.

Women's Leadership in Directing and Influencing Microfinance Policy

To give new direction and to influence microfinance policy, SHGs have formed state and national level federations. During

my field work in Karnataka, Pushpa from Sakti briefed us about the back-ground of formation of federations. "Individual SHGs can't be effective. Three members of each WSHGs are selected for mandal. From each mandala a federation leader (FL) is selected. The FLs are not supposed to handle money. They have supervisory role and pass on information about new schemes, sources of funds, etc to the mandalas. The federation acts as a resource center for information and knowledge dissemination on bank, corporation, ZP, TP, GP, Small manufacturing Enterprises, PHC, government programmes, schemes, CDPO office, food and civil supply officer, WCD Department's initiatives and activities of 23 mandalas and other federations."

Women's federations network with the state government, banking institutions and voluntary organizations on policy issues concerning micro finance. During the last one decade, from collective wisdom of the micro finance movement, the following policy recommendations for strengthening the SHGs have emerged.

- SHGs should be formed only by NGOs or Women Development Corporations with the requisite knowledge and ethos of SHG development and micro-credit movement.
- Once an NGO is selected, the nurturing grants should be

released every quarter to it, after reviewing training milestones, group savings and internal lending data and not on the basis of bank gradation. NGOs should receive nurturing grants for at least five years, during which they should support the group.

- A state level agency should be appointed to train NGOs and also be permitted to appoint their own NGOs to implement the programme in addition to implementation through its field workers.
- SHG groups should not be broken up by the banks insistence to drop the member who is a defaulter or whose family member is a defaulter of the bank.
- Along with initiatives for improving the programme delivery mechanism, bankers need to be trained and sensitized every three months, because of the high turnover of bankers in rural areas and the ignorance of bankers coming from urban postings to the needs of rural areas.
- NGO releases should not be made contingent to the group taking up economic activities. NGOs should be evaluated on the basis of group capacity building and training.
- An integrated approach is required for meeting over-all credit needs of a poor family in terms of backward linkages with technology and forward

- linkages with processing and marketing organisations.
- ▶ Credit needs to be provided for diversified activities including consumption loans and against sudden calamities.
- ▶ Credit in the right amount and at the right time to farm-women should be ensured for various purposes like income-generating livelihood activities, production, housing and other emergency needs of the family.
- ▶ The delivery system has to be proactive and should respond to the financial needs of the farmers. Cooperative Banks and Rural Regional Banks should be strengthened which should formulate new products for diversified & integrated farm and non-farm activities, including insurance, commensurate with the demand and to provide cheaper and timely credit.
- ▶ Provide easy access to loans to lease land through SHG's especially women's SHGs.
- ▶ Banks should simplify the process of giving loans, i.e. reduce the number of questions to important, non-repetitive ones.
- ▶ Provide gender sensitization training to bank staff so that they are sensitized to the needs of rural clients, especially women.
- ▶ Give employment to at least one male and one female local rural unemployed 10-12th class pass

youth in all rural institutions so they can fill applications and forms and help the community to benefit from the various Government schemes. The outreach of the formal credit system has to expand to reach the really poor and needy (Bera, 2008). There is an urgent need for a **paradigm shift from micro-credit to livelihood finance**, comprising a comprehensive package of support services including

- a. financial services, (including insurance for life, health, crops and livestock: infrastructure finance for roads, power, market, telecom etc and investment in human development),
- b. agriculture and business development services (including productivity enhancement, local value addition, alternate market linkages etc) and
- c. institutional development services (forming and strengthening various producers' organisations, such as SHGs, water user associations, forest protection committees, credit and commodity cooperatives, empowering Panchayats through capacity building and knowledge centers etc.).

▶ A network of capacity building institutions should be set up to strengthen and develop SHGs to undertake the various

functions into which they are expanding, including ToT, and to nurture and mentor them during the process.

- ▶ A more detailed understanding of the place of SHGs in women's multiple livelihoods may be built, as well as mapping the location of women in the rural and agricultural sector.
- ▶ The micro finance movement must lobby for 10% of authorized shopping areas to be reserved for WSHGs. Milk cooperative must be run and managed by women. The local authorities should facilitate meeting of WSHGs with the bank managers, lead bank officers and NABARD officers.
- ▶ WSHGs with primitive accumulation of capital should charge 2% or below 2 % rate of interest. The WSHGs that have acquired Swarna Jayanti Gram Swarojgar Yojana (SGSY) loans should reduce the rate of interest to 1.5 %.
- ▶ Female headed households (single, divorced, deserted and widows) should get special consideration while granting loans.
- ▶ The WSHGs should focus on the older women's needs-pension, half way home, shelter home, physical and mental health needs, and antyodaya card.
- ▶ The WSHGs should inform and facilitate all special schemes concerning housing, subsidy,

antyodaya card, pension and other government schemes earmarked for female-headed households.

- ▶ Federations of WSHGs should have a data-base on child and juvenile sex-ratio (CSR & JSR) among its members and compare it with the overall CSR and JSR in the respective villages where the SHGs operate from. It should also get data on bigamy.
- ▶ The training module on Micro finance should include module on superstition, witchcraft, dowry, sex selective abortions, property rights of women in its gender-training programme. It should discuss the issue of registration of marriage among its members.
- ▶ Career counseling of adolescent girls of WSHG members is need of an hour. Scholarship (not education assistance) for bright girls should be provided.
- ▶ Senior staff of WSHGs should be provided sabbatical leave for higher education. They can be groomed to be lawyers, accountants, computer programmers, counselors, health professionals, so on and so forth. Professionalisation of SHGs is a must for its survival.
- ▶ Micro finance movement should lobby for provision of wide range of vocational training through Industrial Training institutes so that

women can acquire skills to work as plumber, fitter, turner, welder, electrician, carpenter, mason, STD booth operators, so on and so forth. For their safety and security, they can take these professions as group-work.

- ▶ In the passbook and books of account it must be clearly stated that WSHGs would support only those causes, which contributed towards secular humanism and women's safety, security, dignity and empowerment.
- ▶ The federation leaders of WSHGs should be exposed to entrepreneurial choices that ensure niche market.

Some disturbing Trends:

Of late, the entire SHG Movement is increasingly becoming a sort of mercenary programme where donor agencies, like NABARD and SIDBI, are happy in giving promotional funds and SHGs are being formed at a speed which no body could have ever thought of, without caring much about their quality and ensuring that only those not having access/adequate access to credit and other financial services are joining SHGs. The dire need for an inclusive approach for the socio-economic development of the poor seems to be ignored.

Similarly, new generation MFIs are more running as institution-centric organizations and not as user-focus organisations. This process has resulted in the

increased volume of credit at exorbitant rates of interest and in the improved bottom line. The new generation MFIs are not addressing the needs of the poor.

The 62nd Round of NSSO (2005) reveals that rural households account for 63% of the country's overall aggregate outstanding debt of ₹177,000 crores. Incidence of indebtedness was reported to be about 27% among rural households, predominantly in rural areas of Andhra Pradesh, Kerala, Rajasthan and Karnataka. In some cases micro credit clients are worse off after accessing loans. Since higher interest rates on micro credit do not provide scope for savings and for investing in insurance, the dominant risk covering factors for the poor, micro credit seldom propel the poor out of poverty.

a. Borrower Harassment:

Several researchers have shown that borrower harassment by MFIs is not uncommon. Erring MFIs were charged by the district authorities with exploiting the poor with usurious interest rates and intimidating the borrowers with forced loan recovery practices. The crisis in Andhra Pradesh has not only exposed unethical practices by MFIs, but has raised serious questions on regulatory measures applicable to them. The government has to apply stringent regulations on MFIs operations, besides providing a safety net for the poor and vulnerable. (Rajgopalan, 2005)

b. Lack of code of Conduct and Accountability:

Microfinance institutions which are concerned only about profitability have aided dowry system and ultrasound tests leading to sex selective abortions as the staff of lending institutions does not interfere with the purpose for which women take loans. They are worried only about monetary rewards not women's concerns of socio-cultural empowerment.

c. Politicisation of Micro Finance movement

In Kerala, the banks are advised (i.e. directed) to provide credit linkage to Janasree SHGs supported by the ruling party at the centre. Initially, it will be done for 10,000 Janasree SHGs and extended to 30,000 or more. Janasree was launched a year ago and it has 10-lakh members spread over 30,000 SHGs. The number of Janasree SHGs is expected to go up to 50,000 very soon. Janasree is a parallel programme to the widely known, decade-old Kudumbasree, involving women below the poverty line. Kudumbasree is supported by the Left Front. There is a threat to Kudumbasree and the union-state relations from the launch of Janasree. The state government will oppose any move for grant of union government's funds directly to Janasree, bypassing the state government or the local self-governments (LSGs). Kudumbasree, officially launched in 1998, with the objective of

eradicating absolute poverty in 10 years through community action under the leadership of LSGs through SHGs of women below poverty line, has gone a long way in empowering women (Das, 2007). Kudumbasree SHGs have been organising thrift collection, internal lending and microenterprises at individual and collective levels. There are several successful tales of managing catering and canteen services by them at bus stands and offices in several places across the state. Handling of solid waste in municipalities has become an added attraction to Kudumbasree. It is feared that Janasree will break the financial discipline of microfinance in the state. Janasree will also scuttle the effective microfinance system in the state put in place by Kudumbasree.

Similar examples can be given throughout the country at local, tensil and district levels.

Conclusion:

The Parliament will very soon pass the Micro Finance Bill (MF Bill) to regulate microfinance institutions (MFIs). The MFIs will have a key role in achieving the goal of inclusive development. More than 40% of the people in the country do not have a bank account. India is the home to the biggest microfinance movement in the world. The microfinance in India has seen nearly full repayment, to the tune of 99%. There are 30-lakh SHGs now that account for a total of ₹80,000-crore

bank credit. About 90% of the SHG members are women and the average loan availed by a SHG is ₹61,000. (Kamdar, 2007)

Self Help Groups are organisations of women from the downtrodden section of the society that empower the women to be self reliant through capacity and confidence building and by making micro-credit available and accessible to women. The SHG movement has taught women the value of saving and the strength of working as a group (Parveen, 2007). NABARD has declared that human development, if not engendered is endangered and found microfinance with Core Banking, ICTs and region specific flexibility in lending norms the most effective to attain enhanced level of human development (NABARD, 2005).

While there is a need for some all India organization both for SHGs and MFIs, for sharing experiences, learning lessons and for advocating on policy related issues with the governments and other authorities, it should certainly not be government sponsored organisation. This is considered necessary to avoid hijacking the whole movement by the politicians and the bureaucrats. Such organizations at national, state and district levels have to be need based, evolving and emerging from out of the movement itself and not superimposed by the governmental authorities.

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**MADHYA PRADESH STATE COOPERATIVE
AGRICULTURE & RURAL DEVELOPMENT BANK LTD.**

8, Arera Hills, Old Jail Road, Bhopal - 462 004.

- The MPSCARDB provides long term loans to agriculturists through its affiliated Dist. ARDBs in the State for various agricultural and rural development activities like Minor Irrigation Schemes, Dry Land Farming, Land Development, Wasteland Development, SGSY, Organic Farming Horticulture Development, Aromatic & Medicinal Plants, Farm Mechanisation, Diary Development, Fisheries, Poultry, Bio gas Plants etc.
- The Bank also disburses long term loans under Non-Farm Sector mainly for setting up of Cottage and Village Industries, SRTO, Establishment of Milk Chilling Plant, various service sector activities in rural areas, SRTO, Establishment of Milk Chilling Plant, various service sector activities in rural areas, for Clinic, Nursing Home and Pathology, Radiology etc.
- To facilitate availability of loans to farmers at nearby place, the affiliated 38 Distt. ARDBs have opened 272 Branches in the State.
- The Bank has, so far disbursed long term loans of ₹2898.07 crores to 9.54 lakhs farmers from its inception in 1961.
- The Bank also accepts Term Deposits from Individuals & Institutions for the period of one year and above. All Distt. ARDBs in the State accept FD on behalf of MPSCARDB in various Schemes i.e. Fixed Deposit, Double Deposit, Recurring Deposit etc.

FINANCIAL PARTICULARS OF THE BANK AS ON 31ST MARCH 2012

(₹ in crore)

1.	Paid up Share Capital	:	41.24
2.	Reserve and other funds	:	463.26
3.	Debentures in circulation	:	846.86
4.	Fixed Deposit	:	91.23
5.	Loan disbursed During the year	:	56.03
6.	Loan outstanding	:	1129.23
7.	Investment	:	13.27
8.	Working Capital	:	1550.17

Prakash Khare
 Managing Director

Kishan Singh Bhatol
 Chairman

NEWS & NOTES

As farmers suffer, NABARD offers soft loans to corporate

The National Bank for Agriculture and Rural Development (NABARD), which is dedicated to promoting rural development by providing soft loans to State governments for social sector projects, has given hundreds of crores as loans to corporate on concessional terms. In the Union Budget of 2011-12, ₹18,000 crore was allocated by the Centre to NABARD's Rural Infrastructure Development Fund (RIDF), of which ₹2,000 crore was exclusively earmarked for the creation of warehousing facilities. While the allocation of ₹16,000 crore to the States was made by NABARD's State Projects Department, the allocation of ₹2,000 crore towards warehousing was entrusted to a new team set up on the recommendation of global consulting firm Boston Consulting Group (BCG), after being awarded the mandate for a repositioning exercise.

In a circular of September 27, 2011, NABARD, making a significant deviation from its earlier policies, included private entities as eligible institutions without consulting the RBI. In another circular of December 23, 2011, NABARD further revised the scheme, again without consulting the RBI, to provide private firms an interest rate rebate of 1.5%. In violation of the regulated 8% rate levied by RIDF, an avenue was created for flow of funds to corporate and release of the interest rate rebate

to the borrowers directly by NABARD. According to documents available with the the Hindu (A National Daily News Paper) a total of ₹759 crore was disbursed, including as refinance at 8% to various banks to fund 516 warehouses and cold storage projects of private entities in March 16-31, 2012. Shubham Logistics Ltd. a subsidiary of the over ₹6,000 crore Kalpataru Group, was handpicked for a rebate of 1.5%, allowing it to access ₹115 crore under a government scheme at a concessional 6.5% rate of interest. Shubham Logistics would have paid a 10.5% rate of interest had the funds been sourced from the market. The company, which was disbursed a total of ₹180.87 crore, to set up 18 warehouses, became the beneficiary of a further 15% subsidy under another government scheme, entitling the company to a refund of over ₹20 crore.

The two schemes that were used to favour Shubham Logistics are Grameen Bhandaran Yojana which offers subsidy of 15% to 33.33% for construction of rural godowns. For corporates the subsidy is 15% of total financial outlay up to a maximum of ₹28.12 lakh. Under the other scheme, 'Warehousing scheme under RIDF', banks are offered refinance at 8% which can be further reduced to 6.5% as an incentive for prompt repayment. Documents reveal that the RBI has questioned

NABARD's interest rate manipulations in financing warehousing projects without its permission and demanded a recall of the ₹759 crore allocated to private firms. Compliance with this directive means that NABARD will have to return the money to the RBI and raise debt from the market to honour its commitments. This is likely to hit NABARD's balance sheet by roughly ₹150 crore. The Ministry of Agriculture has further questioned irregularities in Shubham Logistics storage projects in Deesa, Banaskantha, pointing

out that the project is ineligible for sanction of the subsidy.

Meanwhile, Aditya Bafna, Executive Director of Shubham Logistics Ltd (SSLL), a subsidiary of Kalpataru Power Transmission Ltd was appointed Director on the board of NABARD Consultancy Services Private Ltd (NABCONS) a wholly owned subsidiary of NABARD on January 15, 2010. NABARD's response to a RTI query reveals that it released ₹13.3 crore BCG for a 'repositioning' report that it admits has never been submitted.

SARFAESI act amendments become effective definition of bank amended to include multi state cooperative banks

One of the most significant and far reaching amendments to the SARFAESI Act for the cooperative banking sector is that the definition of 'bank' has been amended to include multi-state cooperative banks. IBA in its circular (No.LEGAL/CIR/6794), dated February 11, 2013, has given the important amendments in the SARFAESI Act. The circular is given below:

The provisions of the Securitisation and Reconstruction of Financial Assets and Enforcement of Security Interest Act, 2002 (SARFAESI Act) have been amended by the Enforcement of Security Interest and Recovery of Debt Laws (Amendment) Act, 2012 (No. 1 to 2013). The Government has issued Notification F. No. 3/1/2011-DRT (Recovery) dated 15th January, 2013 bringing the

provisions of the above Amendment Act into force except Sections 8 and 15(b).

The important amendments carried out in the SARFAEST Act are as under:

- a) The definition of Bank contained in sections 2(1)(c) has been amended to include "Multi-State Co-operative Banks"
- b) Sub-section (5) has been added to section 5 which provides for acquisition of financial assets from various Financial Institutions by ARCs to substitute the transfer of any proceedings pending before Debt Recovery Appellate Tribunal or any other Court or authority in the name of the ARC on acquisition of assets from the Bank/Financial Institution.

- c) Section 9 of the Act provides for various measures the ARC can take for the purpose of reconstruction by any account taken over by such ARCs. Additional measure of conversion of part of the debt into equity has been incorporated in section 9. ARCs will therefore be now entitled to convert part of the loans into equity in a scheme of reconstruction.
- d) In section 13 of the Act, which provides for enforcement of securities by the banks, provision has made for the bank and financial institutions to purchase immovable property if the auction held for sale of such property fails and no bidders are coming forward to purchase the property. Such purchase of immovable property by banks belonging to the borrowers is subject to section 9 of the Banking Regulation Act which provides that a bank cannot hold such property, except as is required for its own use, for any period exceeding seven years. The restriction of holding period of 7 years is applicable to private sector banks but not to public sector banks.
- e) Section 14 of the Act has been amended to prescribe filing of affidavit by the Authorized Officer of the Bank/Financial Institution before the District Magistrate (DM) or Chief Metropolitan Magistrate (DMM) for the purpose of taking possession of the secured assets. The object of this amendment is to standardize the procedure to be followed by the DM for the purpose of taking possession of securities and handing them over to the Bank. Provision has also been made for delegation the functions of the DM/CMM to any other officer by the DM/CMM.
- f) Provision has been made for loading a caveat before the Debt Recovery Tribunal (DRT) in cases where borrower files an application or appeal against the measures of taking possession by the banks/financial institutions under section 13(4) of the Act.

Procedure for application:

In terms of Rule 11 of the Banking Regulation (Companies) Rules, 1949, applications shall be submitted in the prescribed form (Form III). The eligible promoters can send their applications for setting up of new banks along with other details mentioned in Annex II to the Guidelines to the Chief General Manager-in-Charge, Department of Banking Operations and Development, Reserve Bank of India, Central Office, 12th Floor, Central Office Building, Mumbai 400 001 on or before July 1, 2013.

Procedure for RBI decisions:

At the first stage, the applications will be screened by the

Reserve Bank. Thereafter, the applications will be referred to a High Level Advisory Committee, the constitution of which will be announced shortly.

- The Committee will submit its recommendations to the Reserve Bank. The decision to issue an in-principle approval for setting up of a bank will be taken by the Reserve Bank.
- The validity of the in-principle approval issued by the Reserve Bank will be one year.
- In order to ensure transparency, the names of the applicants will be placed on the Reserve Bank website after the last date of receipt of applications.

Background It may be recalled that after the announcement made

by the Hon'ble Finance Minister in his Budget Speech for the year 2010-11, the Reserve Bank had put out a Discussion Paper on its website on August 11, 2010 inviting feedback and comments. Thereafter, the draft guidelines on the licensing of new banks were released on the Reserve Bank website on August 29, 2011 inviting views and comments. Comments and suggestions received on the draft guidelines were examined and some of the suggestions were accepted. After the vital amendments to the Banking Regulation Act, 1949 were carried out in Dec 2012 and after consulting with the Government of India, the guidelines for "Licensing of New Banks in the Private Sector" have now been finalized.

NABARD scraps controversial scheme for corporate warehousing

The National Bank for Agriculture and Rural Development (NABARD), whose funding of corporate warehousing projects on terms far softer than those offered to poor and often suicidal farmers was highlighted by The Hindu, has withdrawn its controversial scheme with retrospective effect under pressure from the Reserve Bank of India. The minutes of a meeting of the sub-committee of the NABARD Board held last month confirm that the RBI had advised the NABARD on September 27, 2012, to refund the amount refinanced to banks in the year 2011-12 with interest at

applicable rates under the Rural Infrastructure Development Fund (RIDF) to contributing banks "in proportion to their contribution to the warehousing fund, alleging violation of RBI Interest Rate Directives and also that funds under RIDF could not be used for providing refinance to banks."

The RBI reiterated its objections on December 17, 2012 a week after The Hindu's expose - and advised the NABARD "to either refund the entire amount to banks or treat the deposits used for refinancing as our own commercial borrowings from the depositing banks, by paying

interest rate at which NABARD raises money from open market through non-SLR and Non-Priority Sector bonds/debentures for an equivalent tenor of RIDF deposits,” the board’s minutes note. The RBI’s unrelenting stance has forced the NABARD management to change tack. “In view of the above, the following proposals are made: NABARD (Warehousing) Refinance Scheme 2011-12 will be withdrawn with retrospective effect in view of the RBI advice. Banks which availed [themselves of] refinance during 2011-12 would be advised either to refund the entire amount drawn by them at the contracted rate (i.e. 8% pa) or carry the entire amount as per the repayment schedule prescribed by us at the prevailing rate of General Refinance (i.e. 10% pa for RRBs / SCBs / PUCBs and 10.25% for Commercial Banks).”

Further, “NABARD would refund the entire amount of ₹759.09 crore drawn under RIDF XVII to the contributing banks with interest as applicable.” This implies a loss of ₹125.86 crore of losses will be booked by the NABARD in the present financial year. Finally, the management has also decided “NABARD (Warehousing) Refinance Scheme 2012-13 would be withdrawn with immediate effect.”

Investigation reveals that under the same scheme, NABARD refinanced Federal Bank at 8% for onward finance to a small entrepreneur Abdul Kareem for a

small ₹60-lakh loan as well as for a ₹100-crore loan to Emmay Logistics of the over \$ 4.5-billion Middle East retail giant EMKE Group (the parent company of the famous Lulu hypermarket chain). However, Federal Bank lent to Emmay Logistics at 10.65% (effective rate after rebate of 1.5% for prompt repayment is only 9.15%), with a grace period of 2 years. EMKE has so far claimed only ₹573.30 lakh as refinance. In contrast, Mr. Kareem, the ideal target group for such welfare schemes, was charged 13.22% interest (eventual interest burden of 11.72%) with a grace period of just 6 months on a small ₹60-lakh loan. In effect, the rate of interest charged is inversely proportional to the amount of loan sanctioned culminating in the powerful Emke Group paying 2.57% less interest than the aam aadmi. The Managing Director, EMKE Group, Yusuf Ali, MA, did not respond to questions about its funding or whether the warehouse is used to stock material for the Hypermarket or for some other purpose.

While active in supporting rich corporates, the NABARD has been found to be choking the credit flow to farmers throughout the country by systematically withdrawing support to cooperative banks.

From its inception, the NABARD was refinancing State Co-operative Agriculture and Rural Development Banks (SCARDBs) by way of contributions to debentures floated

by them. Following advice from its freshly appointed consultant the Boston Consulting Group (BCG), in September 2011, the NABARD, without prior warning to the State governments or SCARDBs, replaced this with a loan system. The NABARD also insisted on executing a revised guarantee deed as a pre-condition for refinance. According to Chairman, National Cooperative Agriculture & Rural Development Banks' Federation Ltd, K. Sivadasan Nair, the NABARD delayed disbursement of refinance to most of the SCARDBs up to 9 months by placing additional conditions throughout the year. Moreover, the NABARD imposed a second audit on the banks to be conducted by chartered accountants empanelled by it in addition to the statutory audit

SC asks RBI to give loan waiver details

The RBI is expected to provide by Friday details of loans waived off by banks or allowed one-time settlements above ₹10 crore, following a Supreme Court direction to this effect last month. Such information, collected by RBI on the basis of annual financial inspections, is to be furnished in a sealed cover as the central bank is reluctant to put it in the public domain. The apex court sought these details from the central bank, as it was unimpressed by the RBI's response on one-time settlements entered into by banks with loan defaulters. Further details were sought after the apex court was

undertaken by the SCARDBs. "NABARD has never at any time in the past, ever pointed out any shortcomings in the audits conducted by the CAs empanelled by the States. This second audit results in the doubling of expenditure with ₹8 lakh being the lowest rate quoted by CAs empanelled by NABARD and can only be viewed as a deliberate move to delay release of refinance and make these institutions unviable," Mr. Nair told *The Hindu*.

Data bears out this claim. Though the NABARD's refinance business grew 208% over a decade from ₹7,418.77 crore to ₹15,471.20 crore in 2011-12, the share of commercial banks grew from 16.73% to 54.68%, while the share of SCARDBs declined by from 63% in 2002-3 to 15.86% in 2011-12

dissatisfied with the information furnished by RBI on the last hearing in January. If noted that RBI's information was "insufficient for determination of the issue raised in the present petitions one-time compromise settlements are being made by the banks ignoring the guidelines issued by the RBI. Accordingly, the guidelines, already issued, "are not sufficient to regulate and check on ad hoc one-time settlements".

Pursuant to the apex court's order of August last year, RBI had filed an additional affidavit stating that to ensure compliance with regulatory guidelines in regard to

re-payment of the loans, the department of banking conducts annual financial inspections on sample basis. After such inspections, discussions are held with the concerned banks and top management on the critical observations, RBI senior counsel Jaideep Gupta said, adding the banks' compliance with RBI guidelines was closely monitored through periodical reports.

And if any violation of the guidelines was observed, RBI was empowered to impose monetary penalty under Section 47A of the Banking Regulation Act, 1949, the affidavit said. However, RBI conceded that so far no monetary penalty has been imposed on any bank for non-compliance with the guidelines on one-time settlements

RBI, Nabard probing errors in implementation of farm loan waiver

The finance ministry said the Reserve Bank of India and the National Bank for Agriculture and Rural Development (Nabard) are looking into errors in implementation of the farm debt waiver scheme and will take action against banks found involved in irregularities and the ineligible beneficiaries.

The issue was first highlighted by the Comptroller and Auditor General (CAG) of India. Finance Minister P Chidambaram informed the Rajya Sabha that the CAG report on the Agricultural Debt Waiver and Debt Relief Scheme, 2008, has been submitted and a day would be fixed for its tabling. The

/compromise settlements as the violations/irregularities, as observed in annual financial inspections, were neither serious nor material in the overall context, RBI added.

However, the finance ministry had stated that it was not feasible to micromanage and scrutinise every such settlement. The RBI and ministry's response had come in a petition filed by Mumbai-based Shoailb Richie Sequeiras alleging non-existence of guidelines by the finance ministry and the RBI while writing off loans by banks.

Last year, the SC had sought RBI response on its role in regulating public sector banks on the non-recovery, one-time settlement and write offs, and the steps taken by it to address rising NPAs.

CAG in its report has pointed out errors in inclusion and exclusion of beneficiaries. It is 'unfortunate' that some deserving farmers did not get the benefit of the scheme, Chidambaram said while replying to supplementary question, adding that the government is more concerned about inclusion of ineligible beneficiaries.

Nabard and RBI, in January, 2013 issued directions to lending institutions to examine cases of any irregularities and to take corrective steps including recovery of such amounts from ineligible beneficiaries. Directions had also been issued for recovery of

any excess payment and fixing responsibility of the bank staff in appropriate cases. The finance minister said the amount of money given to ineligible beneficiaries

would be known after completion of the inquiries. He said the debt waiver was to the tune of about ₹55,000 crore.

RBI's banking licence guidelines

Ten years after the Reserve Bank of India issued two licences for banks, the stage is set for fresh applications from the corporate sector to join the 12 banks in the private sector. The bank regulator decided to remove all restrictions on eligibility of corporates and groups to apply for the new banking license in its final guideline.

- ▶ Private firms, Public Sector Entities and NBFCs Eligible to Set up A Bank
- ▶ ₹500 Crore the initial minimum paid up equity capital
- ▶ Application to be through a wholly-owned non-operative financial holding company (NOFHC).
- ▶ Existing NBFCs to be permitted to promote a new bank or convert themselves into banks.
- ▶ NOFHC to be wholly-owned by the promoter, to hold the bank and group's other financial services entities.
- ▶ Applicants should be financially sound with a 10-year track record.
- ▶ NOFHC to initially hold a

minimum 40% stake in the bank for 5 years. To brought down to 15% over 12 years.

- ▶ The Bank will have to get listed on stock exchanges within three years of the commencement of business.
- ▶ Foreign share holding in the new bank to be capped at 49% for the first five years.
- ▶ At least 50% of the directors of NOFHC should be independent directors.
- ▶ NOFHC and the bank shall not have any exposure to the promoter group.
- ▶ The board of the bank should have a majority of independent directors.
- ▶ At least 25% of branches of a new banks should be set up in unbanked rural centres.
- ▶ First, the applications to be screened by the RBI. Then to be referred to a high-level advisory committee.
- ▶ The Decision to issue in-principle approval will be taken by RBI after committee's recommendations.

Lok Sabha approves changes in money laundering law

The Lok Sabha approved the Prevention of Money Laundering (Amendment) Bill, 2011, enlarging the definition of money laundering

offences and making the provisions for fine to be imposed commensurate to the proportion of the committed offence. The Bill

sought to remove existing limit of ₹5 lakh as fine under the Act. Finance Minister P Chidambaram moved the Bill for consideration which includes activities like cheating, concealment, acquisition and use of proceeds of crime as criminal activities for the purpose of Money Laundering. The amendments also seek to introduce the concept of 'corresponding law' to link the provisions of Indian law with the laws of foreign countries. Mr. Chidambaram also clarified that black money and money laundering were two different things. "We need to have a separate discussion on black money," he said. The finance minister also said that government was initiating steps to fill vacancies in the Enforcement Directorate to strengthen it to deal with the menace of black money.

RBI no to Islamic banking, says laws need amendment

The Reserve Bank of India (RBI)

Parliament approves banking laws amendment bill 2012

The Banking Laws (Amendment) Bill 2011 was introduced in order to amend the Banking Regulation Act, 1949, the Banking Companies (Acquisition and Transfer of Undertakings) Act, 1970/1980. The said Bill has been passed by both the Houses of Parliament during Winter Session.

This Bill proposes to strengthen the regulatory powers of Reserve Bank of India (RBI) and to further develop the banking sector in India. It will also enable the nationalized banks to raise capital by issue of

ruled out the introduction of Islamic banking in the nation saying that it requires amendment in the existing laws. RBI governor D Subbarao said the Kerala government had expressed interest in channelizing funds from the non-resident Keralites through Islamic finance.

"We have studied the issue and appreciate the objective, but there are some legal problems for RBI to allow Islamic banking due to prohibition against charging interest. So Islamic banking is not possible but it can be got around through other vehicles in the existing system," he added. Currently, there are about 400-500 Islamic banks in the world that are managing close to one trillion dollars and by 2020; it is expected to touch 4 trillion dollars. London and Paris are the leading financial centers of Islamic banks and funds.

preference shares or rights issue or issue of bonus shares. It would also enable them to increase or decrease the authorized capital with approval from the Government and RBI without being limited by the ceiling of a maximum of ₹3000 crore. Beside above the Bill would pave the way for new bank licenses by RBI resulting in opening of new banks and branches. This would not only help in achieving the goal of financial inclusion by providing more banking facilities but would also provide extra employment

opportunities to the people at large in the banking sector.

The salient features of the Bill are as follows:

- To enable banking companies to issue preference shares subject to regulatory guidelines by the RBI;
- To increase the cap on restrictions on voting rights;
- To create a Depositor Education and Awareness Fund by utilizing the inoperative deposit accounts;
- To provide prior approval of RBI for acquisition of 5% or more of shares or voting rights in a banking company by any person and empowering RBI to impose such conditions as it deems fit in this regard;
- To empower RBI to collect information and inspect associate enterprises of banking companies;
- To empower RBI to supersede the Board of Directors of banking company and appointment of administrator till alternate arrangements are made; ,
- To provide for primary cooperative societies to carry on the business of banking only after obtaining a license from RBI;
- To provide for special audit of cooperative banks at instance of RBI by extending applicability of Section 30 to them; and

► To enable the nationalized banks to raise capital through "bonus" and "rights" issue and also enable them to increase or decrease the authorized capital with approval from the Government and RBI without being limited by the ceiling of a maximum of ₹3000 crore under the Banking Companies (Acquisition and Transfer of Undertakings) Act, 1970/1980.

Certain additional official amendments have been proposed on the basis of recommendations of the Standing Committee of Finance which gave its report on the Bill on the 13th December, 2011 and has recommended enactment of the Bill, subject to the following modifications:

- i) Voting rights in banks may be restricted up to 26%.
- ii) The Depositors' Education and Awareness Fund may be used for the purpose of promoting depositors' interests.

Further, pursuant to the discussion with Indian Banks' Association (IBA), RBI and Industry Associations, the following additional amendments are proposed:

- a) To exempt guarantee agreements of banks from the purview of the section 28 of the Indian Contract Act, 1872 to bring finality to redemption of such guarantees;
- b) To allow select Directors on the Board of RBI a fixed maximum tenure of eight years with terms

of not more than two terms of four years each either continuously or intermittently in consonance with the directions of the ACC;

c) To exempt conversion of branches of foreign banks to wholly owned subsidiary entities of foreign banks and transfer of shareholding of banks to the Holding Company structure pursuant to

guidelines of RBI from payment of stamp duty; and

d) To ensure that unnecessary inspections are avoided and to encourage regulatory coordination, a condition has been added such that the inspection of the associate enterprise of a banking company would be conducted by RBI jointly with the sector regulator.

Cooperative credit societies will have to get bank licence

Reserve Bank of India following amendments to the Banking Regulation Act. Currently, cooperative credit societies are registered and regulated by the Registrar of Co-operative Societies, and their operations do not. Thousands of cooperative credit societies will have to seek banking license from the come under the purview of RBI despite them accepting deposits and giving loans. There are many cooperative credit societies in India, mainly floated by employees of large companies to encourage savings. For instance, IDBI Bank has an in-house credit society even as it operates as a bank. It was floated when it was operating as a financial institution.

While those co-operative credit societies with reserves and paid-up capital of over ₹1 lakh have to register with RBI, most of them operated with a lower capital to avoid regulatory overview. Following the amendments to the Act, the RBI will issue detailed guidelines regarding capital requirements for such societies. As per the amendment, these societies will have to comply with the norms within one year of them being notified. Or else, they will be forced to suspend banking operations. The move is aimed at protecting the interest of depositors since none of these entities have insurance cover for the deposits they mobilise. As of now, all deposit-taking activities are regulated, except for co-operative societies.

RBI sets up a Working Group to Review Banking Ombudsman Scheme

In view of the recommendations of the Committee on Customer Service in Banks (Damodaran Committee) pertaining to Banking

Ombudsman Scheme 2006 and the Rajya Sabha Committee on Subordinate Legislation, a Working Group (Chairperson: Smt. Suma

Varma) has been constituted in the Reserve Bank of India to review, update, and revise the Banking Ombudsman Scheme, 2006.

Presenting a brief review of the operations of the Banking Ombudsman Scheme, the Annual Report said that the total number of customer complaints received in Banking Ombudsman's (BO) offices of the Reserve Bank of India stood at 72,889 in 2011-12. Last year, the BO offices received 71,274 complaints. The rate of disposal of customer complaints by Banking Ombudsmen was 94% during 2011-12, the same as that done during the previous year. The largest number (25%) of customer complaints were about failure to meet commitments / non-observance of fair practices code, followed by (21%) card related (ATM/Debit/Credit) complaints and complaints relating to deposit accounts (12%). While card related complaints at 21% of total complaints received, constituted the single largest ground of complaints received, in comparison to the previous year, this was a decline of 3% in the number of complaints received on this count. Out of the total 14,492 card related complaints, 9348 complaints pertained to ATM / Debit Cards.

The Banking Ombudsman Scheme, 1995 was notified by the Reserve Bank on June 14, 1995 in terms of the powers conferred on the Bank by Section 35A of the Banking Regulation Act, 1949 (10

of 1949) to provide for a system of redressal of grievances against banks. Since then the scheme has been revised four times - in 2002, 2006, 2007 and 2009 to make it more relevant and effective. Presently, there are fifteen Banking Ombudsmen with specific jurisdiction covering the 29 States and seven Union Territories in India. Since January 2006, the BOS is fully funded and administered by the Reserve Bank of India and its serving officers in the rank of Chief General Managers and General Managers are posted as Banking Ombudsmen.

The Scheme covers a wide range of complaints concerning deficiency in banking service rendered by Scheduled Commercial banks, Scheduled Primary Urban Co-operative banks and the Regional Rural banks. The major areas of customer grievances covered under the scheme include credit card complaints, internet banking, deficiencies in providing the promised services by both bank and its sales agents (DSAs), levying service charges without prior notice to the customers, non-adherence to the Fair Practices Code adopted by individual banks, non-adherence to Banking Codes and Standards Board of India's Code of Bank's Commitment to Customers, etc. As on date, there are 27 grounds on which customers can approach the Banking Ombudsman citing deficiency in banking services.

Janashree Bima Yojana and Aam Aadmi Bima Yojana merged

The Government has merged Janashree Bima Yojana (JBY) and Aam Aadmi Bima Yojana (AABY) into one scheme, since both the schemes have similar structure of benefits, premium and target group and are being implemented through Life Insurance Corporation of India (LIC). The schemes were merged for better administration and services in providing life insurance cover to the economically

backward sections of the society. It will also avoid any duplication of coverage of lives under the two schemes and thus allow more accurate claim experience. The objective of the merger of the two schemes is not to increase the savings but to ensure better administration and services under the schemes and also avoid any duplication of coverage of lives under the two existing schemes.

Rising NPA in SHG lending: Nabard Report

On the one hand, the number of self help groups obtaining loan from the banking system has been coming down over the years, indicating weakening of the movement in India. On the other, increasing bad loans from SHG portfolios are keeping commercial banks lending to them. The National Bank for Agriculture and Rural Development (Nabard) has already raised alarm over rising NPA in SHG lending in its recent report called, Status of Microfinance in India, 2011-12.

The number of SHG borrowers declined by around 4%, from 11.96 million to 11.48 million between March 2011 and March 2012, according to the Nabard report.

Also, in percentage terms the gross non performing assets from SHGs increased from 4.72% as on March 2011 to 6.09% as on March 2012.

However, the quantum of fresh loans issued to SHGs by banks rose 13.70% in to ₹16,535 crore in 2011-12, against ₹14,548 crore in the previous year. The report points out towards a cautious attitude of commercial banks to towards SHGs. While commercial banks accounted for 63% of the savings of the SHGs, their share in fresh lending against total lending to SHGs was just 60%. In contrast, while regional rural banks had a savings share of just 20% from SHGs, their share of fresh lending to them was close to 30%.

Crackdown on availing multiple loans against same property

To prevent incidents of fraud by availing multiple loans against the same property, the Central Registry of Securitisation Asset Reconstruction & Security Interest of India (CERSAI) and Credit

Information Bureau (India), abbreviated as Cibil, have decided to create a link between their websites. This will enable the lender to view at one go the borrower's credit score and the encumbrance

status of the property offered as collateral.

Nearly 300 banks, financial institutions and housing finance companies have registered themselves with CERSAI and are filing the details of the mortgages accepted by them, depositing title deeds. CERSAI has a database of more than 75 lakh records of equitable mortgages. Before

Banking License not Required by Cooperative Credit Societies

Cooperative Credit Societies are not required to obtain banking license from the Reserve Bank of India (RBI) under the provisions of the Banking Regulation Act, 1949. As per the existing instructions of RBI, the Primary Agricultural Cooperative Credit Societies (PACS) are not authorized to collect

Risks of shadow banking

Shadow Banking refers to the practice of banking-like activities performed by non-banking finance companies, which are not subject to strict regulation. However, these institutions function as intermediaries between the investors and the borrowers, providing credit and generating liquidity in the system. Although these entities do not accept traditional demand deposits offered by banks, they do provide services similar to what commercial banks offer. And this was one reason why they escaped regulation abroad. The shadow banking system had overtaken the regular banking system in offering loans in US before the financial crisis erupted in 2008.

accepting any title deed for mortgage, banks can look up the CERSAI database to ensure that there is no existing mortgage/loan against the property. R.V. Verma, CMD, National Housing Bank, said the information that lenders get after the synchronisation of the websites will act as a risk mitigant for the industry.

deposits from the public except members. They offer deposit services to their members and, in turn, use these resources to lend to the needy members of the Societies. This was stated by the Minister of State for Finance, Shri Namo Narian Meena in a written reply to a question in the Lok Sabha.

The 2008 financial crisis has shown that shadow banking can be a source of systemic risk to the banking system. The risks can be transmitted directly and through the interconnectedness of partially-regulated entities with the banking system. The Reserve Bank is simply following the trend of global central banks increasing surveillance on shadow banking. Basel III norms require central banks to tighten supervision on shadow banks across the globe through steps such as defining minimum capital. Deputy governor Anand Sinha has expressed the need to tighten shadow banking rules on various forums. RBI's focus is on regulating the informal

lending and borrowing business. Its concern stems from the interconnectedness of financial institutions.

The Usha Thorat committee has come out with draft regulations on NBFCs, such as increasing tier I capital and risk weight on certain assets. After the recommendations, smaller NBFCs with asset size of

Poor credit Deposit Ratio of Banks

Reserve Bank of India's Governor D. Subbarao expressed his concern over the poor credit-deposit (CD) ratio of banks in West Bengal. At 63%, the State is far behind the national average of 74%. According to Finance Minister Amit Mitra, out of the 37,000 villages in the State, 27,767 villages had no bank branches as on December 2012.

Quoting statistics revealed by the State Level Bankers' Committee, Mitra said, "In case of agriculture and allied activities, the banks have been able to fulfil only about 29% of their targeted action plan for the current year, while over 70% is left to be achieved as on September 30. In case of lending to micro and small enterprises also, the situation is similar with over 70% of their targeted plan still unfulfilled." Though demand for credit is lower in the two regions, mobilising deposits is a bigger challenge given the presence of a large unorganized chit-fund market there.

Mr. Subbarao, said that State Governments should be more vigilant and take prompt action against multi-level marketing by

less than ₹25 crore are likely to go out of business. The size of shadow banking has reached a record \$67 trillion in 2011, according to a report by the Finance Stability Board, a regulatory task force for the world's group of 20 economies. America has the biggest shadow banking system, followed by the Eurozone and the United Kingdom.

Ratio of Banks

chit funds. "Chit funds are into multi-level marketing and the responsibility of checking and prosecuting them is with the State Government. RBI does not regulate chit fund firms," Subbarao said. Chit funds, present in most parts of the country, are a highly flourishing business in West Bengal. According to RBI sources, the worst affected districts are 24 Parganas North and South, Hooghly, Malda, and Medinipur. The RBI Governor, however, said that the State's credit-deposit ratio was likely to go up to 65% in 2012-13, up from 63% during the past fiscal. "There has been an improvement in the CD ratio, and we have asked banks to take it up to 68 % in 2013-14," Subbarao said.

According to the Governor, 8 of the 18 districts of the State that had a ratio below 40 % are Bardhaman, Bankura, Birbhum, Hoogly, Murshidabad, Nadia, Purulia, 24 Parganas North and South, and Medinipur West. According to Subbarao, West Bengal also lagged behind most other states in extending credit linkages to self-

help groups (SHGs). "We have asked banks to provide linkage to additional 1.5 lakh self-help groups for extension of credit, other than those who have returned the loans and have good credit ratings," he said. Of the 11.16 lakh SHGs in the State, only 9.69 lakh are credit-

Farm costs panel pitches for stable agri-trade policy

In a discussion paper on "Farm Trade: Tapping the Hidden Potential," the CACP Chairman Ashok Gulati said a stable and liberal trade policy with moderate duties of 5-10% would go a long way in promoting agricultural growth. The guiding principles of such a policy should be the alignment of domestic and international prices along long-term trends, while guarding against sharp spikes and troughs. When global prices fall below a pre-identified triggers, higher import duties may be imposed, and when the world prices move above the trend line, an export may be imposed on a calibrated basis, the paper said.

The key to implementing such a policy is to continuously monitor domestic and international price trends and identify the trigger points for prompt action. This responsibility can be entrusted to CACP, which tracks global prices on a regular basis. CACP can advise the Government when to hike or

linked by banks, Finance Minister Mitra said.

"West Bengal has disbursed only about ₹551 crore to SHGs, while the disbursal in Andhra Pradesh is as high as ₹8,171 crore and that in Tamil Nadu stands around ₹2,000 crore," Mitra added.

RBI suggests curbs on number of free cheque books issued to individuals

lower import duties or when to export duties, base on the global price movements, it said. Further, the Commission can also help the Government in identifying the distortions in import duty structures of a crop complex and streamline them to get efficiency gains. Highlighting the potential to increase agri-trade with East and South East Asian nations, the paper made a case for reviewing the exclusion of agri-products from the free trade agreement-type arrangements with Association of South East Asian Nations and with Japan and Korea.

India, a net agriculture exporter, had shipped agri-commodities worth more than \$37 billion in 2011-12 against imports of around \$17 billion. India has emerged as the world's largest exporter of rice, displacing Thailand and Vietnam. Besides, India has also emerged as the largest exporter of buffalo meat worth \$3 billion beating Brazil, Australia and the US.

LAND BANK JOURNAL

To encourage use of electronic payments and minimise use of cheques, an RBI discussion paper

has recommended that the number of free cheque books given per year to individuals may be kept to a

minimum. The charges levied by banks beyond this minimum number may range from moderate to steep (slab rate), depending upon the usage history of the customer.

A quick look at the charges being levied by banks shows that generally they provide 2050 cheque leaves to savings bank customers for free, either on a quarterly or annual basis. Few banks do not provide any free cheque books, while a few others provide free-of-cost cheques every quarter. Beyond this, the charges levied range from ₹2 to 3 a cheque leaf. In most banks, current account holding customers are not given any free cheques, though the charges are very nominal ranging between ₹3 and 4 a leaf.

Post-dated cheques

In case of fresh loans, the paper said post-dated cheques (PDCs) should be completely stopped and repayments should be only through electronic payments, with suitable conditions for late payment and non-payments, which should be disclosed upfront. Existing PDCs should be converted to electronic payment mandates within a prescribed timeline.

The paper said credit card dues should be paid electronically. In case cardholders make payments of dues using cheques, then high convenience charge may be levied

by the card issuing bank. The RBI paper also suggested setting some amount/value limit for cheques issued by individuals.

For any cheques issued beyond the stipulated limit, charges may be levied at the time of payment / debit to the account by the paying bank when the cheque is presented for payment through clearing. Such charges may be higher than the charges levied on electronic payments of similar value.

In case of individuals who have invested in shares / debentures / bonds and have not opted for receiving dividend/interest directly into their bank accounts, a processing charge could be levied when the cheque is deposited into their bank account for collection.

In order to avoid increased dependence or slippage to cash-based transactions, high (both in amount and frequency) cash withdrawals and deposits of cash by individuals may also be charged. Implementation of this may, however, be preceded by conducting a structured research and concerted efforts at customer education.

The paper said cheque collection boxes at public places should be discouraged have it only at bank branches. This will reduce the convenience of using cheques by individuals, it said.

Charge prepayment penalty only on fixed rate loan dues: RBI

A report on the 'Feasibility of Introducing more Long-Term Fixed Rate Loan Products by Banks' from

the banking regulator has said banks should charge pre-payment penalty only on the outstanding

loan amount and not on the value of loans as is normally done. The guideline will help borrowers save substantial amounts if they were to prepay a fixed rate loan. This comes after the RBI's recent mandate to banks to do away with pre-payment penalty on floating rate home loans.

The RBI committee that prepared the report has also advised banks to popularise long term deposits to develop a longterm fixed rate product. The committee notes that the Indian financial system has government bonds for up to 30 years. This creates a

benchmark to issue and price 30-year bonds by banks. Banks could, therefore, make efforts to offer longer-tenor fixed rate loans, say up to 30 years, which would help reduce the EMIs of borrowers. Fixed-rate long-term loan products with periodic interest reset provision (say every 7-10 years) may be offered by banks in addition to plain vanilla fixed-rate loan products. However, banks should take care that the resetting of interest rate does not violate regulatory guidelines on the base rate, the report said.

Bad loan situation of banks likely to worsen this fiscal: Study

Over a dozen banks in India saw their net non-performing assets (NPAs) more than double in 2011-12, and the situation may worsen in 2012-13, according to NPAsource.com, a portal focusing on resolution of stressed assets.

Among the large banks, Central Bank of India's net NPAs rose by over 400%, followed by Indian Bank (201%), Oriental Bank of Commerce (162), Corporation Bank (119) and Punjab National Bank (118). Foreign banks such as Bank of Bahrain & Kuwait (399%), Chinatrust Commercial Bank (269), DBS Bank (232) and Standard Chartered Bank (193) too figured amongst banks with very high increase in their net NPA levels.

The NPA situation has worsened in the first half of 2012-13, with gross NPA growth rate at 45.7% being far higher than the growth in gross advances by banks

in India. Some of India's biggest banks which reported the highest increase in net NPAs in 2011-12, faced further deterioration in asset quality in the first half of 2012-13 too. Central Bank of India's net NPA growth rate jumped by 224.5%, PNB's by 277%, and Indian Bank's by 111%.

India's largest bank, the State Bank of India, too saw its net NPAs shoot up by 40% during the first half of 2012-13 as against an increase of 28% in the previous financial year ended March 31, 2012, he said. As of September 30, 2012, net NPAs for 39 listed banks were higher by around ₹31,100 crore, or 58%, compared to the corresponding period last year, the analysis by NPAsource.com shows. Of this, around 75%, or ₹23,300 crore, has risen during first half of FY 2012-13. Similarly, gross NPAs

as of September 30, 2012, were higher by ₹53,000 crore, or 46.7%, compared to the corresponding period last year. Of this, 66%, or ₹35,200 crore, has risen during first half of FY 2012-13. Even as the gross NPAs of all banks shot up by 45.7% for the first half ended September 30, the gross advances growth rate was just 15.9%, according to the recent data

Avoid arbitrary pricing of banking products & services, says RBI's Dy. Governor

The Reserve Bank of India is prodding banks to pursue the twin objectives of enhancing financial literacy and achieving financial inclusion. This will help bring the marginalized sections of society to the mainstream, said K.C. Chakrabarty Deputy Governor, RBI.

Banking services have to be made available close to where the individual needs them, at prices he can afford, and in a transparent manner, he said, while speaking on 'Banking as a Fundamental Right of People' at the 27th National Conference of All-India Bank Employees Association. He pointed out that the financial inclusion efforts have not achieved the desired results despite the banking system being in existence for more than 200 years and several banks credited with more than 100 years of service.

Maharashtra promulgates ordinance to amend co-operative societies Act

The Maharashtra Government promulgated an ordinance to amend the Maharashtra Co-

released by the RBI.

The analysis done by NPAsource.com shows that net NPAs of 39 listed banks as of March 2012 were ₹61,380 crore, which rose to ₹84,680 crore as of September 2012, a growth of 38%. Similarly, gross NPAs as of March 2012 were ₹1,31,400 crore, which rose to around ₹1,66,600 crore as of September 2012, a growth of 2%.

Considering the widespread exclusion of people from financial mainstream, the RBI in 2005 launched a drive to extend banking services to all inhabitations in the country. Banking services are now available in over two lakh villages, but about four lakh villages still have no access to the services. Banking services can be extended to un-banked centres in both rural and urban areas by leveraging on technology, he added.

Arbitrary pricing of banking products and services must be avoided to bring these within the reach of the common man, he emphasised. He said that employee associations have a pivotal role in instilling a sense of commitment and help make available banking services at customers' doorsteps.

operative Societies Act, which aims to promote voluntary formation, autonomous functioning,

democratic control and professional management of co-operative societies. The ordinance is to amend the Act to make it in consonance with the 97th constitutional amendment by Parliament.

According to the salient features of the proposed amendments, the maximum number of members of the committee of a co-operative society shall be 21, out of which along with other reserved seats, two shall be reserved for women. Term of office of an elected member of the committee and its office-bearers will be five years from the date of their election. A State co-operative election authority will be established which shall be vested with power to supervise, control and conduct elections to the societies. The amendment will provide for filling of casual vacancy by nomination if the term of office of the committee is less than half of its original term. A provision for co-option of expert directors and functional directors will be made.

Similarly, there will be provision for suspension or super-

session of the committees of the co-operative societies, for the period not exceeding six months where the Government has held shares of such society or granted any loan or provided financial assistance or any guarantee, and for period not exceeding one year in case of co-operative banks. There will be audit of accounts of societies at least once in each financial year through the auditor or auditing firms appointed by the general body of the co-operative society from a panel approved by the Government or any authority authorized by it.

General Body meeting of every society will be convened within a period of six months of close of the financial year. There will be a provision for settlement of disputes by arbitration or conciliation and by mediation through Lok Adalats and for appointment of grievances settlement and redress committees for settlement of grievances. Provisions of Banking Regulation Act 1949 shall apply to co-operative societies doing banking business.

Allow scientists to hold field trials of GM crops, says Agriculture Minister

Making a case for Genetically-Modified (GM) technology to boost farm output, Agriculture Minister Sharad Pawar said scientists should not be denied the right to conduct field trials of such crops. “We cannot afford to curtail the vigour of our scientific community and deny them the right to conduct

trials, as has been done for some GM crops, despite being subjected to strictest controls of bio-safety,” Pawar told the 84th Annual General Meeting of the Indian Council of Agriculture Research (ICAR).

Constrained by depleting natural resources, including arable land, Pawar said “We do not have

any option but to try and achieve a major breakthrough in productivity to ensure food security of 1.2 billion plus population of our country. The process of research should not be stopped as it would demoralise the scientific community," he added.

Three years ago, the Government had put moratorium on the commercial release of Bt Brinjal on safety concerns. In August 2012, the Parliamentary Standing Committee on Agriculture had recommended that all field

Nabard pegs AP credit potential at ₹1.09 lakh crore for 2013-14

The Nabard (National Bank for Agriculture and Rural Development Bank) has put the credit potential for Andhra Pradesh at ₹1.09 lakh crore for farm and non-farm sector activities under the priority sector for the financial year 2013-14. This would be 28% over the current financial year's credit potential for the sector.

RBI tweaks gold deposit scheme of banks

Seeking to unfreeze idle gold, the RBI made the gold deposit scheme of banks more attractive by lowering the investment time period and allowing mutual funds to participate in the scheme. "It had now been decided to change the maturity period, of gold deposit schemes, ranging from six months to seven years," the RBI said in a circular.

Earlier the maturity period for the said scheme was between three and seven years. As per the estimates of an RBI committee, about 20,000 tonnes of idle gold is lying with the

trials in GM crops should be discontinued forthwith. The Agriculture Minister said ICAR must priorities technologies towards the resource of poor farmers and enable them to take advantage of new technologies. "Equipping the farmer to tackle the climate change and erratic monsoon should be an important agendum" Pawar said. On the impact of recent rains on rabi crop, the Minister said "By and large, our report on wheat crop is quite good.

"We have prepared this roadmap in consultation with the officials of various departments and banks," K.R. Nair, Chief General Manager of Nabard (AP) said. The Andhra Pradesh Government has asked public sector banks and Nabard to find certain deficiencies in different sectors while preparing State credit plans.

people. The central bank wants to channel the idle gold for productive purposes and also check the demand for imports. Further, SEBI registered mutual funds and exchange traded funds may deposit under the scheme, the RBI said.

It further said the banks would not be required to obtain prior approval of the RBI for introducing the scheme. However, they would be required to inform the details of the scheme, including name of branches operating the scheme, to the central bank.

Nabard pegs ₹1.06 lakh cr. rural credit outlay for Tamil Nadu

The National Bank for Agricultural and Rural Development (Nabard) has pegged ₹1.06 lakh crore as rural credit outlay for Tamil Nadu under various sectors for 2013-14. The credit outlay was prepared based on the Potential Linked Plans (PLP), marking an increase of 37% over last year's figure of ₹77,803 crore. It was expected to touch ₹1.49 lakh crore by 2016-17. In the State Focus Paper, Nabard tries to identify and highlight the critical infrastructure required in every sector and the investment that needs to be made to give a fillip to agriculture and rural development in the State. It also highlights the last-mile projects that need to be taken up on a priority basis. Out of ₹1.06 lakh crore earmarked as rural credit, ₹39,135 crore is for crop

Govt clears hike in NABARD's capital

The cabinet has approved enhancing the authorised capital of the National Bank for Agriculture

Banks advised to increase the pace of NPA recovery

Worried over the slowdown of the economy and the rising Non-Performing Assets (NPAs) of public sector banks, the Reserve Bank of India (RBI) has asked banks to put a loan recovery policy in place while the government has asked them to take new initiatives to increase the pace of recovery and management of NPAs.

The cause for concern is the fact that the NPAs of public sector banks rose close to 1% point from 3.17% to

production, maintenance and marketing, ₹28,063 crore towards agricultural term loan, ₹20,003 crore for MSE sector and ₹19,208 crore for other priority sector activities.

“We need to redouble our efforts to ensure 4% average growth in agriculture. Issues of food security continue to be in forefront of all discussions. Further, the share of agriculture in the Gross State Domestic Product has been declining over the years. This needs to be addressed through developmental measures based on agro-climatic zones, encouraging wasteland development, adopting public-private-partnership mode which would enhance the production and productivity of food grains,” Chief General Manager, Lalitha Venkateran said.

Govt clears hike in NABARD's capital

and Rural Development to ₹ 20,000 crore, from ₹ 5,000 crore.

Banks advised to increase the pace of NPA recovery

4.01% in six months to September 2012, according to official records of the Finance Ministry. On its part, the RBI has asked banks to have a loan recovery policy, which sets down the manner of recovery of dues, targeted level of reduction (period-wise), norms for permitted sacrifice/waiver, factors to be taken into account before considering waivers, decision levels, reporting to higher authorities and monitoring of write-off/waiver cases.

The government has also asked banks to undertake new initiatives, which include appointment of nodal officers for recovery, conducting special drives for recovery of loss assets and putting in place an early warning system. Banks have also been asked to replace the system of post-dated cheques with the

Export of agricultural, allied products grows 40%

Agricultural and allied products, chemicals and related products have posted strong growth in exports during the first seven months of the 2012-13 fiscal piping traditional goods, according to the data collected by the Director General of Commercial Statistics and Intelligence. According to foreign trade performance analysis,

What is an “Act of God”?

The term, Act of God, is widely used in insurance policies covering natural disasters. In fact, Bollywood release, Oh My God, popularized this legal term by making it its central theme.

An 'Act of God' is an event or events forced by nature, such as floods, cyclone and volcanic eruptions, for which no one can be held responsible. Such policies cover damage caused by natural disasters such as floods and hurricanes. Only specific natural catastrophes defined in the policy are covered. For example, if a policy covers flood as an Act of God but not cyclone then the policy will not pay for damage caused by a cyclone. An Act of God policy does not insure against earthquakes, which are

Electronic Clearance System (ECS), e-auctions, sharing of credit information through CIBIL, assigning of loss assets on incentive basis to asset reconstruction companies and giving weight age to recovery of NPAs in the statement of intent on annual goals of public sector banks.

Export of agricultural, allied products grows 40%

agricultural and allied products, which had a share of 11.43% in the total export basket, grew by as much as 40% during April-October 2012 to stand at \$18.86 billion while chemicals and related products, with a share of 14.51% in the total export basket grew 6.33% and stood at \$23.93 billion during the seven month period.

covered under a separate policy. Insurance contracts often exclude Act of God from the list of insurable occurrences. This is an extension to the fire insurance policy and not a part of the group coverage. It comes with additional premium. Earlier it was built in under the standard fire policy and one had the option of opting out of it by getting a discount of 0.25% per thousand of the sum assured. Car owners have the coverage if they buy a comprehensive motor insurance policy. Most home insurance packages cover Act of God. The decision should be based on the risk and nature of the asset (home, car or property) as it costs an extra 0.25% per thousand of the sum assured. Earthquake insurance is

priced separately because the severity of damage depends upon the country's respective seismic

Is your cheque book CTS compliant?

Under the CTS system, the physical movement of cheques between banks will be eliminated. Normally, when you issue a cheque to someone, he presents the cheque in his bank to get the credit. The cheque then moves physically from his bank to your bank which involves a lot of time and risk. RBI recognized the disadvantages of this old system and brought about CTS, where instead of the physical movement of the cheque, an electronic image of the cheque is transmitted to the drawee branch.

The presenting bank (which is the bank of the person to whom you had issued the cheque to) retains the physical cheque. Along with the electronic image, certain key relevant information is also transmitted, such as date of presentation, presenting bank details, data on the MICR band. A CTS compliant cheque leaf is different from a normal cheque leaf you currently use, and has certain distinct features.

- ▶ Cheque printer details: The printer details along with the words 'CTS-2010' is mentioned along the area where you tear off the leaf from the cheque book.

Bad loan classification, provisioning for NBFCs to be brought on par with banks

Non-banking finance companies will have to follow the asset classification and provisioning

zones (I, II, III and IV). The rates vary between 0.1% and 1% of the sum assured.

Is your cheque book CTS compliant?

- ▶ Rupee symbol: The new symbol of the Indian rupee is printed beside the area where the amount in figures needs to be written.
- ▶ Details of the bank and its logo: The bank details and its logo are printed on the face of the cheque. However, it is printed in invisible ink.
- ▶ Signature space indicator: The words 'please sign above' are mentioned indicating the space where you will need to sign the cheque.
- ▶ VOID pantograph: This is a wavelike design, which is visible to the naked eye and seen below the area where the account number is printed.

The CTS helps in speedy clearance of cheques resulting in faster credit to your account. This is because there is no physical movement of cheques and hence time is saved. Further, the absence of physical movement also eliminates the risk of loss of cheque in transit. The different locations are proposed to be integrated under this system in order to cut geographical restrictions in cheque clearing.

norms applicable to banks from April 1, 2015, according to the Reserve Bank of India draft

guidelines for the NBFC sector. At present, the period for classifying loans as bad in the case of NBFCs is higher at 180/360 days compared with 90 days for banks.

The asset classification and provisioning norms for NBFCs will be implemented in phases: a 120-day norm shall be applied from April 1, 2014 to March 31, 2015 and a 90-day norm thereafter, the Reserve Bank of India said in its Review of NBFC Regulatory Framework. The RBI also proposes to raise the provisioning for standard assets from 0.25% to 0.4% of the outstanding loans with effect from March 31, 2014 for all NBFCs. The central bank has also tightened the norm for raising deposits. The limit for acceptance of deposits for rated Asset Finance Companies (AFCs) has been reduced from 4 times to 2.5 times their net owned funds. All existing deposit taking NBFCs, including AFCs, should be credit rated and that unrated NBFCs, including AFCs, should not be permitted to accept deposits.

How RBI's policy actions affect you?

The RBI is the nation's banker. Its most important task is to maintain price stability, regulate the financial markets, and ensure adequate flow of credit. The RBI controls all this by various monetary policy tools such as the repo rate, the reverse repo rate and the cash reserve ratio.

The repo rate is the rate at which the RBI lends money to commercial banks. If the RBI wants

All registered NBFCs deposit as well as non-deposit taking will be required to take prior RBI approval where there is a change in control and/or increase of shareholding on the extent of 25% or more of the paid-up equity capital. For any acquisitions and for all mergers by or of an NBFC, the NBFC involved should approach the RBI (even before filing for the same in the courts) to ensure adherence to the basic tenets of corporate governance. Appointment of CEOs of NBFCs with asset size of ₹1000 crore and above would require RBI's prior approval.

The central bank said that Tier I capital (core capital) will be raised to 12% for all captive NBFCs (over 90% of total assets are on financing parent company's products / services). Further, for NBFCs that are into lending to/investment in sensitive sectors namely, capital market, commodities and real estate, to the extent of 75% or more of their total assets the Tier I capital will be raised to 12%.

to flood funds into the system, it lowers the repo rate. The reverse repo rate is the rate at which the RBI borrows money from commercial banks. Increasing this rate drains excess funds out of the banking system. The cash reserve ratio (CRR) is the amount of funds banks have to keep with the RBI. If the central bank increases the CRR, the amount available with the banks to lend comes down.

Increases or decreases in the repo rate impact the interest rate on loans, mortgages and deposits. How? This is where we need to understand the concept of "base rate," that is, the minimum rate at which banks can lend. Each bank sets its base rate depending on the cost of deposits, administrative costs, its profitability and other parameters. Loan rates are based on this. So, when the repo rate goes down, banks can obtain funds at a lower rate. This benefit may be

Tamil Nadu emerges second largest dairy player after Gujarat

With nearly 70 lakh litres of milk being handled daily by the cooperative and the organized players in the private sector, Tamil Nadu has emerged the second largest dairy player after Gujarat. Though a far second, with cooperative in Gujarat alone handling 1.2 crore litres of milk, two of the largest players in Tamil Nadu, the Tamil Nadu Cooperative Milk Producers Federation and the private sector Hatsun Agro Product Ltd together procure nearly 50 lakh litres of milk directly from dairy farmers.

RBI revises definition of infra lending

The Reserve Bank of India (RBI) revised the definition of 'infrastructure lending', which would make sectors and sub-sectors eligible for infrastructure lending by banks and financial institutions with immediate effect. The Government of India had notified a master list of

passed on to customers, in the form of reduced interest rates on loans.

When the CRR is raised, banks have to increase the funds they keep with the RBI. As the CRR earns no interest, banks may have to recoup costs through other lending. They may also have a lower amount available to lend. This may result in interest rates going up. Remember, a CRR change does not always warrant a change in a bank's base rate.

Tamil Nadu emerges second largest dairy player after Gujarat

The Dairy Development Department had announced that co-operatives in Tamil Nadu were procuring about 27 lakh litres of milk daily. The milk is sold as liquid, packeted milk and processed into various dairy products. In the private sector, Hatsun Agro procures about 21-24 lakh litres of milk daily and according to the Tamil Nadu Dairy Association, which represents over 100 small dairy companies that sell branded milk in packets, some of them procure up to 25,000-50,000 litres daily.

infrastructure sectors/sub-sectors to avoid multiplicity of definitions among various regulators which gives rise to confusion and difficulties. The sectors and sub-sectors come under revised infrastructure lending are:

Transport: Roads and bridges, ports inland waterways, airport,

railway track, tunnels, viaducts, bridges, including supporting terminal infrastructure such as loading/unloading terminals, stations and buildings, urban public transport (except rolling stock in case of urban road transport).

Energy: Electricity generation, electricity transmission, electricity distribution, oil pipelines and oil/gas/liquefied natural gas (LNG) storage facility (including strategic storage of crude oil) and gas pipelines, including city gas distribution network.

Water and sanitation: Solid waste management, water supply pipe lines, water treatment plants, sewage collection, treatment and

disposal system and irrigation (dams, channels, embankments and the like) and storm water drainage system.

Communication: Telecommunication (fixed network) including optic fibre/cable networks which provide broadband / internet and telecommunication towers.

Social and commercial infrastructure: Educational institutions (capital stock), hospitals (capital stock), including medical colleges, Para medical training institutes and diagnostics centers and three-star or higher category classified hotels located outside cities with population of more than one million.

IARI basmati sees more yield, prices: MS Swaminathan

Lauding the efforts of scientists of Indian Agriculture Research Institute (IARI) in developing new varieties of basmati, chairman of MS Swaminathan Research Foundation (MSSRF) MS Swaminathan said farmers of Punjab, Haryana and parts of UP have reaped benefits from new seeds. He said the farmers have been able to raise Basmati production three times and gained over 50% more in terms of export prices. Announcing the 'Borlaug Award', constituted by Coromandel International, at an event, Swaminathan said two IARI scientists had developed new basmati varieties, which have redefined the way farmers cultivate and enable them yield better and

prices in the international markets.

Nearly 70% of the total basmati cultivated areas are under new varieties and farmers are happy to see that as against 15 quintal per hectare they can yield nearly three times more or around 45 quintal per hectare. They could also generate 50% to 60% more revenue and would be making additional revenue of ₹5,000 crore through exports and domestic sale. These scientists have contributed significantly towards devising the breeding strategy for combining poly-genes for various Basmati quality traits including linear cooked kernel elongation a main feature of Pusa Basmati 1121, currently the most widely cultivated rice variety. They also assisted

pyramiding of bacterial blight resistance genes in Pusa Basmati varieties and incorporated bacterial blight resistance genes in parental

Banks must share credit info: RBI

Concerned over the surge in non-performing assets (NPAs) and restructured loans of banks, the Reserve Bank of India (RBI) has made it mandatory that any sanction of fresh loans or renewal of loans to new and existing borrowers should be done only after obtaining and sharing necessary information from other banks from January 1, 2013.

"Banks should strictly adhere to the instructions regarding sharing of information relating to credit, derivatives and unhedged foreign currency exposures among

Analysis of Financial inclusions

It is almost six years since the Government initiated the process of financial inclusion in a big way. In fact, models such as Business Correspondents (BC) have started emerging as a new way of delivering banking in un-banked areas. Compared to the brick-and-mortar branches, the BC model has seen rapid growth. While the branch expansion in rural areas with population of more than 2,000 registered a growth of 7.64% in 2011-12, the number of business correspondents witnessed nearly 10 times that growth. The evolution of the BC model has helped the banks provide banking services to customers without having a branch of theirs. The use of mobile

lines of Pusa varieties, carrying blast resistance and tolerance to salinity.

Banks must share credit info: RBI

themselves. A major reason for deterioration in the asset quality of banks is the lack of effective information sharing among banks regarding their credit, derivatives and unhedged foreign currency exposures," it said in a notification. The RBI has also asked the banks to strengthen their information back-up about the borrowers enjoying credit facilities from multiple banks by obtaining declaration from the borrowers about the credit facilities already enjoyed by them from other banks.

technology is an important part of providing banking services under the BC model. Some banks are disbursing social security schemes' funds through the BCs.

An analysis of the progress in the implementation of the Government-mandated financial inclusion plan (FIP) shows that penetration of banking has increased in rural areas. At the end of March 2012, villages covered by BCs constituted more than 80 % of the total villages covered under the FIP. Under FIP, no-frills accounts enable customers to avail themselves of stress-free credit in the form of in-built overdraft facility. At the end of March 2012, no-frills accounts had surpassed

100 million in number. The number of ICT-based (information and communication technology) accounts as a percentage of no-frills accounts has witnessed a steady increase in the last two years, indicating increased acceptance of

Tax breaks for solar energy plants in Bihar's wastelands

Suffering from huge power shortage, the Bihar Government has devised a policy to encourage the use of solar energy in the State that would provide tax incentives for installing such plants on wastelands. As part of this policy, the State Government has decided to exempt registration and entry taxes on installation of solar energy plants on wastelands. According to

Farm Loan Waiver to cost UP at least ₹ 1,650-cr.

The Uttar Pradesh government waived loans of farmers who have taken up to ₹50,000 from cooperative rural development bank, a decision that would benefit 7.2 lakh farmers. Chief Minister Akhilesh Yadav said the loan waiver would be given to farmers, who have been sanctioned loan up to ₹50,000 and have deposited at least 10% of the actual amount by March 31.

Farmers consortium calls for decontrol of rice, wheat

The Consortium of Indian Farmers Association (CIFA) has demanded removal of all trading controls on exports of rice, wheat and cotton. The association wanted the Government to allow them to export whenever international markets offered them good prices.

A national level meet of farmers,

ICT-based products among rural customers. The financial inclusion drive, both in urban and rural areas, is likely to help different business models evolve and open up more opportunities in the banking sector.

Tax breaks for solar energy plants in Bihar's wastelands

an International organization 'WISE' (World Institute of Sustainable Energy) engaged in mapping prospects for production of solar energy, Bihar comes in the moderate solar radiation zone. Bihar witnesses 280 days of sunshine which reflects tremendous scope for developing solar energy market, according to WISE.

Farm Loan Waiver to cost UP at least ₹ 1,650-cr.

"There remaining loan, including interest, is being waived," he said. He said as a result, loans amounting to around ₹1,650 crore would be waived. The party has promised that provision of auctioning mortgaged land of the farmers on which loan has been taken would be abolished and in such a situation loan would be waived." He said.

Farmers consortium calls for decontrol of rice, wheat

discussed the status of trade in wheat, rice and cotton and strongly felt that the Government was coming in the way from realizing good returns. The meet demanded that the country should have an exclusive Budget for issues related to agriculture. "The farming sector deserves an exclusive Budget. This

will help the country plan better and tackle farm challenges," P. Chengal

Farmers in parched lands of Maharashtra get additional 17% power subsidy

The Maharashtra state cabinet granted a further 17% subsidy on power bills to farmers in areas facing water scarcity. With this, the total subsidy goes up to 67%. At present, 6,250 villages have been declared water scarcity-affected. Villages where kharif yield is less than 50% of average produce are termed scarcity-hit. "The remaining

Reddy, Secretary General of CIFA, said.

Farmers in parched lands of Maharashtra get additional 17% power subsidy

33% will have to be paid by gram panchayats or regional water supply scheme operators such as those under Maharashtra Jeevan Pradhikaran," said relief and rehab department principal secretary. The state has already decided to allow payment of bills issued before April 1, 2012, in 12 installments under Abhay Yojana.

Agriculture needs scientific debate, not emotion

Adopt a value system based on science, Prime Minister Manmohan Singh urged. "Complex issues, be they genetically modified food or nuclear energy or the exploration of outer space, cannot be settled by faith, emotion and fear, but by structured debate, analysis and enlightenment," the Prime Minister said during his speech at the 100th Indian Science Congress.

Transformation of the agricultural sector, Singh said, should be one of the top priorities. The 12th Five Year Plan, he said, assumed a sustained growth in agriculture at the rate of 4% a year, essential to achieve food security.

"This growth is constrained by shortages of water and also of land. We need new breakthroughs in water saving technologies, enhancement of land productivity and development of climate-resilient varieties," he said.

According to Singh, a scientific approach and understanding of these issues are, "as vital as our core scientific capabilities." For this, the country has to invest in popularizing science not only in educational institutions but also in homes, workplaces, communities and all available communication methods.

Changes in ARDBs

Shri Kollukuduru Veera Reddy, has assumed charge as President of the

Andhra Pradesh State Co-op. Bank Ltd., w.e.f. 27th February 2013.



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AGRICULTURAL NEWS

Govt. Hikes MSP of 5 rabi crops

The Central government approved a hike of up to 20% in the support price of five rabi crops, including pulses and mustard seed, but left wheat untouched, making it clear that grain farmers do not need additional incentive after three consecutive bumper harvests.

But the higher MSP for oilseed and pulses may not be enough to attract more acreage since market prices of these commodities are already above the revised MSP. The Cabinet Committee on Economic Affairs (CCEA) has approved the MSP of

barley at ₹980 per quintal, gram at ₹3,000 per quintal, masur (Lentil) ₹2,900 per quintal, rapeseed/mustard at ₹3,000 per quintal from ₹2,500 and sunflower ₹2,800 per quintal. But dal and oilseeds processors said that the hike in MSP will not help increase the production of these crops as farmers are aware that market prices are ruling higher. The current market price of masur is ₹3,200/quintal to ₹3,400/quintal. Chana dal prices are expected to touch ₹3,400/quintal in the coming months.

Post-harvest supply chain, poor warehousing woes of agri sector

Agricultural produce to the tune of ₹50,000-60,000 crore is lost due to poor post-harvest infrastructure and insufficient supply chain management, according to a report on Indian Agribusiness. Most warehouses and logistics providers lack adequate scientific and technical facilities to store and transport perishable commodities such as seafood, fruits, vegetables, the report “Indian Agribusiness cultivating future opportunities” by Boston Consulting Group said.

About 30-40% of horticulture produce is wasted annually due to inadequate storage and transportation facilities, it said, pointing out that the shortfall for warehouse capacity is likely to touch 70 million tonnes (mt) to 80 mt by 2015. “The country currently

requires 130-140 mt of dry storage for a production of approximately 220 mt of food grain, 27 mt of oilseeds, and 35 mt of other cash crops such as cotton, jute,” the report said.

The warehouse sector is currently highly fragmented with its presence being confined primarily to local players. The key challenge in the industry is to tackle the domination by unorganized players with low capacities and poor handling, stacking and monitoring facilities.

The problem in the sector was that a majority of the warehouses are about 5,000 sq ft in space against an average size of approximately 50,000 sq ft in developed countries. Smaller sizes limit the ability of warehouse owners to invest in highquality construction, technology, and

modern material handling equipment, the report said.

Other problems facing the sector were uneven distribution of warehousing facilities with most of the sector concentrated in Uttar Pradesh, Andhra Pradesh, Punjab and Haryana and lack of supporting infrastructure such as power and specialized transport. Though the Centre has come up with various measures such as the Warehousing Development Act and

allowing 100 % FDI investment, the traditional business model of the sector is not economically viable, the report said. Based on cost-benefit analysis, the report said the recommended approach for an entrepreneur in the sector was to build strong presence in a select geography, expand offerings, become a strong pan-India player and look for multi-revenue streams.

Area under cataract farming in Punjab heads downward

Punjab, the first state in the country to initiate contract farming at government level, has practically wound it up after a decade, with areas cultivated under this policy falling sharply over the past few years and the government apparently showing little interest in continuing.

A senior official in the Punjab Agro Food grain Corporation (PAFC) Ltd, which was given the task of implementing the scheme by the Punjab government, said the programme could have been successful only with supply of quality seeds of the identified crops and continuous motivation for farmers. Sandeep Talwar, senior manager in the PAFC's contract farming division, said the scheme introduced in 2002-03 is now closed. The government is now planning a new policy to encourage diversification of crops, he pointed out.

When the contract farming scheme was launched in 2002-03,

the objective was to motivate farmers to diversify from the eternal cycle of wheat and paddy. According to information obtained under the RTI Act, the area under contract farming hit 2.39 lakh acres at its peak in 2007-08 but fell to 84,746 acres in 2011-12. The PAFC had started the scheme with 22,312 acres in 2002 and increased the area 10 times in a couple of years. It is since 2008 that the area under CF has started falling, the many reasons including poor marketing of crops grown.

As per the scheme, the PAFC was to encourage farmers to cultivate quality, marketable produce, chosen according to demand-supply equations. Farmers would sign a contract to produce the identified crops, which included hyola (hybrid rapeseed mustard), sunflower, Durum wheat, malting barley, moong, basmati and maize. In 2002, hyola, sunflower, malting barley and maize were taken up for contract farming with 9,296

hectares dedicated to these crops. In brought under moong, basmati, maize, guar and castor. By 2004-05, over 2 lakh acres was under

various crops under the scheme. Till 2009-10, 75000 acres was under basmati and 59000 acres under maize.

Improving yield through Integrated Soil Fertilizer (ISF)management

Integrated soil nutrient management envisaging supply of all the essential plant nutrients in balanced proportions using manures, fertilisers and biofertilisers would not be sufficient today for improving and sustaining soil fertility and health. It is important for farmers to remember that integrated practices could prove to be effective only if the soil texture is loamy or at least clayey loam or sandy loam besides being nonsaline with the soil reaction in the neutral range of pH 6.5 to 7.5 or at least between 6.0 and 8.0 and the organic matter status not lower than 2 %.

Even if all the essential plant nutrients are supplied in sufficient amounts and desirable proportions, the bioavailability of these nutrients in balanced proportions for absorption by the crops depends upon the physical, chemical and biological properties of the soil. So, the overall soil environment must be taken care of, to ensure better performance of the crops.

Most of our arable soils are not loamy in texture, being either sandy or clayey. Excessive drainage accompanied by the loss of

nutrients through leaching and low water-holding and nutrient-holding capacities are the major problems of sandy soils limiting plant growth. Poor drainage accompanied by anaerobic conditions and hard pan formation in the subsoil zone are the major problems of heavy clayey soils. They must be improved towards loamy texture through soil breeding technology, salinity must be reduced in some soils to alleviate the physiological drought and to ease the absorption of water and nutrients by the plant roots.

Soil acidity and alkalinity must be reclaimed and the pH must be maintained in the range of 6.5 to 7.5 so that the availability of nutrients will be optimal. Scope for extending the area for agriculture is limited due to diversion of more lands every year for non-agricultural purposes. However, our country has a number of hybrids and good growing varieties of all crops readily available at all ICAR institutes. So, the only possible scope to maximize crop production with the available varieties is hybrids of crops, efficient water management and plant protection measures.

Organic SRI motivates seed production by small farmers

At a time when farmers are heavily depending on State owned seed corporations and private seed companies for their seed needs every cropping season, a group of organic farmers in Nallangalpatti village in Tamil Nadu is engaged in a silent revolution to completely reverse the situation through collective action. They are not only involved in producing their own seeds and exchanging it among themselves, but also supplying the seeds to Government owned seed farms.

Nallathangalpatti is a small village of Puliyur Panchayat of Kulathur taluk in Pudukkottai District and has around 70 farm families. This village has been one among the target villages of Kudumbam, an NGO working with resource poor farmers in establishing sustainable agriculture alternatives in Pudukkottai District. Over the years, Kudumbam organised a mixture of capacity building programmes like village awareness creation meetings, on-field demonstrations of bio input preparation and facilitating farmers' field schools for the farmers' group of this village.

The process of participatory learning and sharing methods had motivated and acclimatized them to organic farming methods. Paddy has been the predominant crop for this village under irrigated condition. During 2003,

Kudumbam initiated steps to introduce SRI (System of Rice Intensification) method in this village. Since, it was a new technology at that time; it approached one of the experienced organic farmers' groups in that village and discussed with the farmers whether they would be interested in experimenting with SRI.

The Organic Farmers Group (Iyarkkai Vivasaayegal Kuzhu) came forward and expressed its interest in experimenting with SRI method of paddy cultivation. Though, the farmers' group had long experience in organic farming methods, initially the farmers were a little reluctant in experimenting with a technology like SRI. Hence, the farmers' group decided to experiment involving two farmers.

In the same period of time, the State initiated steps to popularize SRI method in paddy cultivation. "The major difference between the Nallathangalpatti farmers' group and the state sponsored SRI programme was that the latter's focus has been SRI with application of chemicals while the Nallathangalpatti farmers confined SRI to organic methods," says K. Suresh Kanna, deputy director of the NGO.

Since the two farmers' fields were already practicing organic farming, with the application of the SRI method they have increased their yield from 22 bags/acre to 32

bags/acre. The successful organic SRI paddy cultivation by this farmers' group has attracted many visitors to their paddy fields. After seeing the cultivation methods and better grain quality, the local agriculture officers suggested the farmers to sell the seeds to the Government seed farm at Kudumiyanmalai as it would help fetch better income. The officials also helped the farmers enter into

How to Make better use of water resources?

Farmers in many parts of the country utilise groundwater to save their crops when monsoon played truant. Groundwater's use for agriculture assumes significance since only 44 % of the net sown area of 140 million hectares is irrigated.

Due to unplanned development, overexploitation of ground water resources has resulted in considerable decline in ground water. About 15 % of the blocks, talukas and mandals in the country are currently in the over exploited zones. Also, the over-use of surface water has resulted in drainage problem in irrigation, causing water logging in some areas. Pollution of river and deterioration in the quality of ground water are other added problems. Excessive use of chemicals and fertilisers and pesticides is another reason for pollution. These issues call for further development of water resources to meet the growing demand, particularly for irrigation, industrial use and drinking. A policy paper of the Ministry has

an agreement with the seed farm. All the registered farmers are supplied with seeds from the farm. The district seed certifying officer also makes periodical visits (at least 3 visits) during the cropping season and offers his technical advice to the farmers. Thus, the linkages have started from 2007 and the farmers started to cultivate paddy exclusively for seed promotion purpose.

How to Make better use of water resources?

estimated the irrigation potential of the country at 140 million hectares. Surface water is seen meeting the requirements of 76 million hectares and ground water the rest.

The Ministry is in constant dialogue with various arms of the Government to harness the available irrigation potential. In fact, the Centre prefers to see irrigation potential beyond the identified 140 million hectares through better water management practices. Given the hydrological features and topographical constraints in the country, this is a challenging task. But surplus flood water is one source that can be utilised to tap the irrigation potential. Artificial recharge of ground water could also help in additional water availability of about 36 billion cubic metres that can be utilised for various purposes included irrigation. Water is seen as the solution to challenges of food security and climate change impact in developing countries. The emerging situation calls for various

methods to save water. One of the ways could be to harvest rain water. Very few States in the country have taken the initiative. The other way could be to construct check dams so that water can not only be preserved but the groundwater can

also be recharged. Recycling water for irrigation and industrial use can be another way. Also, water for irrigation is free in the country and power to draw water is also free in most States.

ICAR to set up National Hybrid Rice Consortium

Indian Council of Agriculture Research (ICAR) is in the process of establishing a National Hybrid Rice Consortium to bring all stakeholders onto a common platform to share research knowledge and put it to use in order to build the hybrid rice ecosystem. "We have appointed a committee to come out with terms of reference for the consortium. We will share them with all the stakeholders and after considering the feedback we will announce the launch of the consortium," Swapan K. Datta, Deputy Director General of ICAR, told the sidelines of the sixth international Hybrid Rice Symposium. In all likelihood, the consortium will be

formed. Private firms will pay a membership (about ₹2.5 lakh to ₹5 lakh). Government universities and research agencies will get membership free of charge.

The stakeholders will bring in their research output to the platform. "Those interested can use them after paying a certain amount. The consortium would maintain a database of the research knowledge and its authors. This is to keep tabs on the unauthorized use of the material or inventions," he said. Initially, the consortium will take care of the hybrid rice. "We are planning to extend this to other crops as well in the future," the ICAR official said.

Punjab returns to goats

Goat farming, once very popular in Punjab, is witnessing a revival after a lull that lasted a decade and a half. This has been due largely to efforts to arrest the reversal by Ludhiana's Guru Angad Dev Veterinary and Animal Sciences University (GADVASU). The demand for both goat meat and milk is high in Punjab, which meets around 70% of the meat demand from other states.

GADVASU's count for goats in

the state, 4.50 lakh till 1998, had fallen to 1.20 lakh by 2008, a drop attributed to shrinking of grazing facilities, before the fresh efforts raised it to 1.92 lakh by the first half of 2012. Besides, 500 applications have been received by the animal husbandry department from various people seeking government help in opening goat farms. The applicants include small, marginal and big farmers.

"The goats started disappearing

but then the Punjab government started promoting their farming and GADVASU too started organizing various programmes related to goat farming." Dr Saini said. To make up for the lost grazing options, a 'stall-fed' technique is being promoted. Feeding goats in the sheds, however, costs more than it would have cost if they had been allowed to graze in the open, Dr Saini said. GADVASU has been organizing fairs and educating farmers in the potential of goat farming.

Farmer Gurbakhsh Singh Dhaliwal of Naphpura village, near Nathana in Bathinda district, shares his experience in goat farming. He said he started around a year ago with 250 goats and currently has around 800 in his farm. "I want to raise the number to 10,000-15,000 goats before I start

Judicious feeding to increase milk production

Dairy farming has provided income and employment generating opportunities to millions of rural families. To obtain a good level of milk production from a milch animal, feeding of balanced ration is must. Many farmers in North India in order to enhance milk production and calving of their dairy livestock are feeding their homemade unscientific self made formulations made of cotton seed, wheat daliya and oil cakes, and wheat bran / rice polish.

It lacks both macro and micro nutrients and not only affects milk yield but also reproductive

selling them for meat as well as providing to other farmers who want to start rearing goats," he said. He said despite the huge demand for goat meat and milk in the state, there has been no financial help from the government and that discourages small farmers from venturing into goat rearing. By his count, starting a small farm requires at least 20 goats 19 females (does) and a male (buck). A good goat costs between ₹7,000 to ₹12,000, which is a huge amount for a small farmer, he said. A farm of 20 goats can, according to some farmers' estimates, earn them between ₹ 1.5 and ₹2 lakh annually after the first one-and-a-half years. An adult female starts delivering kids at the age of 15 or 16 months and does so twice in a 14-month period.

efficiency. For better production and maximizing profit potential, animals should be fed concentrate mixture made from 20-25 parts of oilcakes, 25-35 parts millets /cereals and 10-25 parts cereal by products such as brans / polish, and 5-20 parts dalchuni. This should be fortified with 2 % mineral mixture and 1 % common salt. To economies' the cost of milk production feed the animal 10% fodder along with green grass and concentrate mixture.

One kg concentrate mixture should be fed to heifers/cows during 2-3 months before calving

and also feed one kg additional mixture animals in milking. Feed additional energy rich concentrate mixture up to 35% during winter and 35% protein rich during summers. The quality and quantity of water is very important for maximising production of milk because milk constitutes about 83-87 % of water.

ICRISAT initiative to boost millet yield

Pearl millet is today not only producing greater yields and income for farmers across north-western India, but has improved the productivity of the cultivators. For, packed with healthy nutrients, the cereal can, indeed, sustain hunger for hours longer than other foods. This is largely an upshot of a programme called Harnessing Opportunities for Productivity Enhancement (HOPE), unveiled by the International Crop Research Institute for the Semi-Arid Tropics (Icrisat) and its partners across India and sub-Saharan Africa.

Icrisat's hybrid technology has been greatly instrumental in

Bordeaux mixture to control coconut infestation

Farmers can make their own mixture and use it as and when required for controlling infestation in coconut. Given below are some simple steps for making the mixture. Dissolve one kg of powdered copper sulphate in 50 litres of water in a mud pot or plastic bucket. Dissolve one kg of lime in 50 litres of water (lime solution). Pour the copper sulphate solution into the lime solution

Other salient points that should be kept in mind are: Do not change the feeding / watering regimen / management plan abruptly. Quality and optimal quantity of water to dairy animals is necessary to ensure efficiency of production. Always maintain regular feeding schedule of animals.

ICRISAT initiative to boost millet yield

increasing production of pearl millet from 3.5 million tonnes in the 1950s to 9.5 mt today without a significant increase in land area. "The average national yield of this millet is about one tonne a hectare. Just four states Gujarat, Haryana, Maharashtra and Rajasthan today account for more than 90 % of the pearl millet area of nine million hectares in India," a senior scientist with Icrisat pointed out. Under the HOPE programme, during the last three years, about 13,000 farmer households were provided with 20 tonnes of seeds of 17 improved pearl millet hybrids.

Bordeaux mixture to control coconut infestation

slowly and slowly stir. To detect presence of more copper dip a new steel knife into this solution. If a brownish coat appears on the knife then add more lime solution. Keep repeating the procedure till the brown coat no longer forms on the knife. Presence of free copper is injurious to plants, hence to test for the excess copper if any. After preparing the solution it is advisable for farmers to use it

immediately as it loses its efficacy with lapse of time. However, if mixture is to be preserved for the next days add 50 to 100 g sugar or jaggery into the 100 litre solution.

Drenching of diseased coconut palms with 1% borax solution thrice a year is effective in reducing the intensity of Thanjavur wilt disease. Drench the pits with 1% Bordeaux mixture before planting coconut seedlings. Bordeaux paste consists of the same ingredients as those of Bordeaux mixture but it is in the form of a paste. It is generally made by dissolving 100 gms of copper sulphate and 100 gms of quick lime each in 500 ml of water separately.

Punjab hopes for second white revolution

Witnessing a stagnation in agriculture, Punjab has decided to focus on the dairy industry. Having formulated a modernization plan for its milk plants, the state has already started describing its efforts as the Second White Revolution. The government's efforts to bring helped by the National Bank for Agriculture and Rural Development (NABARD), which has launched a scheme to increase credit for dairy farmers. The two cattle feed producing plants one at Khanna and the other at Gurdaspur will be upgraded too, in order to increase their production from 300 tonnes to 500 tonnes per day.

The state government's modernization plan has taken off

Removal of affected tissues on the coconut stem with a chisel and smearing with warm coal tar or Bordeaux paste over the chiseled portion controls stem bleeding. If the disease is detected when the central shoot withers, application of 10% Bordeaux paste after thorough cleaning and removal of infected plant parts can reduce further spread.

The treated portion has to be covered with a plastic sheet to prevent washing of the paste during rains. Spraying 1% mixture twice a year reduces leaf rot infestation. Spray must be in fine mist form otherwise it will coalesce and trickle down without sticking properly on the nut surface.

Punjab hopes for second white revolution

from Verka milk plant located close to Amritsar. A sum of ₹150 crore will be pumped into the plant over three years, latest technology will be used to produce powdered milk and improve refrigeration process. Besides, the Mohali milk plant is also under the process of enhancing its capacity from 3 lakh litres to 5 lakh litres a day. MILKFED, the agency under which milk plants operate, has roped in the National Dairy Development Board that has provided a loan of ₹40 crore to the Mohali plant for its upgradation.

MILKFED or the Punjab State Cooperative Milk Producers Federation has 3.91 lakh members who supply 11 lakh litres of milk to these plants daily. The plants use

this milk to also produce cheese, khoya, butter, cream, kulfi, milk powder, ghee etc. Says MILKFED Chairman B S Sidhu: "Often, farmers are asked to diversify from the rice-wheat rotation which is costing Punjab its ecology and stagnating the income of farmers. However, the options given for diversification have never been lucrative enough for the farmers to give up sowing paddy and wheat,

which gives them an assured income. Dairy is one sector where even a small farmer stands to gain."

Taking dairy farmers, milk plants, self help groups, research institutes and the private sector on board, NABARD has launched an area-based scheme expecting to increase bank credit five times to the tune of ₹300 crore this year as compared to ₹ 60 crore last year.

Integrated management of Sweet Potato Weevil

Sweet potato weevil causes extensive damage in the field as well as in storage. Small white legless larvae bore tunnels in the tubers and inside vines. The tunnels are infected with fungi and bacteria that cause the tuber to rot. Further, the larva feed on the internal tissues and deposit excreta within the tunnels rendering the tubers unfit for consumption.

About 165 eggs are laid in the hollows of stem/vines or tubers and hatching takes place within 5-7 days. Larval period lasts for 14 days and pupation takes place inside the plant lasting about a week. The entire life cycle is completed in 6-7 weeks and there are 7-8 generations each year. Adult weevil measures 6-8 mm in length and life span is for 2-3 months.

This pest is disseminated from field to field through infested vines and carried over every season by breeding in damaged tubers left in the fields after harvest. The pest is more abundant during monsoon

and remains active throughout the year but population attains peak during March to May.

To manage it better, adopt crop rotation and use resistant varieties. Select weevil free lands for sweet potato cultivation. Use weevil free planting materials of early maturing varieties. Planting of deep rooting varieties and irrigating at 7 days interval control the infestation. Earthing up the plants 50 days after planting reduces the weevil attack. Closing of cracks in the field by periodical hoeing minimizes the weevil infestation.

Mulching with Eupatorium odoratum leaves at rate of 3tonnes per hectare 30 days after planting suppresses the weevil attack. After the harvest the field should be cleaned of trashes. Destruction of infested crop materials and crop residues help to lower pest population. Trap the adult weevils using cross-cut sweet potato pieces of about 6 cm diameter (100g size) kept 5 metres apart during 50 to 80

days after planting at 10 days interval. Use pheromone traps at rate of 5 numbers per acre to attract and kill the male weevils. Dip the

planting slips in 0.05% fenthion solution for 5 to 10 minutes prior to planting.

A new onion variety that brings tears of joy

Seventeen years of painstaking effort in developing and maintaining a new onion variety by a small farmer, Balwan Singh from Haryana, bore fruit when the National Innovation Foundation India (NIF) under the leadership of Prof Anil Gupta recognized this variety at the national level. NIF honored the farmer in its sixth biennial award ceremony at the Rashtrapati Bhavan, New Delhi.

This onion variety named "Balwan Pyaj" has a longer shelf life as compared to other commercial varieties due to its tightly adhered bulb skin. The variety's yield per hectare is over 30 tonnes, and is believed to be resistant to pests and diseases occurring in onion. Its dark red coloured globular shaped bulbs with about 50-60 gm weight, appear more attractive than common ones with firm, bright red coloured, bulbs yielding about 20 tonnes per hectare.

Many years back Mr. Balwan Singh brought some onions from a neighboring village. He observed the bulbs to be large in size, red in colour, and the skin to be tight. Being an experienced farmer, he knew that good quality plants yield good fruits bulbs hence he started grading and breeding this particular onion through selection,

considering parameters such as the plant health, tightly adhered bulb skin, size and well shaped red coloured bulbs. Year after year, he repeated the same process to purify the variety and stabilize its characteristics. After many years of perseverance he could finally develop this variety.

NIF facilitated that the testing of variety at the Vegetable Research Farm, Department of Vegetable Science, Choudhary Charan Singh Haryana Agricultural University, Hisar, Haryana during 2010-11. According to the results, the onion variety showed significantly higher yield (of more than 30 tonnes/ha), bulb weight and bulb diameter, than existing variety named Hisar-2. Other features, which distinguish this variety, are dark green colour of foliage, good thickness of rings, a predominant axis and symmetrical cross section. NIF also provided him an opportunity to display his variety at the Innovations' Exhibition at the President House in 2011. He has been participating in different agricultural exhibitions of agricultural products and winning prizes as well. His work has been covered in local as well as national media.

Mortgaging tamarind trees

While travelling on highways we usually come across huge tamarind trees on the wayside. "But how many of us know that several of these trees are mortgaged to local money lenders in the area. Even for plucking the leaves one needs to obtain permission from the local bigwig of the area," said Dr. P. Alagesan, Mysore Resettlement and Development Agency (Myrada) KVK Programme Coordinator.

In Bargur hills region of North Erode there are a number of tamarind trees that provide a steady income of ₹2,000- ₹3,000 per tree during the season. During harvest time it is the usual practice for farmers and goat rearers to take some advance amount from local money lenders for harvesting the fruits. The moneylenders advance a few thousand rupees with only one condition that the entire amount must be repaid in one lump sum and installments would not be accepted. This way they could keep the tree permanently under mortgage as the person taking the loan amount can never pay it back in full.

This situation prevailed for more than 20 years in the region when Myrada KVK at Erode took up the cause on hearing about this from one of the debtors. The KVK formed people's SHG's or federations called (Sarva Shakti) in the region and

Organic dairy farming picks up in villages

Phidde village in Ferozepur district is witnessing a small

discussed the issue to free the tamarind trees. It was realised that there was a need for financial support to release tamarind trees under mortgage.

Except for bank loans to individual members, all loans were routed through the federation, (locally called as Sanghas) organized by Myrada. The federation advanced loans at ₹10,000 per member at an interest of 18 % per annum to redeem the trees. Over the years, the federation has accessed loans from local commercial banks and other financial sources. Many trees that were under bondage for more than 15-20 years were freed by this approach, which enabled several farmers and SHG members to come out of debts.

Today families that have been able to de-mortgage their tamarind trees are able to earn ₹4,000- ₹5,000 a year by selling 200-250 kg processed tamarind in the market. Further, seeds and rind removed during processing are also sold and the income from these is utilized for paying the labour of 21 man days required for manual processing that costs ₹1,350. So far the federation with Myrada's help has been able to de-mortgage 455 tamarind trees of 30 SHGs groups in 19 villages in Bargur hills.

revolution of sorts in the field of dairy farming. Led by 60-year-old

Gurbinder Singh Kang, youngsters in this and the surrounding villages are into organic dairy farming these days and are earning good returns. Kang, who was a franchise holder of the Subway chain of restaurants in California (US), came back to India around two and a half years ago and set up this venture. His dairy farm has 160 cows kept in the "best conditions" for a good yield.

4N+ is the brand name of the BAJ dairy farm being run by Kang. "4N+ stands for 'Novel, Natural, Nutritious and No-adulteration,'" he explains. Kang says the milk produced at his farm is 100 % pure and the entire process is mechanized, untouched by human hands from milking to packaging

Farmers participatory programme stems coconut tree infestation

Bud rot is a fatal fungal disease affecting coconut trees. Young trees are more susceptible particularly during the monsoon. With this infestation, the spear leaf becomes pale and breaks at the base and hangs down. The tender leaf base and soft tissues of the crown rot into a slimy mass of decayed material emitting foul smell. The rotting progresses downwards, affecting and killing the entire tree.

Lack of awareness about the disease and its management practice is also leading to a disease spread. Individual prevention adoption by few farmers here and there is ineffective as coconut is cultivated almost throughout Kannur region in Kerala. The

and even serving feed to the animals. The fertilization of the animals happens through artificial insemination, and Kang brings semen from Sweden for the purpose.

"The high somatic cells in milk should not be more than 2.5 lakh per litre and after regular quality control this count for my farm's milk is 2.33 lakh per litre now," he claims. Kang has been encouraging youngsters to adopt this profession and till now 90 young boys and girls have started dairy farming. They have formed young farmers' dairy association. Kang helps them get loans and shares technical know-how.

spread of the disease is so severe that 14,350 hectares of coconut growing area is infected by this lethal menace.

"Bud rot is a serious problem throughout Kannur district and prophylactic chemical treatment proves to be effective. "During 2007-08 we have successfully demonstrated this technology in Ayyankunnu Panchayath. However the disease was rampant in other agro-ecological zones also and it was found necessary as per the demands of farmers to conduct demonstrations in different regions to curb the spread of the disease," says Dr. Abdul Kareem, Programme Coordinator, Kerala agricultural University, Kahirangad.

"We planned and implemented a frontline demonstration (FLD) of perforated plastic sachets containing 2-3 grams Mancozeb, two sachets per palm tied on the inner side of the spear leaf, spraying of Bordeaux mixture on affected portion as well as neighboring trees, removal and destruction of affected portions and application of Bordeaux paste for combating the problem for four consecutive years (from 2007-08 to 2010-11)," he explains.

The Krishi Vigyan Kendra at Kannur areas has adopted farmer participatory extension approach, named as Compact Area Group Approach, which is now popularly known by its acronym, CAGA to control bud rot disease. CAGA promoted and sustained group action in a contiguous area for durable adoption of control measures by solving several hurdles.

Integrated disease management focuses not only on application of chemical but also on maintaining health of plant. The health of the plant is mainly attributed to the

Waste degradation by white rot fungus

Composting is a natural process of rotting or decomposition of organic matter by microorganisms under controlled conditions. Raw organic materials such as crop residues, animal wastes, food garbage, some municipal wastes and suitable industrial wastes after composting enhance their suitability for application to soil as

proper nutrition for the plant. During farmers' meetings conducted in the CAGA approach, a lacuna in application of organic matter came up. Recommended dosage of organic manure (25kg/tree) cost more than ₹50 and farmers were not applying the manure. In this context scientists introduced a very cost effective technology of insitu green manuring using cowpea seeds. Only 100 gm of cowpea seeds are required for one coconut basin to be sown at the onset of monsoon to produce 25 kg of biomass within few months. Thus cost of organic manure came down to ₹5 from ₹50. Application of sachets, when clubbed with harvest before monsoon season, reduced the cost of application. Coconut growers throughout the district were made aware about the bud rot management practices through wide publicity. Adoption level of farmers increased to 100% due to the visualised effect of control measures recording very positive results.

a fertilizing resource. In addition to being a source of plant nutrient, compost also improves the physiochemical and biological properties of the soil. As a result of these improvements, the soil becomes more resistant to stresses such as drought, diseases and toxicity.

Composting helps the crop in

improved uptake of plant nutrients and possesses an active nutrient cycling capacity because of vigorous microbial activity indirectly leading to pathogen suppression in soil. These advantages manifest themselves in reduced cropping risks, higher yields and lower outlays on inorganic fertilizers for farmers. In recent years, decomposition of agricultural wastes such as coir pith, banana sheath (dried), sugarcane trash, millets and pulse waste, cotton stubble with white rot fungus (*Pleurotus* sp.) is gaining importance.

These wastes are decomposed with any one of the white rot fungi *P. eous*, *P. platypus*, *P. djamor* or *P. sajorcaju* by layer system. One layer of agricultural waste at 100 kg

is spread uniformly in an area of 4 x 3 m² under shade.

Culture of *P. djamor* at 200 Gms is applied over the substrate. Another 100 kg of substrate is spread over the first layer and urea is applied at rate of one kg to the substrate. This sandwiching is repeated to make a heap of 1,000 kg substrate with such 20 layers. A total of one kg of the fungus and five kg urea is required to decompose 1,000 kg waste. Water is sprinkled twice a day to maintain 50-60% moisture level. The heap is allowed to decompose for a month after which a turning is done. The waste undergoes degradation within 45 days. It has a narrow carbon: nitrogen ratio of 20:1 which can be used as organic manure.

Chawki rearing ensures a smooth transition from hatchlings to silk

Sericulture is part of the cultural heritage of Mysore district. This is because the region's climatic factors aid abundant growth of mulberry trees that are the prime source of food for silkworms. Several farmers in the region who rear silkworms generally purchase 10 day old worms (technically referred to as 2nd moult) from chawki rearing centres (CRCs) and rear them for the next 30 days in their homes.

The word 'chawki' refers to young silk worms reared from hatching to second moult stage. The quality of these worms forms the crux of successful silkworm

rearing. The aim of chawki rearing is to produce good quality healthy worms for the farmers. If the chawki worms are not reared properly, the later stages will result in crop losses. Hence, it is the most crucial period of silkworm rearing. "Despite this fact, there were hardly any CRCs operating in Mysore district till 2006. KVK Mysore introduced three chawki rearing centres in two districts, Mysore and Chamarajanagar, in 2008.

All the three CRCs have completed one year successful operation chawki rearing and supplying the worms to farmers. Two of the three CRS are being run

by farmers' SHGs, whereas the KVK is directly managing one CRC. The three CRCs put together generated 2,520 man days of employment. With this kind of engagement in CRCs, each SHG member is able to earn between ₹1,000 to ₹1,500 per month, which works out to a total of ₹1,26,000 a year," explains Dr.

Chickoo moth management in sapota

Sapota, a native of Mexico, is grown widely in India for its fruit and milky latex which is the source of chicle used to make chewing gum. Of the several pests infesting the tree, the sapota leaf webber (*Nephopteryx eugraphella*) commonly called as chickoo moth is a major one.

As the name indicates, the caterpillars of the moth spin web on the leaves and also feed on tender leaves and fruits throughout the year. Presence of dry leaf clusters and dark brown patches on the leaves are clear symptoms of the infestation and can be easily spotted from a long distance. The infestation leads to withering and drying of tree branches. The pest activity increases with appearance of new shoots and buds. A wide range of sapota varieties are susceptible to this pest.

The moth is grey in colour measuring around one centimeter in length. It lays eggs on leaves and buds of young shoots. Around 350 eggs are laid by a single female. The incubation period is around one week and after hatching the pink

Arin. This apart, the CRC as a seri-enterprise has witnessed innovations like uniform hatching, institutional innovations like participatory chawki management by farmers' SHGs (self help groups), and use of indigenous techniques in temperature and humidity management.

Management

coloured caterpillars start feeding on green leaves by scrapping the chlorophyll content leaving behind a fine network of veins. They also bore inside the flower buds and tender fruits which wither away and drop down. The larvae can damage many fruit buds during its developmental period which lasts from 13 to 60 days according to environmental conditions. Pupal stage is completed in 8 to 29 days. There are eight to nine generations of this pest in a year.

Management

- Remove and destroy all the webbed leaves, shoots, buds and fruits along with larvae.

- Crowded and crossing branches should be pruned.

- Plant resistant varieties such as PKM 1 Sapota

- Erect light trap at one per hectare to monitor the activity of chickoo moth

- Spray two rounds of carbaryl 0.1%, chlorpyriphos 0.05% or quinalphos 0.05% at 20 days interval after new shoot formation and fruit harvest.

Strategies to control thrips in groundnut

In the recent past, thrips menace has drastically increased on groundnut crops grown all over Tamil Nadu. Thrips are small insects and they appear on groundnut crop both in vegetative and flowering stage. Female lays 60-70 single eggs into young tissues of the plant. The nymphal and pupal periods last 5 days each. The adults are pale cream in colour. They are soft bodied and have highly fringed wings.

The thrips desap the plant with their unique feeding apparatus and also transmit the deadly bud necrosis virus that impedes plant growth. Nymphs and adults tear the surface of the leaflets and suck the oozing sap resulting in white patches appearing on the lower surface of the leaves and distortion of young leaflets. The injury results in development of dull yellowish-green patches of the upper leaf surface and brown coloured (necrotic) areas on the lower surface. Severe infestations cause bronzed appearance of leaf with curling and stunting of plants. High temperature with low rainfall favours multiplication and

transmits groundnut bud necrosis virus.

Management methods

- Up-root and destroy severely infected plants. Remove the alternative host plants.
- Mulching would check the damage during the early stage of the plant.
- Setting up of blue sticky traps at rate of 12 per hectare in the field will check the thrips population.
- Apply safe chemical insecticides at recommended doses only if the population crosses 10 thrips per plant.
- Application of ecofriendly pesticides viz., neem oil or pungam oil at 2ml/ha will be very effective.
- Spraying of fipronil 5% SC at 1.500-2.000 ml/ha or thiacloprid 21.7% SC 125ml/ha or thiamethoxam 25% WG at 40g/ha or dimethoate 30 EC at 2 ml per litre of water at 25, 45 and 60 days after sowing will protect the crop from thrips menace.



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The Himachal Pradesh State Co-op. Agriculture & Rural Development Bank Ltd

H.O.: KASUMPTI, SHIMLA-171009

The Bank was established in 1961 to extend long term and medium term loans to farmers for agriculture and allied agriculture activities and Non Farm Sector, presently through 49 branches respectively in the State of Himachal Pradesh.

THE BANK FINANCES FOR:

Farm Mechanisation	:	Tractor, Thresher set and other implements, etc.
Horticulture/Plantation	:	Apple, Stone, Citrus and other plantations, Floriculture.
Animal Husbandry	:	Dairy development, Cattle Sheds, Sheep & Goat rearing Poultry, Sericulture, Fisheries, Mushroom, Piggery, Rabbit rearing etc.
Land Development	:	Land leveling, Land reclamation etc.
Non Farm Sector	:	Small Scale Industries, Cottage Industries including Service Sector, Rural Housing, SRTOs, Rural Godowns, Packing & Grading House etc.
Minor Irrigation	:	Construction/repairs of irrigation well, Tube Well, Deep Tube well, Installation of pumpsets, pipelines, lift irrigation etc.

Bank accepts FD for 1 year and above at following rate for Senior Citizens

1 Year 9.50% 2 Years above 9.25% 0.5% more interest for Senior Citizens.

SALIENT FEATURES

<ol style="list-style-type: none"> Interest payable: Quarterly/half yearly and yearly as per demand. Monthly income schedule is available. TDS is not deducted on maturity of FDs. FD outstanding as on 31-03-2010 is within the own fund limit. 	<ol style="list-style-type: none"> All the loans issued by the Bank are theoretically recoverable since they are secured by registered mortgage of land. Loan against FD to the extent of 75% of FD amount.
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Bank provides 1% p.a. rebate of interest on loans to the regular loanees.

**FOR FURTHER DETAILS PLEASE CONTACT US OR
OUR BRANCHES OF THE BANK IN THE STATE.**

B. M. Nanta (IAS)
Managing Director

Mohar Singh Thakur
Vice Chairman

Sher Singh Chauhan
Chairman





THE HARYANA STATE COOPERATIVE AGRICULTURE AND RURAL DEVELOPMENT BANK LTD.

Sahakarita Bhawan, Bay No. 31-34, Sector - 2, Panchkula

The Haryana State Cooperative Agriculture and Rural Development Bank Ltd., is the specialised institution in the State, which caters to the Long Term credit needs of the farmers for the upliftment of the economic position of the agriculturists and allied fields.

The bank advances Long Term loans to the farmers for the following purposes :-

Scale of finance and periodicity of Major Sectors

Farm Sector

Sr.No.	Name of the Scheme	Period	Scale of finance
1.	Minor Irrigation	9 years	₹ 36,000 to 1,50,000
i.	WCS/UGPL	-do-	90% of the project cost
2.	Farm Mechanisation	5-9 Years	85% of the cost of the Machinery
3.	Purchase of Agriculture Land	10 Years	Upto Rs. 10.00 Lacs
4.	Horticulture/Plantation	5-9 Years	₹ 40,000 to 1,55,000 per Acre
i.	Medicinal & Aromatic Plants	-do-	90% of the project cost
5.	Animal Husbandry	5-7 Years	90% of the project cost
6.	Rural Godowns	Upto 10 Years	75% of the project cost

Non Farm Sector

Sr.No.	Name of the Scheme	Period	Scale of finance
1.	Rural Housing	Upto 10 Years	Upto ₹ 5.00 Lacs
2.	Marriage Palaces	Upto 10 Years	90% of the Project Cost
3.	Community Halls	Upto 10 Years	90% of the Project Cost
4.	Village Cottage Industry	Upto 10 Years	90% of the Project Cost
5.	Public Transport Vehicles	Upto 10 Years	85% of the Project Cost
6.	Rural Educational Infrastructure	Upto 10 Years	90% of the Project Cost
7.	Other SSI Units	Upto 10 Years	90% of the Project Cost

Rate of Interest

The Loans for the purpose of non-farm sector, Rural Housing and Purchase of land are being advanced @ 13.25% p.a. w.e.f. 1.4.2011. All other loans are being advanced @ 12.25% p.a. w.e.f. 1.4.2011 and a rebate of 25% w.e.f. 1.12.2010-31.3.2012 is allowed on all slabs to regular paymasters.

Note:-

For further details, kindly contact The Haryana State Coop. Agri. & Rural Dev. Bank Ltd., Panchkula or the District Co-op. Agri. and Rural Dev. Banks at District level and its branches at Tehsil & Sub-Tehsil level in the State.

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