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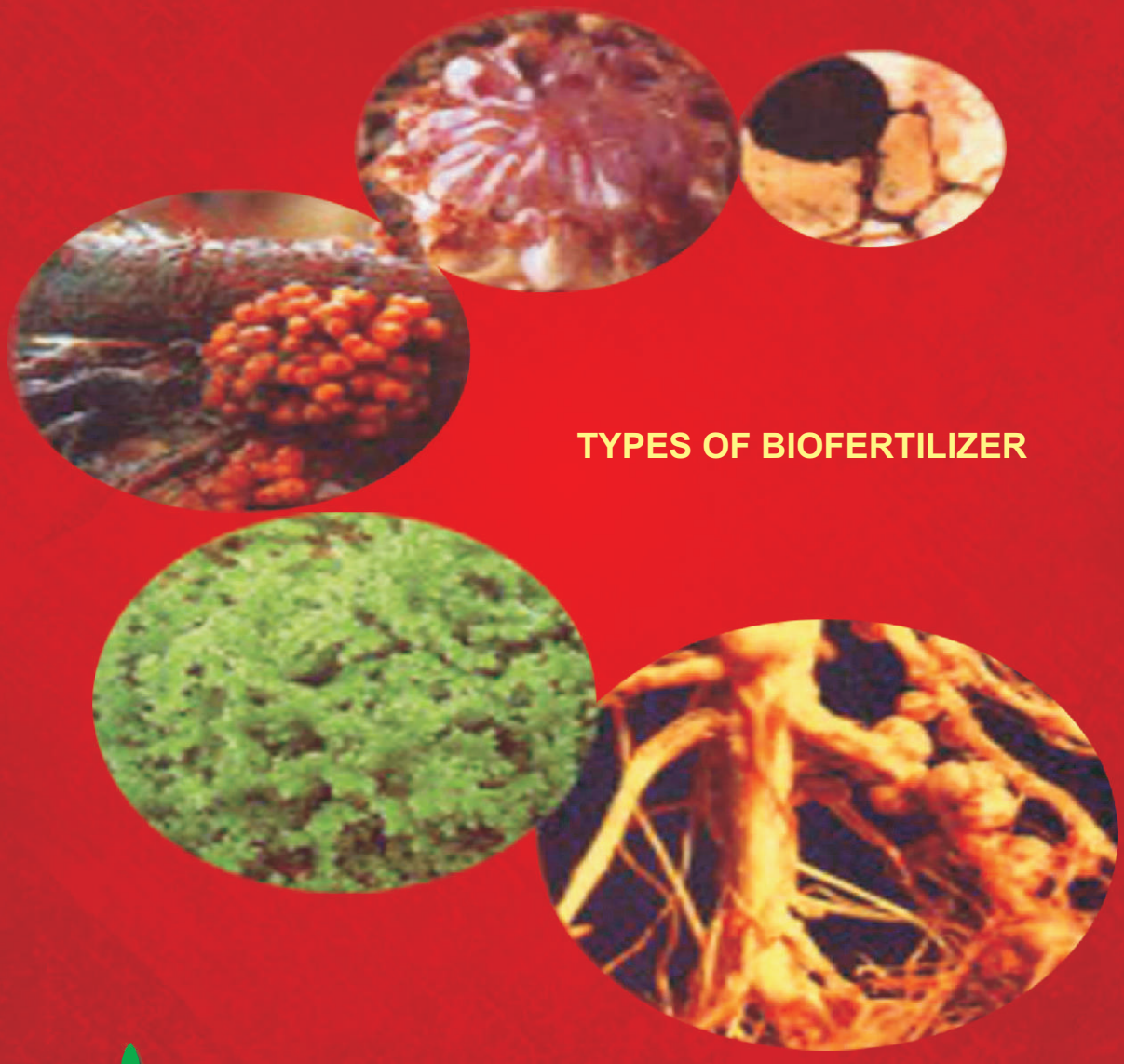

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K. K. RAVINDRAN
Managing Editor

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EDITORIAL

Finance Minister presented in the parliament the union budget for the financial year 2015-16 on 28th February 2015. This year's budget has come on the background of expectation of the economy fully coming out of recession making India fastest growing among larger economies in the world with real GDP growth projected to be 7.4% in 2015-16. In spite of faster growth rate in GDP, the budget recognised major challenges in the areas of agricultural income which is coming increasingly under stress, requirement of massive investments in infrastructure, inability to end stagnation in manufacturing and strain on resources available to the Centre on account of higher devolution in taxes to States and difficulties in maintaining fiscal discipline.

Low productivity as well as weather and market uncertainties are the main factors affecting farm incomes. Stepping up farm productivity is a major challenge. Government in last year's budget announced a number of measures for enhancing agricultural productivity through investments in farm assets and farm technology. The thrust areas in agriculture in this year's budget are irrigation and management of watersheds and opening up countrywide market for agriculture produce.

Following are the major proposals in the budget relating to agriculture and rural credit.

- Focus on soil and water conservation through Paramparagat Krishi Vikas Yojana and Pradhanmantri Gram Sinchai Yojana with the slogan 'Per Drop More Crop'.

- Importance to be given to micro irrigation and watershed development under Pradhan Mantri Krishi Sinchai Yojana with an outlay of ₹5,300 crores which will be augmented by resources being allocated by states.

- Rural Infrastructure Development Fund (RIDF) set up in NABARD from supporting State Govts to build rural infrastructure out of contributions by Banks against their shortfall in agricultural lending, will have a corpus of ₹25,000 crores during 2015-16.

- The Long Term Rural Credit Fund with NABARD initiated with a corpus of ₹5,000 crores last year for promoting capital formation in agriculture

through commercial and cooperative banks will have an increased outlay of ₹15,000 crores this year. The Long Term Rural Credit Fund is expected to help NABARD to increase its allocation to banks for advancing investments credit at substantially reduced interest rate.

- The outlay of Short Term Cooperative Rural Credit Refinance Fund with NABARD which is used for supporting banks for issuing crop loans also has been increased during the current year to ₹45,000 crores.

- The target for agricultural credit for the year 2015-16 has been fixed at ₹8.5 lakh crores.

- The budget proposes to set up a National Agricultural Market with a view to benefit farmers in realising better prices on the one hand and in moderating agricultural prices by removing marketing bottlenecks.

- Establishment of Micro Units Development Refinance Agency (MUDRA) with a corpus of ₹20,000 crores and credit guarantee corpus of ₹3,000 crores for refinancing Micro Finance Institutions in the business of lending to small entities under Pradhan Mantri Mudra Yojana.

- Induction of postal network with 1,54,000 post offices spread across villages all over the country into formal financial system for increasing access of people to financial services.

The budget however has come in for criticism by bodies representing farmers for ignoring suggestions to ensure a proper procurement policy and hike in the minimum support price. It has also been pointed out that there is hardly any increase in allocation to the sector over previous year's budget and the share of agriculture to total budget outlay is declining year after year. The allocation of ₹17,788 crores to agriculture in 2013-14 came down to ₹11,531 crores in 2014-15 out of a total outlay of ₹16.81 lakhs and in this year's budget stands at ₹11,657 crores out of ₹17.77 lakhs total outlay. The allocation to irrigation this year which is critical in improving productivity and has been proclaimed as a thrust area is only ₹772 crores as against ₹1797 crores in the previous year, out of which 40% would go for flood management. With such meagre allocation for agriculture which itself is declining over time, not much impact can be expected from the schemes announced in the budget to make agriculture profitable.

K. K. Ravindran
Managing Editor

Role of cooperatives in financial inclusion

Mr. Subhash Gupta*
Mr. Yogesh Sharma*

Background

Inclusive growth is one of the key developmental concerns today. The effects of economic development have not percolated to the poor and downtrodden sections of the society, as a result of which the poverty level in India has not come down. The cooperative credit institutions in the country are playing an important role in inclusive growth, as they provide credit to the poor at considerably low rates of interest, so as to save them from the clutches of the money-lenders. The tribal cooperatives in the country have also helped in inclusive growth as they have effectively marketed their produce through cooperatives.

Cooperatives are an important agency for the growth of tribals. The self-help groups [SHGs] based on Cooperative Principles are playing an important role in inclusive growth. The role of poverty-eradication initiatives in rural areas has been very significant in removing the economic imbalances, due to which growth has become inclusive. The Government too recognizes the importance of cooperatives for inclusive growth, as it is aware of the limitations of commercial form of enterprises in this regard.

Reach of credit institutions

As part of economic growth it was envisaged that there would be three sectors in the national economy e.g., Private, Public and Cooperatives. However, it was the cooperative sector which would combine the best features of private and public sectors and provide a sense of direction, plan and value to the economy as a whole.

India is a country with a population of more than 1.2 billion, of which around 800 million reside in a little over 600,000 villages with little or no access to banking or other credit institutions. Since agriculture is primarily a seasonal enterprise dependent on the vagaries of weather, the farmers are not assured of timely and reasonable production of crops. Since their income is sporadic which combined with a lack of credit facilities lead them to turn to the spurious moneylenders for buying agri-inputs for the next season, in many cases, the farmers suicides are regularly reported by the media. The cooperatives must now reorient themselves for

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including such farmers as members of Primary Agricultural Credit Society [PACS] and include "financial inclusion" as one of their mottos.

Conventionally it has been observed that the poor have almost negligible access to banking facilities as they are considered "not bankable" due to their low--levels of income and assets. However, experiments around the world to provide credit and insurance access to poor have proved otherwise. On the contrary such access has provided ample livelihood opportunities and empowered the poor to take charge of their lives with dignity. Consequently, this aids social growth and provides sustenance growth of the economy.

Need for expanding financial inclusion

Generally, we associate the term "Financial Inclusion" with our initiatives of bringing poor people in the rural areas into the banking fold; however, we have to realize that there are still a large number of people in the urban areas who are financially excluded. They need to avail various types of banking services, especially the savings and money remittance services. This section of financially excluded people in the urban areas provides a good opportunity for the urban cooperative banks to step in and fill this void. This is a challenge and an opportunity for these banks and at the same time; if they are unable to grasp this excellent opportunity; new institutions will come up to fill this void and UCBs may lose some good business. [for an overview see Annexure-I].

Indian banking system

Indian banking system is dominated by commercial banks that comprise of public sector commercial banks and private sector commercial banks. The PSBs or public sector commercial banks account for more than 70% of the share of banking business. Cooperative banks that account for less than 8% [urban and rural cooperative banks put together] share. Commercial banks have nearly 100,000 branches while all cooperative banks put together account for around 16,000 branches [UCBs have about 8000 branches].

New initiatives in the sector

Notwithstanding the abovementioned combined reach of commercial banks and cooperative banks, nearly 50% of the country's population does not have bank accounts. Hence there is great stress on 'Financial Inclusion'. Recent launch of Pradhan Mantri Jan Dhan Yojana [Peoples' Wealth Programme] is an important step in this direction. [see Annexure-II].

There has been a growing realisation in Government and RBI that it is not possible to achieve universal financial inclusion just by doing more of what we have been

doing i.e., opening more and more branches of existing commercial banks. Such exercise is also not seen to be viable when it comes to covering people of very small means and the poor. It was a great challenge, till, say; ten years back to reach out to all the people. But with great developments in the ICT in the last 5-7 years, there has been dramatic change and great possibilities have opened up in reaching out to all sections of population even in the remotest areas in respect of financial inclusion through technology. Growth and diversification of economy, both in form and content, is necessitating consideration of formation of different types of banking entities apart from the universal banks and cooperative banks that we have today.

In fact the Government and the Regulator are clearly not very optimistic about cooperative banks making substantial contribution on financial inclusion in absolute terms. With commercial banks having to largely meet the requirements of other segments of economy, besides doing bulk of financial inclusion and priority sector lending, they have decided to permit the "Small Banks" to be promoted with an intent that they will play a major role in mopping up savings of those who do not have bank accounts at present and in providing banking services to the unorganised sector.

Urgent needs of the sector

It is now for the cooperative banking sector, and in particular, the urban cooperative banking sector to consider as to how they should react to the developments.

As a sector which is passionate about its survival and is aspiring to grow, will have to be very alive to the changes in the economic environment it is operating in, and the challenges it is facing or anticipating to face. It will have to try to work with authorities to honestly address the concerns of the Regulator, including legislative bottlenecks.

The concern in some quarters is also about the cooperative banks being 'cooperative' only in terms requirements of legislation and not in terms of real spirit behind functioning of cooperatives. A study on cooperativeness of urban cooperative banks has thrown up important findings which should initiate some meaningful introspective discussions on future of urban cooperative banks in the changing financial sector scenario.

Annexure-I
FINANCIAL INCLUSION-AN OVERVIEW

Introduction

Objective: The main objective of Financial Inclusion is to extend financial services to the large unserved [excluded] population of the Country to unlock its growth

potential for inclusive growth i.e., Saving facilities; Easy credit facilities; Remittance and payment services for direct benefit transfers; Insurance and Health Care facilities; and Financial Advisory Services.

- "Financial Inclusion" is considered to be a subset of the concept of "inclusive growth."
- "Inclusive Growth" itself is an expression of recent origin, say not more than 25 years.
- "Equitable distribution" of gains of "economic progress" was earlier mantra.
- Difference is that in the earlier concept of "equitable distribution" emphasis was on "distribution" of the "fruits of growth", in the philosophy of "inclusive growth", it is the participation of people in "growth process" in an active manner.
- It is now considered that "financial inclusion" is a catalyst for "inclusive growth" or it is a vehicle of inclusive growth.
- There are various hues of explaining the term "financial inclusion". Generally it is considered that "excluded" population consists of sections of disadvantaged and low income segments of society and "financial inclusion" is delivery of financial services" at an affordable cost to this excluded section of society. The term "financial services" will include access to savings facilities and bank accounts, easy credit, remittance and payment services, insurance and healthcare, and financial advisory services.
- "Excluded" population generally consists of underprivileged sections in rural and urban areas typically, subsistence/marginal farmers, small vendors, agricultural and urban labourers, unemployed, women old people, physically challenged, etc. We may also explain them to be vast majority of self-employed in unorganised sector and urban slum-dwellers.
- The realisation of the importance of banking and insurance services and their role in inclusive growth was main reason behind nationalisation of banks and insurance services. Concept of "poor are bankable and insurable" in the context of the then existing banking and insurance laws and practices was alien and not readily acceptable.
- What followed nationalisation of banks is known to all. In an explosive growth of banks' branches on the scale never attributed before, the per-branch coverage of population came down from 63,000 in 1969, at the time of nationalisation to just 14,000

in 2010 and 12,000 in 2012-13. It is around 16,000 in rural areas, and 10,000 in urban areas. The number of branches has grown from 8260 in 1969 [1860 rural] to over 11,000. Despite this massive and sustained exercise for 45 years, with public sector banks accounting for 80% of the banking sector resources, there is a near panic in the country at the realisation that we have not been able to provide even banking accounts to over half of our population and 60% house hold converted.

- In respect of insurance service, it is very dismal with life insurance penetration being 4% and non-life being less than 1%. Per-capita spending on premia is ₹2000 for life and ₹300 for non-life as against global average of ₹18,000 and ₹13,000 respectively. Similar is the story on investment in mutual funds, equity, etc.
- The extent of unfinished task can be seen from the fact that only 6% of India's 6,00,000 villages have bank branches, 38,000 branches of banks, which is 37% of total branches network, are in rural areas.
- 35% of people with annual earnings of ₹50,000 or less have bank accounts in urban India and for rural India it is at 26%. As against these statistics with regard to penetration of "financial services", the performance of communication devices and connectivity has been phenomenal in recent years. The number of mobile users is of the order of 900 million. Strangely, it is estimated that about 300 million out of them do not have bank accounts. It looks as though people believe that they can do without bank accounts but cannot carry on without mobiles.
- Reason for this is easy to find. With average per capita income of ₹36,000 at 2004-05 prices and ₹66,000 at 2012-13 prices with over 70% of population being in the unorganised sector, there has been little need for banking services and for that reason, half the population does not appear to feel urgent necessity to have bank accounts. The group of informal financial intermediaries like private moneylenders, committees etc. meet their needs. Formal financial setups have not been able to structure their products or tune their procedures to make this segment of population feel comfortable and accepted i.e. either people are not willing to open Bank accounts or Banks are not willing to accommodate them.
- Till recently, technology has been a major limiting factor in banks reaching out to the segment of population that is

"financially excluded". Branch banking had its severe limitations in respect of penetration and was not economically very viable proposition. The thrust to the idea of "poor are bankable" needed a breakthrough in technology to actualise it.

- Today we have centralised banking software that permits "everywhere banking" and "anytime banking". We have electronic funds transfer systems that ensure "real-time money transfers" in the form of RTGS and NEFT managed by National Payment Corporation of India.

Issues confronting the system

1. Is the structure of Indian financial and banking system with predominance of commercial banks suited to meet the challenges of "Financial Inclusion"? If the commercial banks are to be the main vehicles of the process, what should be modifications and what should be the road map?
2. What is the banking structure in countries that have "good financial record"? Past experience has shown that "top-down" approach wherein the commercial banks are given targets to achieve do not achieve desired results, particularly in quality.

The Rangarajan Committee [2004] on Financial Inclusion had made important recommendations form the basis of the thrust in the area by RBI.

The Reserve Bank of India [RBI] has initiated steps for opening of accounts, meeting small credit needs, providing access to payment systems, and providing remittance facilities as follows.

I. No-frills account with zero-minimum balance,
II. Introduction of General Purpose Credit Card [GPCC] limit up to ₹25,000 and allowing small overdraft in savings bank account;
III. Simpler Know Your Customer [KYC] norms for savings accounts with less than ₹50,000 balance and loans up to ₹100,000;.
[A] Use of Information Technology. All branches of banks becoming CBS enabled: Providing smart-cards for opening bank accounts with biometric identification helping customers to get banking services nearer their doorsteps, and,
[B] Linking to mobile handheld electronic devices for banking transactions.
IV. Encouraging EBT [Electronic Benefit Transfers] for the account holders, in collaboration with state governments.
V. Setting up of financial literacy-cum-credit card counselling centres on a pilot basis for financial balancing and giving advice to people.

VI. Enhancing of outreach by enhancing the BF and BS models.

VII. Dispersing of No Dues Certificate [NDC] for small loans up to ₹50,000.

VIII. SLBC to monitor the goal of providing one banking outlet at least for all villages with 2000 population or more by 31st March 2015 at least through usage of BC and BF models.

The objective of Financial Inclusion is to extend financial services to the large hitherto unserved population of the country to unlock its growth potential. In addition, it strives towards a more inclusive growth by making financing available to the poor in particular.

According to the RBI latest statistics between 2010-2013, banks have set up nearly 268,000 outlets in villages as on March 2013 against 67,694 banking outlets in March 2010. They have opened about 7400 brick and mortar branches in rural centres during this period. Nearly 109 million basic savings bank accounts have been added, taking the total of 182 million.

Indian banks started using the services of business correspondents with electronic hand hold devices to improve financial penetration. Following this initiative, the share of information and communication technology [ICT] based accounts to all new basic accounts has increased from 25% in March 2010 to 45% in March 2013.

Annexure-II
PRADHAN MANTRI JAN DHAN YOJANA [PMJDY]

Highlights of the Scheme

1. The Prime Minister announced "Pradhan Mantri Jan-Dhan Yojana" on August 15, 2014. Under this scheme, anyone can easily open a bank account and avail the following benefits.
   -Security of money along with interest.
   -Withdrawal of money from any ATM with a debit card.
   -Accidental insurance cover of ₹1 lakh.
   -No minimum balance required.
   -Easy transfer of money across India
   -Beneficiaries of government schemes will get Direct Benefit Transfer
   -After satisfactory operation of the account for 6 months, an overdraft facility of ₹5000 will be permitted, and
   -Pension, insurance, etc. linked to PMJDY
2. Hon'ble Prime Minister launched the National Mission on Financial Inclusion named as Pradhan Mantri Jan Dhan Yojana [PMJDY] on 28th August, 2014.
3. It is Financial Inclusion scheme where BCs [Bank Mitras] will be

setup within 5 km of every habitation both Rural and Urban areas.

4. Each account will be bundled with Rupay Card issued by NPCI with ₹1 lakh Personal Accidental Cover and after operation 6 months of account ₹30000/- Life Insurance Cover will be given by LIC.
5. Documents required to open a bank account

If you have an Aadhaar Card/Aadhaar Number, no other document is required. If your address has changed, then a self-certification of your current address is required.

If you don't have an Aadhaar Card, then bring any one of these; Voter ID Card, Ration Card, Driving License, Letter from a recognized Pubic Authority or Public Servant or Sarpanch. Otherwise, any one of these as identity Card of any Accredited Institution, Job Card issued by NREGA and anyone of these [as address proof]; Electricity or Telephone Bill, Birth or Marriage Certificate.

6. The Scheme will be implemented in two phases.
   PhaseI from 15th August 2014 to 14th August 2015

(i) Universal access to banking facilities for all households across the country through a bank branch or a fixed point Business Correspondent [BC] within a reasonable distance.

(ii) To cover all households with at least one. Basic Banking Account with RuPay Debit Card having inbuilt accident insurance cover of ₹1 lakh. Further an overdraft facility up to ₹5000 will also be permitted to Aadhaar-enabled accounts after satisfactory operation in the account for 6 months.

(iii) Financial literacy programme which aims to take financial literacy up to village level. RuPay Kisan Card is also proposed to be covered under the plan.

PhaseII 15th August 2015 to 14th August, 2018

(i) Providing microinsurance to the people.

(ii) Unorganised sector Pension schemes like Swavalamban through the Business Correspondent

7. The major shift in this programme is that households are being targeted instead of villages as targeted earlier. Moreover both rural and urban areas are being covered this time as against only areas targeted earlier. The present plan pursues digital financial inclusion with special emphasis on monitoring a Mission headed by the Finance Minister.
8. During the launch of the scheme;
   -76 functions across the country will be attended by Chief Ministers and Central Ministers;
   -7.5 crore households to be provided at least one account under this Yojana;
   -60,000 camps to be organized by PSU Banks in rural and urban areas.

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 & Purpose	Period	Scale of finance
1.	Minor Irrigation	9 Years	₹75,000 to ₹4,00,000
2.	Land Development	-do-	90% of the actual cost
3.	Farm Mechanisation	5-9 Years	85% of the actual cost
4.	Purchase of Agriculture Land	10 Years	Upto ₹12.00 Lacs
5.	Horticulture/Farm Forestry	5-10 Years	₹25,000 to ₹3,55,000 per Hectare
	Medicinal & Aromatic Plants	-do-	90% of the actual cost
6.	Animal Husbandary	5-7 Years	90% of the actual cost
7.	Construction of Rural Godowns	Upto 9 Years	90% of the actual cost

Non Farm Sector

Sr.No.	Name of the Scheme/Purpose	Period	Scale of finance
1.	Rural Housing	Upto 10 years	Upto ₹6.00 lacs
2.	Marriage Palaces	Upto 10 years	90% of the actual Cost
3.	Community Halls	Upto 10 years	90% of the actual Cost
4.	Village Cottage Industry	Upto 10 years	90% of the actual Cost
5.	Public Transport Vehicles	Upto 5 years	85% of the actual Cost
6.	Rural Educational Infrastructure	Upto 10 years	90% of the actual Cost
7.	Other SSI units	Upto 10 years	90% of the actual Cost

Rate of Interest

The rate of interest to be charged from the ultimate borrowers has been reduced to 13.5% P.A. w.e.f. 9.6.2014 for all type of loans advanced by the DPCARDBs in the state of Haryana.

Note:-

For further details, kindly contact The Haryana State Coop. Agri. & Rural Dev. Bank Ltd., Panchkula or the District Coop. Agri and Rural Dev. Banks at District level and its branches at Tehsil & Sub-Tehsil level in the State.

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Need of Core Banking System in Cooperative Banks

Dr. I. A. Khan*

Information Technology in Banking

Information Technology (IT) has a major role to play in all facets of Indian agriculture. In addition to facilitating farmers in improving the efficiency and Productivity of agriculture and allied activities, the potential of IT lies in bringing about an overall qualitative improvement in life by providing timely and quality information inputs for decision making. The cooperative banking has important role with farmers, small vendors and other small customers for their agriculture loan & consumer durables. The personnel who work for the welfare of Indian farmers, such as extension workers, do not have access to latest information which hinders their ability to serve the farming community effectively. Induction of IT as a strategic tool for banking development and welfare of rural India requires the necessary IT infrastructure in place. The rapid changes and downward trend in prices in various components of IT makes it feasible to target at a large scale IT penetration into rural banking. Here, it is our responsibility to focuses on the scope for e-powering people who live in rural India as well as those who work for their welfare. Core banking in cooperative banking (District Cooperative Bank & Urban Cooperative Bank) is essential for the development of agriculture & cooperative both inclusively in competitive environment.

Core banking solutions are new jargon frequently used in banking circles, the advancement in technology, especially internet and information technology has led to new ways of doing business in banking. These technologies have cut down time, working simultaneously on different issues and increasing efficiency. Here, computer software is developed to perform Core operations of banking, like recording of transactions, passbook maintenance, and interest calculations on loans and deposits solutions, customer records, balance of payments and withdrawals. This software is installed at different branches of bank and then interconnected by means of communication like telephones, satellite, internet etc. It allows the user (Customer) to operate accounts from any branch if it has installed Core banking solutions. The new platform has changed the way where the banks had worked in earlier environment.

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Many banks treat the retail customers as their core banking customers and have a separate line of business to manage small businesses. Larger businesses are managed via the corporate banking division of the institution. Core banking basically is depositing and lending of money. Nowadays, urban & district cooperative banks are trying to use core banking applications to support their operations, where CORE stands for C- Centralized, O- Online, R- Real-time, E- Environment.

Core banking module

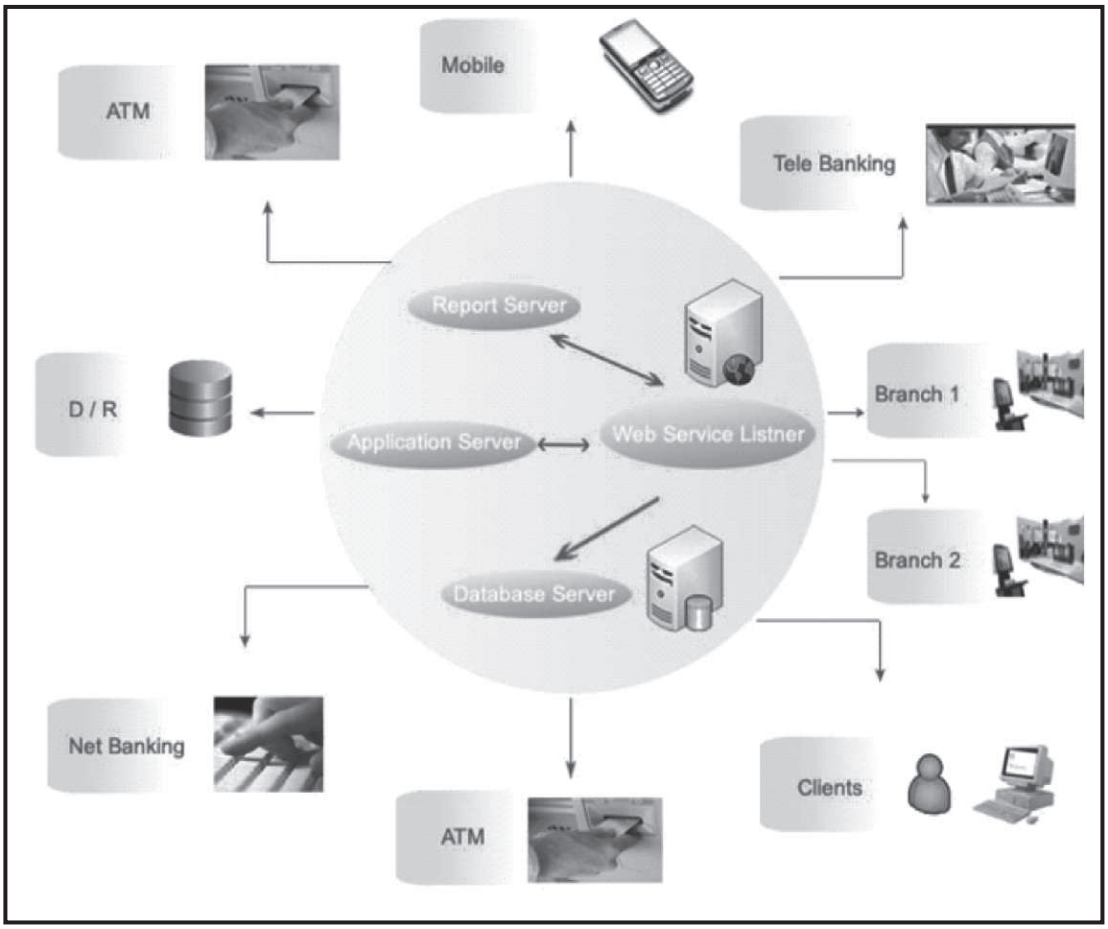
This basically means that all the banks branches access applications from centralized data centres, were deposits made are reflected immediately on the banks servers and the customer can withdraw the deposited money from any of the bank's branches throughout the India. These applications now also have the capability to address the needs of farmers and agriculture based customers "providing a comprehensive banking solution".

Technology of CBS for cooperative banking

Technologically, it is possible to develop suitable systems to cater to the information needs of Indian farmer. User friendly systems, particularly with content in local languages, can generate interest in the farmers and others working at the grassroots. It is possible to create dedicated networks to harness the power of Internet to make these services available to all parts of the country. The platform where communication technology and information technology are merged to suit core needs of banking is known as Core banking solutions. Core Banking Solution (CBS) is networking of branches, which enables customers to operate their accounts, and avail banking services from any branch of the Bank on CBS network, regardless of where he maintains his account. The account holder is not the customer of only a single branch, now the customer becomes the Bank's account holder / customer. Thus CBS is a step towards enhancing customer convenience through anywhere and anytime banking.

Architecture of core banking

For quick results, it may be useful to get the applications outsourced to software companies in India. This will facilitate quick deployment of applications and provide boost to the software industry in India. In order to avoid duplication of efforts, it may be useful to consider promoting a coordinating agency which will have an advisory role to play in evolving standard interface for users, broad design and monitoring of the progress.



Software and hardware requirements as follows:

- MS Windows 8.
- Microsoft SQL Server Enterpriseedition or MS Access as CBS temporary database.
- Hardware required to run the software applications at least.
  * Server with minimum 1GB RAM
  * 40 GB Hard Disk space
- DBC Client Interface with core banking Data base.
- CB-Secure Server & SMPP Bulk SMS Gateway connection provided by mobile service provider or ISP
  - Short Code & SMSC Fix IP address
  - SMSC Fix IP Port for connection
  - SMSC User name and Password for connection

Core banking solutions are banking applications on a platform enabling a phased, strategic approach that is intended to allow banks to improve operations, reduce costs and be prepared for growth. Implementing a modular component based enterprise solution facilitates integration with

a bank's existing technologies. Many banks implement custom applications for Core banking as per size of the bank and their account holders. Some examples of Core banking software & its products include viz. Finacle, FinOne, Flexcube, Easy Banks, Alnova, TCS BaNCS, Bank mate, etc.

Use of core banking in cooperative bank

The basic use of Core Banking includes the immediate services of farmers and customers to help their financial needs. Core banking systems are specialized for a particular type of banking, which is not so popular in cooperative banks. If, cooperative banks will not adopt the current technological development of IT, the whole cooperatives will suffer more in all aspect and the credibility of cooperative will also suffer allot. Therefore, there is immense need for Core banking systems in cooperative banks and takes benefit of it to develop cooperative banking with the help of core banking solution modules.

(a) Benefits to farmers

Core banking is a banking services provided by a group of networked bank branches, where a customers may access their bank account and perform basic transactions from any of the member branch offices. Normal Core banking functions will include Deposit accounts, Agriculture inputs Loans, Mortgages and Payments. Core banking has numerous jobs to facilitate their customer for the benefits of rural people. Now, many cooperative banks are in a position to give services like other nationalized banks including agriculture based loans available across multiple channels like ATM's, Net banking, Debit card, Credit Card, any time banking, anywhere banking and multi branch banking. It is important to know about the cooperative banking and its urgent need of quick and efficient operations of CBS.

Core banking solution in cooperative banks can help farmers in many ways as deposit, loan and credit processing capabilities, Making and servicing Loans, Easy Opening new Accounts, Processing Cash Deposits and Withdrawals, Processing Payments and Cheques, quick & easy calculating Interest, etc.

(b) Benefits to banks

Core banking solution helps also to the banks simultaneously particularly for their Management Information System (MIS), Calculating Interest, Customer Relationship Management (CRM) activities, Managing Customer Accounts, Establishing criteria for Minimum Balances, Number of Withdrawals allowed and so on, Establishing Interest Rates, Maintaining Records for all the Bank's Transactions on immediate basis for bank benefits. There are some more big benefits to Banks:

- Centralized setting & maintaining of product, interest, charges

- Centralized application of Interest, SI and charges
- Centralized Customer mgmt. (Opening, stmt. of A/c, unified view)
- Centralized inward / outward clearing mgmt.
- Centralized System Admin. (day begin / day end, Backup, DR, User mgmt., etc…)
- Centralized MIS and regulatory reporting
- Centralized Loans mgmt. (sanction, disburse, collaterals and track)
- Centralized recovery management.
- Centralized Audit.
- Centralized Reconciliation: Inter branch, Interbank, Nostro, 3rd party payment settlements.

Constraints of CBS in Rural Area Banks

Rural banking is always a challenging task and if technological modernization can take place easily then banking will be more easy and effective. Here, some of the major constraints delaying the spread of technological / e-revolution to rural India are as below:

- **User friendliness:** The success of this strategy depends on the ease with which rural population can use the content. This will require intuitive graphics based presentation. Touch screen kiosks are required to be set up on every PACS to encourage greater participation.
- **Haphazard development:** It is observed that some initiatives have already been made to provide IT based services to rural community. However, duplication of efforts is witnessed as most of the services revolve around limited subjects in banking.
- **Local languages:** Regional language fonts and mechanisms for synchronization of the content provide a challenge that needs to be met with careful planning.
- **Power Supply:** In most of the rural India, power supply is not available for long hours. This will reduce the usefulness of the intended services of Core banking in cooperative banks.
- **Connectivity:** Despite the phenomenal progress made in the recent years, the connectivity to rural areas still requires to be improved. Reliable connectivity is a prerequisite for a successful penetration of IT into rural areas.
- **Bandwidth:** Even in areas where telephone and other communication services exist, the available bandwidth is a major constraint. Since internet based rural services require substantial use of graphics, low bandwidth is one of the major limitations in providing effective e-services to farmers.
-

Conclusion

The Indian farmer and those who are working for their welfare need to be computer literate with e-powered to face the emerging scenario of complete or partial technological upgradation. The quality of rural life can also be improved by quality information inputs which provide better decision making abilities. The potential of computer technology lies in bringing about an overall qualitative improvement in the society by providing timely and quality information inputs for decision making. As cooperative and cooperative bank has important role with farmers, small vendors and other small customers for their agriculture loan & consumer durables.

Induction of IT as a strategic tool for banking development and welfare of rural India requires the necessary IT infrastructure in place. Here, I would say there is immense scope and also necessity of core banking system in cooperative banks for rural development. Core banking in cooperative banking (District Cooperative Bank & Urban Cooperative Bank) is essential for the development of agriculture & cooperative both inclusively in the competitive environment. Now Information Technology will play a major role in facilitating the process of transformation of rural India to meet challenges and competition. The rapid change in the field of information technology makes it possible to develop and disseminate required electronic services to rural India.

In current scenario, without core banking system / solution, no banking system will work for farmers accurately, that is why Reserve Bank of India (RBI) also making pressure on the cooperative banks to implement core banking system immediately. Every bank has potential to perform in sprit of service to the nation, but without technology adoption, it is not possible to achieve the target. District Cooperative banks and Urban cooperative banks are also the part of the society to facilitate their customers with good facilities and services.

Knowing core banking system and implementing it is both separate challenges in cooperative banks. Therefore, it required to give computer training to all the officials of bank working for the people in process of installation of core banking solution. So, the officers & employees of bank can give better services and results to the farmers and customers. Without above mentioned approach, the process of computerization and implementation of core banking system will not able to give fruitful results and the success will become partial failure.

THE GUJARAT STATE COOP. AGRICULTURE AND RURAL DEVELOPMENT BANK LTD.

489, ASHRAM ROAD, AHMEDABAD 380 009.
Email: gscardb@gmail.com www.khetibank.org

KHETI BANK Phone: (079) 26585365-70-71 Fax: (079) 26581282 / 8269

The Bank was established in 1951 to extend long term and medium term loans to farmers for agriculture and allied agricultural activities through 176 branches and 17 district offices located at each taluka places and district places respectively in the State of Gujarat.

THE BANK FINANCES FOR :

Farm Mechanisation: Tractor, Thresher set and other implements etc.
Horticulture / Plantation: Mango, Chickoo Plantation etc.
Land Development : Land levelling, Land reclamation etc.
Non Farm Sector: Small scale industries, Cottage industries including service sector, Rural housing, SRTOs, Rural godowns, APMCs, Cold storage, Consumer loan, Gold Loan etc.
Minor Irrigation: Construction/repair Loan of irrigation well, Shallow tube well, Deep tube well, Installation of pumpsets, Pipelines, Lift irrigation, Drip irrigation, Check dams, Sprinkler irrigation etc.
Kissan 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.
Rural Housing: Construction of new houses, repairing and renovation of old houses.
Animal Husbandry : Dairy development, Cattle rearing, Cattle sheds, Bullock cart, Sheep & Goat rearing, Poultry, Sericulture, Fisheries etc.

Financial Details of the Bank (₹ in Crores)

Sr. No.	Details	31.03.2012	31.03.2013
1	Owned Funds	477.03	511.94
2	Loans Disbursed	178.62	190.09
3	Fixed Deposit Outstanding	152.14	205.59
4	Profit	37.25	37.52
5	Dividend	12%	12%

Bank accepts FD at following rate of interest.

1 year & 2 year 9.25% p. a 3 years and above 9.50% p. a.

Bank accepts Thrif Deposits at 5% - 0.5% additional interest for senior citizen.

Salient Features

1. Interest payable: Quarterly/half yearly and yearly as per demand
2. Monthly Income Scheme is available
3. FD outstanding is within the own fund limit.
4. 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 secured.
5. Loan against FD to the extent of 75% of FD is available.
6. TDS is not deducted on maturity of FDs.

DIVIDEND ON SHARE IS REGULARLY PAID TO SHARE HOLDERS.
FOR FURTHER DETAILS, PLEASE CONTACT US OR THE BRANCHES OF OUR BANK IN THE STATE.

Shri Dhirendra Kumar B. Chaudhari Chairman
Shri Govabhai H. Rabari Vice Chairman
Shri D. B. Trivedi Managing Director

जैव उर्वरकों / जीवाणु खाद का फसल उत्पादन में उपयोग एवं उनके लाभ

आज कृषि उत्पादन को लगातार बढ़ाना कृषि वैज्ञानिकों के सामने सबसे बड़ी चुनौती है। सघन खेती से मृदा में पोषक तत्व धीरे-धीरे कम होते जा रहे हैं। इस कमी को रासायनिक उर्वरकों के प्रयोग से पूरा किया जाता है। अधिकांश किसान संतृप्त मात्रा में रासायनिक खाद के उपयोग के बावजूद इष्टतम उत्पादन लेने से वंचित हैं। अतः रासायनिक उर्वरकों के प्रयोग से होने वाला लाभ घटता जा रहा है। साथ ही मृदा स्वास्थ्य पर भी विपरीत असर दिखाई पड़ रहा है, जिससे देश में स्थाई खेती हेतु खतरा पैदा हो रहा है। फसल उत्पादन में पोषक तत्वों का महत्वपूर्ण स्थान है, इनकी आपूर्ति के लिए रासायनिक उर्वरक, देसी खाद, जीवाणु खाद, कम्पोस्ट आदि का उपयोग मुख्य रूप से किया जाता है। उर्वरकों की बढ़ती कीमतें, माँग एवं पूर्ति के बीच का अंतर, छोटे व सीमान्त किसानों की सीमित क्रय शक्ति एवं ऊर्जा की कमी जैसे महत्वपूर्ण पहलुओं के कारण आवश्यक है कि पादप पोषण के कुछ ऐसे सार्थक एवं सस्ते वैकल्पिक स्त्रोत हों, जो सस्ता होने के साथ-साथ पर्यावरण प्रदूषक भी न हो, ऐसे में जैव उर्वरकों को नकारा नहीं जा सकता है।

आज पूरे विश्व में जैविक खेती को रासायनिक खेती का विकल्प माना जा रहा है। साठ के दशक में हरित क्रांति के फलस्वरूप अन्न उत्पादन से देश आत्मनिर्भर हुआ परन्तु इसके दुष्परिणाम भी सामने आये जैसे मृदा में कार्बनिक पदार्थों कि मात्रा में कमी, मृदा क्षारियता, मृदा उर्वरता में गिरावट, रसायनों के अवशेष के फलस्वरू मृदा, जल एवं वायु प्रदूषण तथा मानव स्वास्थ्य पर विपरीत प्रभाव। इन सभी समस्याओं से छुटकारा पाने का एक मात्र उपाय जैविक खेती ही है। जैविक खेती में पोषक तत्व प्रबंधन करने के लिए किसानों को विभिन्न प्रकार की जैविक खेती (केंचुआ खाद, गोबर की खाद, कम्पोस्ट, हरी खाद, फसल अवशेष आधारित खाद) तथा जीवाणु खाद का प्रयोग अति आवश्यक हो जाता है जिससे फसल उत्पादन तथा उत्पादकता में गिरावट न हो तथा मृदा की उर्वरा शक्ति बनी रहे।

पादप पोषण में नत्रजन एवं फास्फोरस दो महत्वपूर्ण पोषक तत्व हैं। फसलों द्वारा भूमि से लिये जाने वाले प्राथमिक मुख्य पोषक तत्वों-नत्रजन, सुपर फास्फेट एवं पोटाश में से नत्रजन का सर्वाधिक अवशोषण होता है क्योंकि इस तत्व की सबसे अधिक आवश्यकता होती है और शेष ५५-६० प्रतिशत भाग या तो पानी के साथ बह जाता है या वायुमण्डल में डिनाइट्रीफिकेशन से मिल जाता है या जमीन में ही अस्थायी बन्धक हो जाते हैं !

नत्रजन वायुमंडल में प्रचुर मात्रा में (लगभग ७९ प्रतिशत) उपलब्ध है परन्तु पौधे

सौजन्यः- वेब द्वारा

इसका उपयोग तभी कर सकते हैं जब इस नत्रजन को पौधों के उपयोगी स्वरूप में बदल दिया जाए जो कि रासायनिक क्रियाओं द्वारा या विशिष्ट तरह के सूक्ष्म जीवाणुओं द्वारा ही सम्पन्न किया जा सकता है। नत्रजन के बाद फास्फोरस दूसरा प्रमुख पादप पोषक तत्व है जिसकी आपूर्ति हेतु पृथ्वी के गर्भ में उपलब्ध सीमित स्त्रोतों का खनन कर प्राप्त रॉक फास्फेट से फास्फोरस युक्त उर्वरकों का निर्माण किया जाता है। फास्फोरस उर्वरको की उपयोग दक्षता बहुत ही कम होती है क्योकि मृदा मे फास्फोरस अचल रूप में होता है और क्रिया के फलस्वरूप स्थिर हो जाता है।

भारतीय कृषि मे जीवाणु खाद का महत्वपूर्ण स्थान है एवं इनका अधिक से अधिक मात्रा में प्रयोग कर उर्वरकों की खपत कम की जा सकती है, पर्यावरण को होने वाले नुकसान से बचा जा सकता है। फसल उत्पादन के लागत में कमी की जा सकती है एवं फास्फोरस उर्वरकों की उपयोग क्षमता बढ़ाई जा सकती है। बैक्टेरिया, कवक, नीलहरित शैवाल इत्यादि के सक्रिय प्रभावी विभेद की पर्याप्त संख्याओं के उत्पादको मुख्यतया जीवाणु खाद कहते है। जीवाणु खाद मृदा में मौजूद लाभकारी सूक्ष्म जीवों का वैज्ञानिक तरीकों से चुनाव कर प्रयोगशालाओ में तैयार की जाती है। वायुमंडल के नत्रजन व भूमि के फास्फोरस को पौधों को उपलब्ध कराने वाले जीवाणुओं को जीवित अवस्था में लिग्नाइट व कोयले के चुरे में मिलाकर जीवाणु खाद को तैयार किया जाता है। जीवाणु खाद में इन लाभदायक जीवाणुओ की संख्या एक ग्राम में दस करोड़ से अधिक रखी जाती है। वर्तमान परिस्थितियों में नत्रजनधारी उर्वरकों के साथ-साथ नत्रजन के वैकल्पिक स्रोतों का उपयोग न केवल आर्थिक दृष्टि से महत्वपूर्ण है बल्कि मृदा की उर्वरा शक्ति को टिकाऊ रखने के लिये भी आवश्यक है। ऐसी स्थिति में जैव उर्वरकों का प्रयोग करना एकमात्र विकल्प के रूप में उभर कर सामने आ रहा है। जैव उर्वरकों को बीजोत्पादन कार्यक्रम मे लेने पर २० प्रतिशत तक उपज में वृद्धि पाई गई है।

जैव उर्वरक क्या है ?

जैव उर्वरक विशिष्ट प्रकार के जीवाणुओं का एक विशेष प्रकार के माध्यम, चारकोल, मिट्टी या गोबर की खाद में ऐसा मिश्रण है, जो वायुमण्डलीय नत्रजन को साइकल द्वारा पौधों को उपलब्ध कराती है या मिट्टी में उपलब्ध अघुलनशील फास्फोरस को घुलनशील अवस्था में परिवर्तित करके पौधों को उपलब्ध कराता है। इनके प्रयोग से रासायनिक उर्वरकों की 1/3 मात्रा तक की बचत हो जाती है।

जैव उर्वरकों का वर्गीकरण

नाइट्रोजन पूर्ति करने वाले जैव उर्वरक या जीवाणु सभी दलहनी फसलों व तिलहनी फसलों जैसे-सोयाबीन और मूँगफली की जड़ों में छोटी-छोटी ग्रन्थियों में पाया जाता है, जो सहजीवन के रूप में कार्य करते हुए वायुमण्डल में उपलब्ध नाइट्रोजन को पौधों को उपलब्ध कराता है। राइजोबियम जीवाणु

अलग–अलग फसलों के लिये अलग–अलग होता है इसलिये बीज उपचार हेतु उसी फसल का कल्चर प्रयोग करना चाहिये।

जैव उर्वरकों से बीज उपचार करने की विधि

जैव उर्वरकों के प्रयोग की यह सर्वोत्तम विधि है। १ लीटर पानी में लगभग १०० ग्राम गुड़ डालकर उबालकर अच्छी तरह मिलाकर घोल बना लेते हैं। इस घोल को बीजों पर छिड़क कर मिला देते हैं जिससे प्रत्येक बीज पर इसकी परत चढ़ जाये इसके उपरान्त बीजो को छायादार जगह में सुखा लेते हैं। उपचारित बीजों की बुवाई सूखने के तुरन्त बाद कर देनी चाहिये।

पौध जड़ उपचार विधि

धान तथा सब्जी वाली फसलें, जिनके पौधों की जड़ों को जैव उर्वरकों द्वारा उपचारित किया जाता है। इसके लिये बर्तन में ५–७ लीटर पानी में एक किलोग्राम जैव उर्वरक मिला लेते हैं। इसके उपरान्त नर्सरी से पौधों को उखाड़कर तथा जड़ों से मिट्टी साफ करने के पश्चात ५०–१०० पौधों को बण्डल में बाँधकर जीवाणु खाद के घोल में १० मिनट तक डुबो देते हैं। इसके बाद तुरन्त रोपाई कर देते हैं।

कन्द उपचार विधि

गन्ना, आलू, अदरक, घुइयाँ जैसी फसलों में जैव उर्वरकों के प्रयोग हेतु कन्दों को उपचारित किया जाता है। एक किलोग्राम जैव उर्वरक को २०–३० लीटर घोल में मिला देते हैं। इसके उपरान्त कन्दों को १० मिनट तक घोल में डुबोकर रखने के पश्चात बुवाई कर देते हैं।

मृदा उपचार विधि

४–५ किलोग्राम जैव उर्वरक ५०–६० कि.ग्रा. मिट्टी या कम्पोस्ट का मिश्रण तैयार करके प्रति हेक्टेयर की दर से खेत की अन्तिम जुताई पर खेत में मिला देते हैं।

जैव उर्वरकों के प्रयोग में सावधानियाँ

जैव उर्वरक को हमेशा धूप या गर्मी से बचाकर रखना चाहिये। कल्चर पैकेट उपयोग के समय ही खोलना चाहिये। कल्चर द्वारा उपचारित बीज, पौध, मिट्टी या कम्पोस्ट का मिश्रण छाया में ही रखना चाहिये। कल्चर प्रयोग करते समय उस पर उत्पादन तिथि, उपयोग की अन्तिम तिथि, फसल का नाम आदि अवश्य लिखा देख लेना चाहिये। निश्चित फसल के लिये अनुमोदित कल्चर का उपयोग करना चाहिये।

जैव उर्वरकों के प्रकार

1. राइजोबियम कल्चर

यह एक मृदा बैक्टेरिया है जो दलहनी फसलों की जड़ों पर गुलाबी रंग की गाँठे बनाकर उनमें रहते है तथा हवा में से नत्रजन लेकर पौधों को उपलब्ध कराते हैं। यह पौधों की जडों में वायुमंडलीय नाइट्रोजन का स्थिरीकरण करके उसे पौधों के लिए उपलब्ध कराती है इसके द्वारा मृदा में स्थिर की गई नत्रजन की मात्रा जीवाणु का प्रकार, पौधे की किस्म, मृदा गुण, वातावरण एवं की जाने वाली शस्य क्रियाओं पर निर्भर करती है। इसके द्वारा मृदा में स्थिर की गई नत्रजन कार्बनिक अवस्था में होती है, उसका नुकसान बहुत कम होता है एवं पौधे ज्यादा दक्षता से उसका उपयोग कर पाते है। यह

खाद दलहनी फसलों में प्रयोग की जा सकती है तथा यह फसल विशिष्ट होती हैं, अर्थात अलग-अलग फसल के लिये अलग-अलग प्रकार के राइजोबियम जीवाणु खाद का प्रयोग होता है। राइजोबियम जीवाणु खाद से बीज उपचार करने पर ये जीवाणु खाद से बीज पर चिपक जाते हैं। बीज अंकुरण पर ये जीवाणु जड़ के मूलरोम द्वारा पौधों की जड़ों में प्रवेश कर जड़ों पर ग्रन्थियों का निर्माण करते हैं।

फसल विशिष्ट पर प्रयोग की जाने वाली राइजोबियम कल्चरः

छलहनी फसलेंः मूँग, उर्द, अरहर, चना, मटर, मसूर; मटर; लोबिया; राजमा; मेथी इत्यादि।

तिलहनी फसलेंः मूँगफली, सोयाबीन।

अन्य फसलेंः बरसीम, ग्वार आदि।

2. एजोटोबैक्टर कल्चर

यह जीवाणु खाद में पौधों के जड़ क्षेत्र में स्वतन्त्र रूप से रहने वाले जीवाणुओं का एक नम चूर्ण रूप उत्पाद है, जो वायुमण्डल की नाइट्रोजन का स्थिरीकरण कर पौधों को उपलब्ध कराते हैं। यह जमीन मे स्वतंत्र रूप से रहकर हवा की नत्रजन को ग्रहण कर भूमि में छोड़ते है, जो पौधों को उपलब्ध होती है। मृदा में इनकी संख्या मे बढ़ोतरी मृदा में पाये जाने वाले कार्बनिक कार्बन पर निर्भर करती है। यह जीवाणु खाद दलहनी फसलों को छोड कर सभी फसलों पर उपयोग में लायी जा सकती है। इसका प्रयोग सब्जियों जैसे-टमाटर; बैंगन; मिर्च; आलू; गोभी वर्गीय सब्जियों में किया जाता है!

3. एजोस्पाइरिलम कल्चर

यह जीवाणु खाद भी मृदा में पौधों के जड़ क्षेत्र में स्वतन्त्र रूप से रहने वाले जीवाणुओं का एक नम चूर्ण रूप उत्पाद है, जो वायुमण्डल की नाइट्रोजन का स्थिरीकरण कर पौधों को उपलब्ध कराते हैं। यह जीवाणु खाद खरीफ के मौसम में धान, मोटे अनाज तथा गन्ने की फसल के लिए विशेष उपयोगी है इनके अलावा गेहूँ व जौ की फसल के लिए भी लाभकारी है इसके प्रयोग से फसल के उत्पादन में १०-१२ प्रतिशत वृद्धि होती है तथा १५ से २० किलोग्राम प्रति हेक्टेयर नत्रजन की बचत होती है।

4. नीलहरित शैवाल खाद

एक कोशिकीय सूक्ष्म नीलहरित शैवाल नम मिट्टी तथा स्थिर पानी में स्वतन्त्र रूप से रहते हैं। ये शैवाल मिट्टी के सद्रश्य सूखी पपड़ी के टुकड़ो के रूप में होते है तथा धान की फसल के लिए जिसमें पानी भरा रहता है विशिष्ट लाभकारी होते हैं। धान के खेत का वातावरण नीलहरित शैवाल के लिये सर्वथा उपयुक्त होता है। इसकी वृद्धि के लिये आवश्यक ताप, प्रकाश, नमी और पोषक तत्वों की मात्रा धान के खेत में विद्यमान रहती है। ये सूक्ष्म जीवाणु २०-३० किलोग्राम नत्रजन प्रति हैक्टेयर उपलब्ध कराते हैं तथा फसल की १०-१५ प्रतिशत उपज में बढ़ोतरी करते है।

<u>प्रयोगविधि</u>ः धान की रोपाई के ३-४ दिन बाद स्थिर पानी में १२.५ कि.ग्रा. प्रति हे. की दर से सूखे जैव उर्वरक का प्रयोग करें। इसे प्रयोग करने के पश्चात ४-५ दिन तक खेत

में लगातार पानी भरा रहने दें। इसका प्रयोग कम से कम तीन वर्ष तक लगातार खेत में करें। इसके बाद इसे पुनः डालने की आवश्यकता नहीं होती। यदि धान में किसी खरपतवारनाशी का प्रयोग किया है तो इसका प्रयोग खरपतवारनाशी के प्रयोग के ३-४ दिन बाद ही करें।

5. फास्फेटिक कल्चर

फास्फेटिक जीवाणु खाद भी स्वतन्त्रजीवी जीवाणुओं का एक नम चूर्ण रूप में उत्पाद है। नत्रजन के बाद दूसरा महत्वपूर्ण पोषक तत्व फास्फोरस है, जिसे पौधे सर्वाधिक उपयोग में लाते हैं। फसलों को फास्फोरस की उपलब्धता बढ़ाने हेतु मुख्यतया डी.ए.पी. एवं सिंगल सुपर फास्फेट का प्रयोग किया जाता है, जिनका एक बहुत बड़ा भाग जमीन में अघुलनशील हो जाता है जिसे पौधे आसानी से ग्रहण नहीं कर पाते हैं। जीवाणु खाद पी.एस.बी. इसी अघुलनशील फास्फोरस को पौधों को घुलनशील बनाकर उपलब्ध कराता है। फास्फेटिक उर्वरकों का लगभग एक-तिहाई भाग पौधे अपने उपयोग में ला पाते हैं। शेष घुलनशील अवस्था में ही जमीन में ही पड़ा रह जाता है, जिसे पौधे स्वयं घुलनशील फास्फोरस को जीवाणुओं द्वारा घुलनशील अवस्था में बदल दिया जाता है तथा इसका प्रयोग सभी फसलों में किया जा सकता है।

फास्फेटिक कल्चर की प्रयोग विधिः फास्फेटिक कल्चर या पी.एस.बी. कल्चर का प्रयोग रोपा लगाने के पूर्व धान पौध की जड़ों या बीज को बोने के पहले उपचारित किया जाता है। बीज उपचार हेतु ५-१० ग्राम कल्चर/किलोग्राम बीज दर से उपचारित करें। रोपा पद्धति में धान की जड़ों को धोने के बाद ३००-४०० ग्राम कल्चर के घोल में डुबाकर निथार लें, बाद में रोपाई करें। पी.एस.बी. कल्चर का भूमि में सीधे उपयोग की अपेक्षा बीजोपचार या जड़ों का उपचार अधिक लाभकारी होता है।

जैव उर्वरकों के उपयोग से लाभ

- इनसे बीज उपचार करने से अंकुरण शीघ्र होता है तथा कल्लों की संख्या में वृद्धि होती है। इसके प्रयोग से फसलों की पैदावार में वृद्धि होती है।
- ये जीवाणु फसलों की पौषक तत्वों की जरूरत को पूरा कर उनकी उत्पादन व उत्पादकता बढ़ाते है।
- ये सूक्ष्म जीवाणु मृदा में मौजूद फास्फोरस को घुलनशील बनाकर पौधो के लिए उपलब्धता बढ़ाते हैं।
- रासायनिक उवर्रक एवं विदेशी मुद्रा की बचत होती है। ये हानिकारक या विषैले नहीं होते !
- मृदा को लगभग २५-३० कि.ग्रा./हे. नाइट्रोजन एवं १५-२० कि.ग्रा. प्रति हेक्टेयर फास्फोरस उपलब्ध कराना तथा मृदा की भौतिक एवं रासायनिक दशाओं में सुधार लाना।
- इनके प्रयोग से उपज में वृद्धि के अतिरिक्त गन्ने में शर्करा की, तिलहनी फसलों में तेल की तथा मक्का एवं आलू में स्टार्च की मात्रा में बढ़ोतरी होती है।
- विभिन्न फसलों में बीज उत्पादन कार्यक्रम द्वारा १५-२० प्रतिशत उपज

में वृद्धि करना और उत्पाद की गुणवता बहुत अच्छी रहती है।

- किसानों को आर्थिक लाभ होता है।
- ये सूक्ष्म जीव कुछ मात्रा में सूक्ष्म आवश्यक पौषक तत्वों जैसे.जिंक, तांबा, सल्फर, लोहा, बोरोन, कोबाल्ट व मोलिबिडिनम इत्यादि पौधों को प्रदान करते हैं।
- ये सूक्ष्म जीवाणु खेती मे बचे हुए कार्बनिक अपशिष्टों को सड़ाकर मृदा में कार्बनिक पदार्थ की उचित मात्रा बनाये रखते हैं।
- ये सूक्ष्म जीवाणु पादप वृद्धि करने वाले हारमोन्स, प्रोटिन, विटामिन एवं अमीनो अम्ल का उत्पादन करते हैं तथा यह सूक्ष्म जीवाणु मृदा में पनप रही रोग जनक फफूंद नष्ट कर लाभकारी जीवाणुओं की संख्या में वृद्धि करते हैं।
- इन सूक्ष्म जीवाणुओं के प्रयोग से मृदा की जलधारण शक्ति व उर्वरा शक्ति बढ़ती है जिससे फसलोत्पादन बढ़ता है।

उपयोग की विधि –

जीवाणु खाद का फसल उत्पादन मे प्रयोग कई प्रकार से किया जा सकता है जैसे –

अ. **बीजोपचार द्वारा** – आवश्य कतानुसार पानी मे १५० ग्राम गुड़ १ लीटर पानी के हिसाब से घोल कर गर्म करे। इसे ठण्डा कर इसमें जीवाणु खाद के तीन पैकेट (एक हैक्टेयर क्षेत्र हेतु) घोलें। अब इस घोल को एक हैक्टेयर क्षेत्र के लिए आवश्यक बीज की मात्रा पर छिड़कते हुए हल्के हाथ से बीजों को पलटते जावें, जिससे बीजो के ऊपर जीवाणु खाद की एक बारीक परत चढ़ जाए। अब बीजों को किसी छायादार स्थान पर सुखाकर शीघ्र ही बुआई करनी चाहिए।

आ. **जड़ों के उपचार द्वारा** – फल, सब्जियों एवं अन्य पौधों की जड़ों को रोपाई से पूर्व जीवाणु खाद के घोल में लगभग १५ मिनट तक डुबोकर रखें तथा बाद में इनकी भूमि में रोपाई करनी चाहिए।

इ. **भूमि उपचार** – जीवाणु खाद को नम मिट्टी में अच्छी प्रकार से मिलाकर पूरे खेत में सायंकाल छिटक कर सिंचाई कर देनी चाहिए।

सावधानियाँ –

- जीवाणु खाद को पैकेट पर लिखी फसल के लिए ही पैकेट पर अंकित अंतिम तिथि से पूर्व प्रयोग करें।
- जीवाणु खाद को अत्यधिक ठंड, गर्मी एवं धूप से बचाकर रखा जाना चाहिए।
- जीवाणु खाद को रासायनिक उर्वरक एवं नाशकों के साथ नहीं मिलाना चाहिए।
- जीवाणु खाद को गुड़ के गर्म घोल में नहीं मिलाना चाहिए अन्यथा जीवाणु मर जाएंगे।
- बीज को कवकनाशी, कीटनाशी एवं जीवाणु खाद सभी से उपचारित करना हो तो इसी क्रम में प्रयोग में लेना चाहिए।
- जीवाणु खाद से उपचारित बीज को छाया में सुखाना चाहिए।

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
mcab@dataone.in

Fax : 0364-2222026
Website : www.mcab.gov.in

A premier licenced State Co-operative Bank & recipient of National Award, and RTGS/NEFT/ATM enabled Bank in the North-Eastern Region having democratically elected Board of Directors since inception and managed by professionals.

FINANCIAL HIGHLIGHTS	**(As on 31.03.2012)**	**(As on 31.03.2013)**
• Paid up Share Capital & Reserves	: ₹ 7425.37 lakhs	₹ 9071.97 lakhs
• Deposits	: ₹ 118361.93 lakhs	₹ 133496.14 lakhs
• Loans & Advance	: ₹ 42223.38 lakhs	₹ 61498.25 lakhs
• Investments	: ₹ 47239.12 lakhs	₹ 53578.70 lakhs
• Money at Call & Short Notice	: ₹ 41609.52 lakhs	₹ 36055.34 lakhs
• Net Profit	: ₹ 1117.82 lakhs	₹ 1451.51 lakhs
• Working Capital	: ₹ 145392.22 lakhs	₹ 163452.92 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*
- *Loans 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*

BRANCHES ALL OVER MEGHALAYA

"A Bank of the people, by the people & for the people"

Please bank on us for all your banking needs

D.F. War	***M. Rahman***	***W. K. Kyndiah***
Managing Director	*Vice-Chairman*	*Chairman*

Floor capital for small finance, payments banks set at ₹100 crore

The Reserve Bank of India (RBI), issued final guidelines for small finance banks and payments banks, paving the way for mobile firms and supermarket chains, among others, to enter the banking arena to cater to individuals and small businesses. The minimum paid-up capital for these banks will be ₹100 crore each. The foreign shareholding will be in line with the foreign direct investment (FDI) policy for private sector banks.

According to the RBI, the objective of setting up of small finance banks will be to further financial inclusion by provision of savings vehicles and supply of credit to small business units, small and marginal farmers, micro and small industries and other unorganised sector entities, through high technology-low cost operations. Individuals / professionals with 10 years of experience in banking and finance and companies and societies will be eligible to set up small finance banks.

Existing non-banking finance companies (NBFCs), micro finance institutions (MFIs), and local area banks (LABs) can also opt for conversion into small finance banks. The small finance banks will primarily undertake basic banking activities of acceptance of deposits and lending to un-served and underserved sections, including small business units, small and marginal farmers, micro and small industries and unorganised sector entities. However, RBI said, "There will not be any restriction in the area of operations of small finance banks."

The small finance banks will be subject to all prudential norms and regulations of RBI as applicable to existing commercial banks, including requirement of maintenance of Cash Reserve Ratio (CRR) and Statutory Liquidity Ratio (SLR). RBI also said that if the small finance bank aspired to transit into a universal bank, such transition would not be automatic, but would be subject to fulfilling minimum paid-up capital / net-worth requirement as applicable to universal banks, among others.

A promoter/promoter group can have a joint venture with an existing scheduled commercial bank to set up a payments banks. However, scheduled commercial bank can take equity stake in a payments bank to the extent permitted under Section 19 (2) of the Banking Regulation Act, 1949, said RBI.

Payment banks can accept deposits up to ₹1 lakh/customer

The payments banks will be allowed to accept savings deposits primarily from the un-banked and under-banked population up to a

maximum of ₹1 lakh an individual customer. They will also be allowed to issue ATM/debit cards, remit money from one account to another, a move that should benefit migrant labourers. However, much will depend on the transaction fee charged for such transfers. "The objectives of setting up of payments banks will be to further financial inclusion by providing small savings accounts and payments/remittance services to [the] migrant labour workforce, low income households, small businesses, other unorganised sector entities and other users," the RBI said. Such banks will be allowed to distribute non-risk sharing simple financial products like mutual fund units and insurance products. They will also be allowed to become a business correspondent of another bank.

Payments bank will, however, not be allowed to loan money. The RBI has proposed setting up small finance banks for lending to small businesses and consumers. To protect depositors, the RBI has mandated that payments banks will be required to invest a minimum 75% of the deposits collected from the public in government securities with up to one year maturity. They will be allowed to hold a maximum of 25% in current and time/fixed deposits with other scheduled commercial banks for operational purposes and liquidity management. No other market investment will be allowed. The RBI said that existing non-bank Pre-paid Payment Instrument (PPI) issuers; other entities such as individuals / professionals; Non-Banking Finance Companies (NBFCs), corporate Business Correspondents (BCs), mobile telephone companies, super-market chains, companies; owned and controlled by residents; and public sector entities can apply to set up payments banks.

Small banks can lend to small businesses

The country's financial inclusion mission got a step further with the Reserve Bank of India releasing its final guidelines on small banks. With no restriction in the area of operations, "a small finance bank shall primarily undertake basic banking activities of acceptance of deposits and lending to un-served and under-served sections including small business units, small and marginal farmers, micro and small industries and unorganised sector entities," RBI said in a statement. Small banks will be allowed to give loans, which is not permitted for payment banks.

For a small finance bank, the promoter's minimum initial contribution to the paid-up equity capital shall at least be 40%, which should be brought down to 30% within 10 years and 26% within 12 years. If at commencement of the bank, the promoter holding is in excess of 40%, it should be brought

down to 40% within a period of five years. Earlier, this timeframe was three years. However, the RBI will be flexible if the existing NBFCs / MFIs / LABs have diluted the promoters' shareholding to below 40%, but above 26%, due to regulatory requirements or otherwise, RBI may not insist on the promoters' minimum initial contribution of 40%.

The minimum paid-up equity capital for small finance banks shall be ₹100 crore with a minimum capital adequacy ratio of 15% of its risk weighted assets, Tier-I capital of at least 7.5% and Tier II capital should be limited to a maximum of 100% of total Tier-I capital. The small finance banks will be required to extend 75% of its Adjusted Net Bank Credit to priority sector lending; sectors including agriculture, micro loans, rural home loans, education loans, etc. Further, the RBI has specified a cap of ₹25 lakh on at least 50% of the loan portfolio.

RBI asks banks to adopt easy norms for m-banking registration

The Reserve Bank of India, asked banks to make the registration process for mobile banking services easy, and activate the services at the earliest to expand the reach of mobile banking. Releasing the operative guidelines for mobile banking transactions, the RBI said there is a slow pick-up of mobile banking services despite the high mobile density in the country. Banks should strive to provide options for easy registration for mobile banking services to their customers, it added.

"The time taken between registration of customers for mobile banking services and activation of the service should also be minimal," the RBI said. The central bank also advised banks that in order to quicken the process of MPIN generation and also widen the accessibility of this process to their mobile banking registered customers, banks could consider adopting various channels and methods, including a 'common website' which could be designed as an industry initiative. "Lack of awareness as well as standardisation of procedures at banks also adds to the problems which have led to a situation of slow pick-up of mobile banking services despite the high mobile density in the country. This is of particular importance when customers are using inter-operable mobile banking platforms," the RBI said in a notification to banks. The RBI observed that as banks had started offering mobile banking services at different points of time, there were differences in procedures adopted by banks for registering customers for mobile banking as well as in the channels of delivery and authentication process.

Jan Dhan covers 99.7% households

Banks, primarily the public sector players, have opened 11.5 crore accounts under the Pradhan Mantri Jan Dhan Yojana (PMJDY), covering 99.74% households and paving the way for transfer of over ₹65,000 crore of subsidies and other transfers directly into these accounts.

"Most of India today is included in the banking system... except inaccessible households, bank employees visited every household, and their strike rate is 99.74%," finance minister Arun Jaitley said, adding that in the long run the initiative will help people to turn to plastic money and reduce the use of cash in the economy. Among the 21.05 crore households surveyed, 20.99 crore have access to bank accounts. Of the accounts opened under Jan Dhan, 51% were held by women, while over 59% were in rural areas. Barring Jammu & Kashmir, Arunachal Pradesh, Chattisgarh, Manipur, Meghalaya, Nagaland and Odisha, all other states have reported 100% coverage for households, the government said. Although, a little over ₹9,100 crore has so far been deposited in 28% of the accounts, the government is hopeful of scaling up that number in the coming months as the benefits, such as cooking gas subsidy, are transferred directly.

Financial services secretary Hasmukh Adhia said once fully rolled out, MNREGS alone will result in the transfer of ₹33,000 crore a year through bank accounts, while another ₹25,000-30,000 crore is expected to flow by way of subsidies related to cooking gas. Up to January 2014, ₹6,689 crore have already been disbursed to over 8 crore cooking gas customers, Adhia said. While connecting every household with the banking system was the main thrust of the Jan Dhan Yojana, the move will help thousands of crores flow into the formal banking channels, which was so far lying in households with little productive use. Adhia said even Guinness Book of World Records has recognized the achievements made under PMJDY.

In its citation, the Guinness Book said: "Most bank accounts opened in one week as part of the Financial Inclusion Campaign is 18,096,130 and was achieved by the Department of Financial Services, Government of India from August 23 to 29, 2014."

RBI directive to co-op banks

The Reserve Bank of India has asked the boards of urban co-operative banks (UCB) to constitute a special committee for monitoring and following up cases of frauds involving amounts of ₹1 crore and above. The Audit Committee of the Board (ACB) will continue to monitor all the cases of frauds in general. There are 1,589 UCBs in

the country.

The special committee will identify the systemic lacunae, if any, that facilitated perpetration of the fraud and put in place measures to plug the same; identify the reasons for delay in detection, if any, reporting to top management of the bank and RBI; monitor progress of CBI / police investigation, and recovery position. Further, the committee will ensure that staff accountability is examined at all levels in all the cases of frauds and staff side action, if required, is completed quickly without loss of time; review the efficacy of the remedial action taken to prevent recurrence of frauds, such as strengthening of internal controls. The special committee may be constituted with five members of the Board of Directors.

ICRISAT awards for women farmer

About 1,500 women farmers from 12 states attended the Women Farmers' Day hosted by the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT). "Recognising the contribution of women to agriculture is critical to achieve global food security," ICRISAT Director General William Dar said, addressing farmers. Thirty women were recognised as gold category awardees and another 53 women were declared silver awardees.

War on bad loans faces stress

Despite the Reserve Bank of India's (RBI) attempt to put in place a system for early detection and resolution of stressed assets, bankers say that since every joint lender forum (JLF) decision is vetted by the respective bank board, it becomes difficult to stick to the regulator's timeline. Banks are required to form a JLF when repayment in an account is due over 61 days, and is called a special mention account (SMA-2). As per RBI directives, once a JLF is formed, banks must formulate a corrective action plan (CAP) within 45 days. The process, however, gets delayed as the bank boards do not meet too often and preparing a CAP report takes time, say bankers. Boards of larger banks, like Bank of Baroda and Punjab National Bank, meet once a month. It's in the case of smaller banks, where the boards do not meet regularly. The frequency of meetings at larger banks, however, depends on the amount of the new business that the banks have generated in the period which needs board approval.

According to a senior PSB official, though the time to arrive at a CAP was raised to 45 days from 30 days earlier, it is insufficient as banks have to prepare a detail report on the JLF proposal and submit it to the board. “Bank boards may not always agree on what has been agreed upon by the lenders' forum and it takes longer to

convince the merit of the proposal to the board," he added. According to the Banking Regulation Act, not less than 51% of the total number of members of the board of directors of a bank shall consist of people who shall have special knowledge or practical experience in accountancy, agriculture banking, economics and finance. Of that, 51% directors, not less than two directors, shall have special knowledge or practical experience in respect of agriculture and rural economy, co-operation or small-scale industry, the Act says. In case of private sector banks, the boards are constituted by the promoters or shareholders.

"Even the corporate debt restructuring (CDR) cell takes at least 90 days from conducting the techno-economic viability study (TEV) to decide on the package and get it approved by an independent evaluation committee (IEC). How can a JLF rectify an account in 45 days?" he said. According to PNB Executive Director, the only relief for banks comes when the JLF decides to recommend restructuring of a stressed asset in the CAP. "In case of JLF restructuring or a CDR referral, the time to implement is 90 days," he said.

Jan Dhan: enrolees over 60 short-changed on life cover

A RuPay card under the Jan Dhan scheme may not be enough for nominees to get the death benefit of ₹30,000 when an account holder passes away. Some nominees found this out recently, to their surprise. When Gowramma (name changed), from Karnataka, passed away, State Bank of Mysore, where she is a Jan Dhan account holder, rejected the nominee's claim for the death benefit of ₹30,000 as the deceased was above 60 years of age.

According to the Finance Ministry approved norms for life cover under the Jan Dhan scheme, the eligibility for risk cover ceases when a person turns 60. These guidelines were framed long after the launch of the scheme and many elderly people had enrolled for the same when it was launched by Prime Minister Narendra Modi in August 2014, under the current norms, the account holder will have to exit the life insurance scheme the day he or she turns 60. State Bank of Mysore has till date received four cases each claiming death benefit of ₹30,000 under the scheme. Of them, two claims were rejected straightaway as the deceased were aged above 60, sources in the bank said. The claims for the other two cases are being processed though the bank is not clear as to which LIC office the claim papers have to be sent for final settlement.

Public sector banks are in a state of confusion on the issue of handling claims. Even accident insurance claims are reaching the doorsteps of these banks.

Although the banks have till date issued 8.4 crore RuPay cards for over 10 crore Jan Dhan accounts, they do not want to foot the death benefit bill for the life cover. They are only keen on having a fool proof mechanism to pass on the claims to Life Insurance Corporation. Both LIC and the public sector banks are yet to firm up a seamless mechanism for claims settlement under the life cover promised under scheme.

There is a need to map LIC branches with those of the banks so that claims could be processed seamlessly, said the chief executive of a public sector bank. Currently, banks are not fully aware about how to take the process forward in case nominees come up with claims. Indications are that the nominees will now be asked to furnish an affidavit confirming that the deceased was the head of the family or that he/she was an earning member of the family, and in the age group of 18-59.

Dr. Rajan questions farm debt waiver

Questioning the effectiveness of farmer debt-waiver programmes by the government, RBI governor Dr.Raghuram Rajan said that such measures only hamper the credit flow to farmers. He said that studies show such measures to be ineffective, adding that debt waivers effectively dry up formal credit facilities post waiver to the farmers.

"In some states on certain occasions we have had debt waivers. How effective these debt waivers have been? In fact the studies that we have typically show that they have been ineffective. In fact they have constrained the credit flow post waiver to the farmers," he said. "One question is how else we should deal with over indebtedness in the farm sector. Also worth examining very important issue is of farmer suicide. How much they are caused by indebtedness especially to the formal (banking) system, how much formal system alleviates indebtedness....," the governor said.

Andhra Pradesh and Telangana governments have declared loan waivers for the farmers hit by cyclone Phailin last year. While the Telangana government has given the mandated 25% of the written off loan amount to the banks, Andhra Pradesh has not done it so far. Banks have over ₹1.3 lakh crore exposure to the farm sector in these two states. In 2008, the then UPA government at Centre had come out with Agricultural Debt Waiver and Debt Relief Scheme (ADWDRS) 2008 under which 3.69 crore small and marginal farmers and 60 lakh other farmers were given debt relief to the extent of ₹52,516 crore. Government auditor CAG had found in several cases that ineligible farmers were given benefit while deserving were left out,

pointing to large-scale possibility of fraud.

Talking about subsidies for farm sector, Dr. Rajan said that it will be useful to see whether these subsidies have actually helped agriculture or not. The positive aspect is that you are giving a benefit, a cheap credit to agriculture. The concern, however, is whether this credit is being put to right use or is it leading to over indebtedness or distortionary investment. "We, for example, have crop loan that we have subsidised. But we don't subsidise longer term loans. Does that change the nature of what kind of activities are subsidised in agriculture? So that's one issue..." he added.

At WTO, India wants clarity on agricultural issues first

India has objected to the World Trade Organisation (WTO) starting work on reforming fisheries subsidies and anti-dumping rules before making headway to find a permanent solution to the food security problem. In a recent meeting of the WTO committee on rules, where some members pushed for action on fisheries subsidies and anti-dumping, India said that without clarity in agriculture and other core areas it would find it difficult to start work on rules. "We do not want the issue of finding a permanent solution to food security to get side-tracked. Focus has to remain on core issues and we should have a new formula in place by the end of next year as scheduled," a Commerce Ministry official told.

The WTO recently agreed not to take action against India or other developing countries if their food procurement subsidies breached present caps, till a permanent solution to calculation of such subsidies was arrived at. It also agreed to make all efforts to reach a permanent solution by 2014-end. It is important for India to have a permanent solution in place soon as the interim relief against action comes loaded with conditions that it may find difficult to meet. In the rules meeting, New Zealand, on behalf of a group called the Friends of Fish, said disciplines on fisheries subsidies should be central to the work of the group. It urged that work on fisheries subsidies should start immediately. Japan, on behalf of the group Friends of Anti-Dumping Negotiations, said that negotiations on anti-dumping should be part of the Post Bali Work Programme.

The group, which also includes China, want more transparency and stricter rules for anti-dumping investigations. Anti-dumping duties are levied against items that are sold by foreign companies at prices lower than what they charge in their home markets. "We are not against work progressing in the two areas. But these have to wait or it could lead to long delays in sorting out our food security issues," the

official said. New Delhi's first preference is to get the WTO to agree to exempt food procurement subsidies from the list of trade distorting subsidies so that the caps don't apply. Alternatively, it wants subsidy to be calculated based on reference price of recent years and not the existing reference year of 1986-88.

Reserve Bank modifies definition for non-cooperative borrower

The Reserve Bank of India (RBI), modified the definition of a non-cooperative borrower and also fixed the cut off limit for classifying borrowers as non-cooperative would be those borrowers having aggregate fund-based and non-fund based facilities of ₹5 crore from the concerned bank/financial institution (FI). "A non-cooperative borrower is one who does not engage constructively with his lender by defaulting in timely repayment of dues while having ability to pay, thwarting lenders' efforts for recovery of their dues by not providing necessary information sought, denying access to assets financed/collateral securities, obstructing sale of securities, etc," said the RBI.

In effect, said the RBI, "a non-cooperative borrower is a defaulter who deliberately stonewalls legitimate efforts of the lenders to recover their dues." RBI asked banks/FIs (Financial Institutions) to report information on these borrowers to the Central Repository of Information on Large Credits (CRILC). Further removal of names from the list of non-cooperative borrowers should be separately reported to CRILC with adequate reasoning/rationale.

A non-cooperative borrower in case of a company will include, besides the company, its promoters and directors (excluding independent directors and directors nominated by the Government and the lending institutions). In case of business enterprises (other than companies), non-cooperative borrowers would include persons, who are in-charge and responsible for the management of the affairs of the business enterprise. The RBI told banks/FIs to put in place a transparent mechanism for classifying borrowers as non-cooperative. "The decision to classify the borrower as non-cooperative borrower should be entrusted to a committee of higher functionaries, headed by an Executive Director and consisting of two other senior officers of the rank of general managers/deputy general managers as decided by the board of the concerned bank/FI."

"An opportunity should be given to the borrower for a personal hearing if the committee feels such an opportunity is necessary," the RBI added. However, it said that the order of the committee should be reviewed by another committee headed by the Chairman/CEO and

MD and consisting, in addition, of two independent directors of the bank/FI and "the order shall become final only after it is confirmed by the Review Committee." Boards of banks/FIs were asked to review on a half-yearly basis the status of non-cooperative borrowers.

Only 40% of rural households dependent on farming as main income source: NSSO

Hardly 58% of rural households in India are engaged in farming activity, which, in turn, contributes not even 60% to their average total monthly incomes. These are the findings of the latest countrywide "Situation Assessment Survey of Agricultural Households" conducted by the National Sample Survey Office (NSSO) for the 2012-13 crop year from July to June.

They refute a common perception regarding agriculture how it generates just 15% of India's GDP (2012-13 data) despite rural areas housing 68.8% of the total population (2011 Census). Such a view, reinforcing concerns of a widening Bharat-India divide, basically assumes "rural" to be synonymous with "agriculture". But as the NSSO survey findings released on show, only 9.02 crore (57.8%) out of the country's estimated 15.61 crore rural households were "agricultural" defined as those having at least one member self-employed in farming, either in principal or subsidiary status, during the last 365 days.

Further, even within the 9.02 crore agricultural households, only 68.3% reported farming (i.e. cultivation, livestock rearing and other agricultural activity) as their principal source of income. Thus, a mere 39.5% of rural households today are dependent on agriculture as the source yielding the maximum share of income. Even more revealing is the data on the total income of agricultural households. Net receipts from cultivation and rearing of animals accounted for just 59.8% of the average Indian farming family's monthly income.

The remaining was from wage/salaried employment, non-farm business and other sources such as remittances, interest and dividends. In short, while barely 58% of rural households are now "agricultural", over 40% of income even in their case comes from non-farming economic activities. This makes the gap between agriculture's share in GDP relative to that of the population residing in rural areas not as yawning as it may appear to be. "While 69% of India is still rural, the notion of rural meaning simply wheat or mustard fields is no longer appropriate. All agriculture is rural by definition, but the converse isn't true," points out Neelkanth Mishra, India Equity Strategist for Credit Suisse, a global

financial services company. The most obvious examples of the weakening association of rural with agriculture are Kerala, Tamil Nadu, Andhra Pradesh and, perhaps surprisingly, West Bengal and Bihar. Slightly over a quarter of Kerala's rural households are "agricultural". Moreover, just about a third of their income even for them originates from farming. Rajasthan has the highest share of agricultural-to-rural households, at 78.4%. But agricultural households even in this state derive less than 56% of monthly income from farming.

One reason for the growing chasm between "rural" and "agriculture" has to do with the very definition of the former, which is residual: Under the Census, any area not urban is deemed to be rural. Urban, on the other hand, refers to any place having a minimum population of 5,000, a population density above 400 per square km, and at least 75% of the male working population engaged in non-agricultural pursuits. Such a wide definition implies that even if only a quarter of households in a particular place are agricultural which is roughly the levels reached in Kerala it will continue to be classified as rural. As a result, while the farm sector's share to GDP will keep falling it was 25% till two decades ago rural wouldn't register a decline as steep, though it may become less and less agricultural. Mishra estimates that agriculture's share within India's rural GDP is already down to 25%. According to him, 75% of all new factories and 70% of manufacturing jobs created in the last decade were in rural areas.

Rural housing scheme 44% short of target

The Centre's flagship rural housing programme for the 12th Five-Year Plan is almost 44% short of its target so far, making the tough task of achieving Prime Minister Narendra Modi's vision of housing for all by 2022 even more daunting. The previous UPA government had set a target of constructing 1.5 crore rural houses under the Indira Awas Yojana during the 12th year plan (2012-17). However, data compiled by the rural development ministry shows that only 44.86 lakh houses have been constructed under the scheme as of November 2014 end, which is only 56% of the target of building 80.09 lakh houses in the first three years of the plan period. A senior government official told that achieving the robust targets set by the new government under the proposed revamped rural housing scheme will be difficult in the wake of the pile up of unfinished works of previous years.

The rural development ministry, under the NDA government, is giving a fresh push to the rural housing scheme to be called as the National Gramin Awaas Mission,

under which it aims to build three crore houses by 2022, starting from 2015. At average cost per unit of ₹1.17 lakh, against ₹ 73,000 now, the total investment on this project would be about ₹3.45 lakh crore. "We have a target of constructing 30 lakh and 35 lakh houses in 2015-16 and 2016-17. This means that remaining 2.25 crore houses will have to be built between 2017 and 2022, nearly 45 lakh houses every year, over and above the spill over from the 12th plan," the official said. In the first year of the plan in 2012-13, 21.8 lakh houses were built under the rural housing scheme, which was 72.6% of the annual target of 30.09 lakh, while last fiscal 15.9 lakh houses were constructed, 64.1% of the target of 24.8 lakh houses.

In the first eight months of this fiscal, the government built only 7.08 lakh houses under the scheme, just 28% of the annual target of 24.1 lakh houses. The new government plans to set up an autonomous registered society to implement and monitor the new scheme and tap institutional or bilateral/multilateral funding to implement the project in mission mode.

Co-op banks implementing core banking will be classified as financially sound: RBI

The Reserve Bank of India said full implementation of core banking solution will be included as an additional criterion for classifying an urban co-operative bank (UCB) as financially sound and well managed (FSWM). Hitherto, UCBs fulfilling criteria, among others, such as capital to risk weighted assets ratio of not less than 10%; gross non-performing assets (NPAs) of less than 7% and net NPAs of not more than 3%; were classified as FSWM banks.

The other criteria prescribed by the RBI for classifying a UCB as financially sound and well managed are: net profit for at least three out of the preceding four years, subject to it not having incurred a net loss in the immediate preceding year; no default in the maintenance of cash reserve ratio / Statutory Liquidity Ratio during the preceding financial year; sound internal control system with at least two professional directors on the Board; and regulatory comfort.

When it comes to regulatory comfort, the RBI said UCBs should have an impeccable record of regulatory compliance and no warning letter / cautionary advice should have been issued to or monetary penalty imposed on the bank on account of violation of RBI directives / guidelines during the preceding three financial years. The RBI said the new criteria would henceforth be considered for processing applications received from UCBs for opening of on-site/off-site / mobile ATMs, applications under Annual

Business Plans, extension of area of operation, shifting of premises and all other permissions from RBI. Meanwhile, to offer value added services to their customers, the RBI has decided to permit all UCBs which have implemented core banking solution fully to offer internet banking (view only) facility to their customers subject to compliance to security features.

Inflation expectations survey

The consumer price index (CPI) and wholesale price index (WPI) numbers have both fallen rapidly in recent weeks. It feels, while inflation itself is down, inflation expectations of people aren't. How did RBI divine this? It is through its 'inflation expectations' survey of households. Think of it as crowd sourced intelligence on inflation.

The RBI surveys 5,000 households every quarter to know where they expect prices to head in the coming months. Data on price expectations is collected for food, non-food, housing, services, household durables and general categories of items. To put things in context, the current inflation level experienced by each person is also captured in the matrix. The expectations are subjective assessments by the individual, based on their consumption pattern. The survey has been running since September 2005. The data serves as a lead indicator of inflation, just as the Purchasing Managers Index (PMI) serves as a lead indicator of industrial output. And just like the PMI, more than the actual number, it is the direction of inflation expectations that help predict the future.

Inflation is a huge factor that the RBI weighs before making policy decisions on interest rate changes and liquidity. However, CPI and WPI measures of inflation are lagging indicators as they measure price changes that already happened. By acting on those, the RBI will end up 'chasing' ground reality rather than shaping the future. So lead indicators such as inflation expectations are the key to know which way the wind is blowing. For example, the April-June quarter survey published in July 2014 showed a perceptible jump in the number of people who thought prices will fall. And so it has happened.

Also, the CPI and WPI are somewhat theoretical measures of inflation, as they are based on fixed 'baskets' of consumption assumed by policymakers. Given the diversity of the people in the country, inflation affects each person differently and these indices may not realistically capture its effects. The inflation expectations survey takes inputs from people with varied backgrounds to reflect different social economic and age groups. Participants are selected from 16 cities. The sample consists

of housewives (30%), self-employed people (20%), retired persons, daily workers and financial sector employees (10% each), other employed people (15%) and other groups (5%).

Need to clean up bad debts in banks within a year: Dr. Rajan

Reserve Bank of India Governor Raghuram Rajan, made a strong case for cleaning up bad debts of banks and restructure other possible non-performing assets (NPAs) within a year to put the economy back on track. He also favoured channelising 'full savings' of the households into the financial system so that the requisite resources for growth were made available. "In the short-term (up to 12 months), there is need to clean up the NPAs and then restructure other stressed loans so as to put the economy back on the track," Dr. Rajan said at the two-day Gyan Sangam at Pune. Total gross NPAs of public sector banks stood at over ₹2.43 lakh crore as on September 30, 2014. The top 30 NPAs accounted for ₹87,368 crore or 35.9% of total gross NPAs of PSBs.

Dr. Rajan said the bona fide mistakes made by the bankers while taking commercial decisions should be protected by the government. "If the officers are hauled up for such decisions, this would lead to delay in good decisions because of avoidance of risk," he said. The Governor also stated that there was a need for internationalisation of the banking system in the current global environment. "The capital base of the banks may need to be enhanced," Dr. Rajan said while emphasising on the need for consolidation in ownership, improvement in governance, and enhancement of management capability.

With the licensing of the small banks and the payments banks, there would be new players in the industry and competition among the PSBs will also grow to meet these challenges. "Accordingly, PSBs have to develop differentiated products," Dr. Rajan said. Stressing on the need for PSBs to recruit young talent, train, and retain them, Dr. Rajan said: "And that the government needs to have a re-look at the campus recruitment, which at present is banned because of Supreme Court ruling."

After 20 years, ₹1 paper notes to make a comeback

One rupee may not buy you much today, yet the Government is keen to start printing ₹1 notes after a gap of almost two decades. The Government has notified 'Printing of One Rupee Currency Notes Rules, 2015', which has come into effect from January 1, 2015. Due to higher cost and for freeing capacity to print higher denomination notes, printing ₹1 note was discontinued in November 1994, followed by ₹2 in

February 1995, and ₹5 in November 1995. Since then, only coins have been issued for these denominations. However, old notes are still in circulation and remain legal tender.

As before, the new one rupee note will have the signature of the Finance Secretary. Apart from the one rupee note, all other paper currency (₹2, ₹5, ₹10, ₹20, ₹50, ₹100, ₹500 and ₹1,000) have the signature of the RBI Governor, as these are issued by the Reserve Bank of India, whereas ₹1 is issued by the Government of India. The new ₹1 note will be different in terms of colour, too. It will be predominantly pink and green. Earlier, the ₹1 currency note had a predominantly indigo colour. Also, the new note will have 'Bharat Sarkar' on its masthead, with 'Government of India' printed below that. All other currencies have 'Bhartiya Reserve Bank' and 'Reserve Bank of India' printed on them.

In the last year of its printing, 44 million pieces of ₹1 notes were issued. Despite the RBI's appeal to change these notes for coins, these are still in circulation. However, there is no current estimate of such notes in circulation. According to the last official number in RBI's Annual Report for the year ended June 2002, a total of 3,076 million pieces of ₹1 notes (value ₹308 crore) were in circulation at the end of March 2002.

Don't replace Gandhiji with other leaders on banknotes: RBI

A Reserve Bank of India panel has decided against the inclusion of any other national leader's image on banknotes, saying that no other personality could better represent the ethos of India than Mahatma Gandhi. On the advice of the Government, the RBI had, in October 2010, constituted a Committee to design future currency notes, Finance Minister Arun Jaitley said in a written reply to the Lok Sabha. He said the Committee, inter alia, deliberated on the issue of changing the existing image of Mahatma Gandhi and inclusion of certain other personalities in the new design of banknotes. "After due consideration, the Committee decided that no other personality could better represent the ethos of India than Mahatma Gandhi," Finance Minister said.

RBI asks banks to inform customers of fall in minimum balance

The Reserve Bank of India asked banks to inform their customers about fall in minimum balance well in advance and said that penal charges should be levied only to the extent of shortfall in such balances. The guidelines with respect to levying of penal charges for non-maintenance of minimum balance will come into effect from April 1,

2015. "It has been decided that while levying charges for non-maintenance of minimum balance in savings bank account, banks shall adhere to the additional guidelines," RBI said in a notification addressed to banks.

As per detailed guidelines, RBI said the penal charges should be directly proportionate to the extent of shortfall observed. Charges should be a fixed percentage levied on the amount of difference between the actual balance maintained and the minimum balance as agreed upon at the time of opening of account. A suitable slab structure for recovery of charges may be finalised, RBI said. Further, in the event of a default in maintenance of minimum balance, the bank should notify the customer clearly by SMS/email/letter, giving them time period of one month to restore the balance so as to avoid penal charges. In case the minimum balance is not restored within a reasonable period, which shall not be less than one month from the date of notice of shortfall, penal charges may be recovered under intimation to the account holder, RBI said.

The RBI further directed banks to ensure that such penal charges are reasonable and not out of line with the average cost of providing the services. Also, they should ensure that the balance in the savings account does not turn into negative balance solely on account of levy of charges for non-maintenance of minimum balance. It also asked all banks to take immediate steps to update customer information. The RBI said banks should not take undue advantage of customer difficulty or inattention. Instead of levying penal charges for non-maintenance of minimum balance in ordinary savings bank accounts, banks should limit services available on such accounts to those available to basic savings bank deposit accounts and restore the services when the balances improve to the minimum required level.

Defaulting large borrowers are like freeloaders, says Dr. Raghuram Rajan

Dr. Rajan, said the RBI would continue to ensure lenders flag and deal with problematic loans quickly, given the dangers to the financial system should banks engage in 'ostrich-like' behaviour of 'hoping the problem will go away'. A major factor slowing credit flows to infrastructure projects has been the amount of bad loans on banks' books. Including restructured loans, stressed assets are estimated at ₹ 6 lakh crore ($97 billion), or nearly a tenth of total loans. "The RBI is exploring ways to allow banks more flexibility in restructuring," Dr. Rajan said in a speech at the Institute of Rural

Management. “This is a risk we are prepared to take if it allows more projects to be set on the track to recovery,'' he said, without giving details of measures being explored. Still, Dr. Rajan said the central bank would oppose any delay by banks to recognise bad loans.

About 45% of stressed loans have already gone sour. The remainder is in the 'restructured' category, which means the loans have problems but banks only need to set aside minimal reserves. From April 2015, new rules will abolish the 'restructured' category and prompt banks to chase customers for payment or set aside billions more reserves, once non-performing loans are recognised. “The fundamental lesson of every situation of banking stress in recent years across the world is to recognise and flag the problem loans quickly and deal with them,'' Dr. Rajan said. “So, regulatory forbearance, which is a euphemism for regulators collaborating with banks to hide problems and push them into the future, is a bad idea.'' Dr. Rajan also warned of the negative consequences of borrowers defaulting without suffering a financial hit as this raised the cost of loans across the financial system reiterating his previous comments. Dr. Rajan estimated that power loans were three percentage points more expensive than home loans due to banks' concerns about recovering debts from these types of borrowers.

Accusing some large borrowers of enjoying 'riskless capitalism', Dr. Rajan said such entities were responsible for making banks' credit profile unhealthy and these big clients were in effect becoming 'freeloaders' in the banking system. A large borrower, whose loan has turned bad, should not be “lionised as a captain of industry, but justly chastised as a freeloader on the hardworking people of this country,” the RBI Governor said. Asserting that he is not against risk-taking, Dr. Rajan said in cases of any stress, the promoter threatened to run an enterprise to the ground, asking the government, banks and regulators to make necessary concessions to keep it afloat. “We have to ask if our system of credit is healthy. Unfortunately, the answer is that it is not. The sanctity of the debt contract has been continuously eroded in recent years, not by the small borrower, but by the large borrower,” Dr. Rajan said. In scathing remarks on the misuse of the system by the large borrowers, Dr. Rajan said taxpayers and honest borrowers end up paying the price due to the excesses committed by large borrowers by way of losses to state-run banks and high pricing of loans.

“If the enterprise regains health, the promoter retains all the upside, forgetting the help he got from the government or the banks after all, banks should be happy they got

some of their money back! "What I am warning against is the uneven sharing of risks and returns in enterprise, against all contractual norms established the world over where promoters have a class of 'super' equity which retains all the upside in good times and very little of the downside in bad times," Dr. Rajan said.

National gene bank discovery to help develop wheat varieties

The National Bureau of Plant Genetic Resources (NBPGR), commonly known as the national gene bank, has identified around 45 accessions (a unique identifier given to a protein sequence) out of its collection of 20,000 accessions which have been found to be resilient to heat during grain formation period. This identification of traits of genes would help agricultural scientists developing new wheat varieties which can deal with fluctuations in temperature commonly witnessed in the north of India since the last few years.

Agricultural scientists associated with the characterisation drive say that the purpose is to help and provide large genetic variability which helps in quality seed development. These wheat accessions or germplasms, identified in the last three years, will soon be put into the national varietal development programme for creating new varieties of seeds for farmers. It takes about 5 -10 years after the identification of genes to develop a new variety. "Identified genes will play a crucial role in development of next generation wheat seed varieties which would withstand adverse impact of higher temperature being witnessed in the last few years in key growing areas," KC Bansal, director, NBPGR.

According to him, the national gene bank, has also identified around 50 wheat accessions which have the capacity to deal with various rust attacks commonly seen in the crop in northern India. "We have been dealing with the issue of yellow and stem rust in wheat crop for the last few years and the new varietal development programme would get support from genes resources identified by the national gene bank," said a senior scientist with the Directorate of Wheat Research (DWR), a premier research institute based in Karnal, Haryana.

The gene bank had launched the research programme on 'acquisition, evaluation and identification of climate resilient wheat and rice genetic resources for tolerance to heat, drought, and salt stresses' under the agriculture ministry's 'National Initiative on Climate Resilient Agriculture' started three years ago. The gene bank has prioritised 15 categories, including rice, wheat, maize, pearl millet, finger millet, chickpea, mustard, okra, brinjal and mango,

for gene preservation initiatives. At present, according to regulations, the germplasm held with the gene bank is only shared with state-owned research institutes.

Out of the total collection of germplasm at NBPGR, about 90,000 will be rice varieties. Others include wheat (20,000), vegetables (24,000), total oilseeds (55,000) and pulses (50,000). Threats to these crops are kept in a genebank in the form of seeds. The NBPGR has collected genes of around 1,500 crop species, including ornamental, oilseeds and medicinal. But the majority of them, which are critical to food and nutritional security, will be around 15-20. According to the agriculture ministry's data, the country's wheat production has increased from 72.7 million tonne in 2001-02 to 95.9 million tonne in 2013-14. However, in the last few years, because of wide fluctuation in temperature and appearance of yellow rust in northern India, agricultural scientists have expressed concern about sustaining wheat production in the long run.

Niti Aayog replaces Plan panel, PM to head body

The 65-year-old Planning Commission was, replaced by a new body, NITI Aayog that will be headed by the Prime Minister while all chief ministers will be on its governing council to evolve national development priorities with the involvement, of states. Unlike its predecessor, NITI Aayog (National Institution for Transforming India), will have all chief ministers and Lt. Governors on its Governing Council in the spirit of cooperative federalism Prime Minister Narendra Modi said on the new body.

The body will have a vice-chairperson and CEO in addition to five full-time members and two part time members, while four union ministers would serve as ex-officio members. Noted economist Arvind Panagariya is tipped to be first vice-chairman of the Niti Aayog. Modi in his tweet said, “A pro-people, pro-active and participative development agendas stressing on empowerment and equality is the guiding principle behind NITI Aayog. Through NITI Aayog, we bid farewell to a 'one size fits all' approach towards development. The body celebrates India's diversity and plurality”. The NITI Aayog, he hoped, will emerge as an active and important institution that will play a pivotal role in India's development journey in the years to come. It will provide key inputs on various policy matters.

According to a statement, the new body will form regional councils to address specific issues and contingencies impacting more than one state or a region. The regional councils will comprise the CMs and Lt. Governors in the region. These will be chaired by the

chairperson of the NITI Aayog or his nominee. The NITI Aayog will also have experts, specialists and practitioners with relevant domain knowledge as special invitees nominated by the Prime Minister. The two part time members of the new body would be from leading universities and research organisations. The body will serve as a think tank of the government as a directional and policy dynamo and would provide the governments at the Centre and in states with strategic and technical advice on key policy matters including economic issues of national and international importance, the official statement said.

Banks vulnerable to financial contagion: Reserve Bank

The Reserve Bank of India (RBI), warned markets against "accumulation of vulnerabilities" and "sudden and sharp overshooting in markets", as the weak global outlook may prolong easy money stance in most advanced economies (AEs). "Against the backdrop of low interest rates in AEs, portfolio flows to emerging market and developing economies have been robust, increasing the risk of reversals on possible adverse growth or financial market shocks, thus necessitating greater alertness," said RBI in its Financial Stability Report (Including Trend and Progress of banking in India 2013-14).

As of now, financial risk taking had not translated into commensurate economic risk taking, RBI added. On the domestic front, it said that macro-economic vulnerabilities had abated significantly in recent months on the back of improvement in growth outlook, fall in inflation, recovery in the external sector and political stability. However, the central bank noted that growth in the banking business and activity in primary capital markets remained subdued due to moderate investment intentions. "Sustaining the turnaround in business sentiment remains contingent on outcomes on the ground."

RBI said that the growth of the Indian banking sector moderated further during 2013-14. "Profitability declined on account of higher provisioning on banks' delinquent loans and lacklustre credit growth." The financial health of urban and rural co-operatives indicated divergent trends in terms of key indicators. While urban co-operative banks exhibited improved performance, "the performance of primary agriculture credit societies and long term rural credit co-operatives remained a matter of concern with a further increase in their losses coupled with deterioration in asset quality." While the asset size of the non-banking financial companies (non deposit taking-systemically

important) showed an expansion, asset quality deteriorated further during the period of review, said RBI.

The banking stability indicator suggested that overall risks to the banking sector remained unchanged during the first-half of 2014-15. In individual dimensions, though the liquidity position improved in the system, "concerns remain on account of deterioration in asset quality along with weakened soundness." The profitability dimension of the indicator showed an improvement but it remained sluggish. The stress tests suggested that the asset quality of banks might improve in the near future under expected positive developments in the macro-economic conditions and banks might also be able to meet expected losses with their existing levels of provisions. However, RBI said: "the asset quality of scheduled commercial banks may worsen from the current level if the macro-economic conditions deteriorate drastically, and banks are likely to fall short in terms of having sufficient provisions to meet expected losses under adverse macro-economic risk scenarios."

Analysis of the inter-connectedness indicated that the size of the inter-bank market in relation to total banking sector assets had been on a steady decline. However, contagion analysis with top five most connected banks revealed that the banking system could potentially lose significant portion (close to 50%) of its total Tier-I capital under the joint solvency-liquidity condition in the event of a particular bank triggering a contagion. The RBI also said that the banking sector, particularly the public sector banks, would require substantial capital to meet regulatory requirements with respect to additional capital buffers. "With the increased regulatory focus on segregating the cases of wilful defaults and ensuring the equity participation of promoters in the losses leading to defaults, there is a need for greater transparency in the process of carrying out a net economic value impact assessment of large Corporate Debt Restructuring (CDR) cases," it added. Another aspect that impinged upon the banks' asset quality was corporate leverage and its impact on banks' balance sheets, particularly 'double leveraging' through holding company structures and the pledging of shares by promoters.

Post offices to issue ATM-cum-debit cards for savings account holders

Post office savings bank accounts can now be operated through ATMs. The Centre has amended the Post Office Savings Bank General Rules accordingly following the Budget announcement in this regard. This facility, however, will be available

only in post offices that are on core banking solution (CBS) platform. A notification said: "In case of an account standing at any post office with a core banking solution platform in place, the Post office Savings Bank shall issue ATM or debit card to the account holder on payment of such fee as may be prescribed by the Central Government."

Currently, 676 post offices are on CBS. Four head post offices (Delhi, Mumbai, Kolkata and Chennai) have gone live on ATM. This entire project is part of the ₹4,909-crore IT modernisation project of the Department of Posts. The department aims to take the ATM network to 2,800 by 2015 end. The notification also mentioned that a savings account holder at a post office linked to the CBS platform will be allowed to deposit money in his or her account at "any other post office with CBS platform within the limits prescribed". Deposits can be made through the electronic mode as well. New rules also provide for giving a statement of account in lieu of the passbook, but only as an option to the customer. The IT project also aims to provide customer interaction through multiple channels such as call centres, internet, ATM, mobile banking and net banking for PO savings bank customers. It will provide an electronic and secure mode of money transfer, including doorstep delivery even in rural areas.

NITI Aayog will have a three-layer structure

'NITI Aayog', the body which replaces 'Yojana Aayog' (Planning Commission), will have a three-tier structure headed by the Prime Minister. The Centre issued a resolution highlighting 13-point objectives for the new body with focus on providing 'national agenda'. NITI stands for National Institutions for Transforming India. The body will have a Governing Council comprising State Chief Ministers and Lt. Governors of Union Territories, Regional Councils to address specific issues and contingencies impacting more than one State or a region, and full-time organisational framework headed by the Prime Minister. The three layers will be formed for a specified tenure.

According to an official release, the Prime Minister, in the new body, will be assisted by a Vice-Chairperson and full-time members. There will be two part-time members who will be selected from leading universities, research organisations and other relevant institutions in an ex-officio capacity. Part-time members will be appointed on a rotational basis. Four Union Ministers will be ex-officio members. There will also be a Chief Executive Officer (CEO) with a fixed tenure and in the rank of Secretary to the Government of India. The Regional Councils will be chaired by the Chairperson of the NITI Aayog, the Prime Minister,

or his nominee. Both General and Regional councils will have experts, specialists and practitioners with relevant domain knowledge as special invitees nominated by the Prime Minister.

NITI Aayog aims to foster cooperative federalism through structured support initiatives and mechanisms with the States on a continuous basis, recognising that strong States make a strong nation. In a crucial departure from its earlier avatar, the new body will adopt a 'Bottom Up' approach, where decisions will be taken at the local level and then endorsed at the Central level. This is also reflected in one of the approach which says, "To develop mechanisms to formulate credible plans at the village level and aggregate these progressively at higher levels of Government."

"The institution will serve as 'Think Tank' of the Government - a directional and policy dynamo," the resolution said. It will provide the Centre and States with relevant strategic and technical advice across the spectrum of key elements of policy. This includes matters of national and international interest on the economic front, dissemination of best practices from within the country as well as from other nations, the infusion of new policy ideas and specific issue-based support.

FAO official lauds T.N. model of managing irrigation tanks

The Tamil Nadu model of providing primacy to the views of farmers in the management of irrigation tanks has been lauded by an official of the Food and Agriculture Organisation (FAO), who is heading a team to review tank projects in India. Conventionally, the tank management has been governed by the water engineering-centric approach. But, in Tamil Nadu, "the focus is on farmers, their needs. And, that's the way it should move," says Jim Hancock, Natural Resources and Livelihoods Officer at the Investment Centre, Asia Pacific Service of the FAO. After observing the execution of the World Bank-funded Irrigated Agriculture Modernisation and Water-Bodies Restoration and Management Project (IAMWARM) in Kancheepuram and Villupuram districts, Mr. Hancock told that another feature that impressed him and his team was the way the existing institutions were working together, from the State down to the village, to address water issues.

In this context, he referred to the creation of single window information and knowledge centres at the community level, which were functioning as platforms for officials and farmers to discuss issues and find solutions. He called the facility a "very interesting innovation." As for the role of tanks in the southern States of the

country, he said: "The cultural, rural, dry southern India is centred on tanks." Pointing out that tanks had a wider purpose, he said they served not only the requirements of agriculture but also those of drinking water, sanitation, livestock, horticulture and fisheries. This was why they were important to the development of the States.

Asked to list the areas of improvements in tank management, Mr. Hancock said sustainability of water management, operation and maintenance of tanks was a matter of concern to many States of the country. As for tanks, there were several questions that needed answers. "What is the water balance? Where is water going? Who needs water? Eventually, you have to ask yourselves: should we have to allocate water for the urban sector and to the poorer and better-off users? To what degree, the community together with the government should fund the maintenance of a tank system?"

Private insurers may help farmers weather the storm

In a bid to protect farmers from erratic weather pattern, the government has invited private insurance companies, along with state-owned Agriculture Insurance Company of India (AIC), for providing various products relating to crop, weather and income insurance. From the last two decades or so only AIC, which is owned by four state-owned general insurance companies and Nabard, has been offering yield-based and weather-based crop insurance programmes. "Ten private general insurance companies are empanelled for implementation of crop insurance schemes for increasing coverage and create competition in crop insurance sector," an official with agriculture ministry said.

The key private sector insurance companies, which have started to offer crop or weather insurance products, include ICICI Lombard, HDFC Ergo, Iffco Tokio and Bajaj Allianz. "The private sector would also bring in many innovative insurance products for catering to the need of the farmers in the context of climate change," the official said. The official said around 30 million farmers out of 120 million have been covered under the National Agriculture Insurance Scheme (NAIS), which mainly covers yield losses. Sixty five crops and around 25% of the crop areas are covered under crop insurance. About 70% of these are accounted for by farmers who own less than four hectares and a majority of farmers had been provided insurance by AIC.

"Crop insurance is going to become even more important in future, considering increasing climatic variability. Unfortunately, despite insurance reaching almost

30 million farmers today, there is widespread dissatisfaction. We need to develop simple products that are scientifically valid, economically viable, transparent, and acceptable to most stakeholders," Pramod Aggarwal, regional programme leader, Research Programme on Climate Change, Agriculture and Food Security (CCAFS) platform, said.

Based on evaluation studies, the government had introduced National Crop Insurance Programme (NCIP) after merging Modified National Agricultural Insurance Scheme (MNAIS), Pilot Weather Based Crop Insurance Scheme (WBCIS) & Coconut Palm Insurance Scheme (CPIS) from Rabi 2013-14 season. The premium paid under NCIP is higher than the NAIS as the premium being charged is on actual basis and claim liability at present is on the insurance company. However, the official said premium under NCIP had been provided with upfront subsidy up to 75% in case of MNAIS and up to 50% under WBCIS. Besides the revamped programme would offer insurance cover to the farmers where historical data on the crops are not necessarily available, thus helping farmers in dealing with the associated risk. However, NAIS would continue for a couple of years before being entirely merged with NCIP which also offering income insurance to the farmers. NAIS is also available to farmers who have not taken bank loan and covers all food crops cereals, millets & pulses, oilseeds and some horticultural crops whose past yield data is available for adequate number of years. The premium varies between 1.5% to 3.5% of sum insured for food & oilseed crops and 10% premium subsidy is provided to small & marginal farmers.

The Comprehensive Crop Insurance Scheme (CCIS), introduced in 1985 by the Centre in collaboration with state governments, was linked to short-term crop credit, where all loans for notified crops in a specific area were compulsorily covered.

RBI allows banks to change base rate methodology

To provide lenders greater operational flexibility, the Reserve Bank of India (RBI) has allowed banks to review the base rate methodology after three years from date of its finalisation instead of the current periodicity of five years. Accordingly, banks can change their base rate methodology after completion of prescribed period with the approval of their board of directors or asset-liability committee (ALCO), the RBI said in a notification. "Banks will, however, not be allowed to change their methodology during the review cycle," it said. Base Rate is the minimum rate at which banks can extend loans. Further, banks should have a board-approved

policy delineating the components of spread charged to a customer. It should be ensured that any price differentiation is consistent with bank's credit pricing policy.

Banks want RBI to extend special classification deadline

Continued pressure on the asset quality front has prompted banks to request the Reserve Bank of India to extend the deadline for withdrawing the special asset classification benefit for all restructured loan accounts. The central bank last year said the special asset classification benefit will be withdrawn for all loan restructuring cases with effect from April 1, 2015.

Hitherto, the RBI allowed regulatory forbearance on asset classification of restructured accounts, whereby standard accounts were allowed to retain their asset classification and accounts classified as non-performing were allowed not to deteriorate (downgrade) further in asset classification on restructuring. With the economy not yet showing signs of a turnaround, bankers feel that withdrawal of the special asset classification benefit will lead to restructured loan accounts getting downgraded with effect from April 1, 2015, requiring banks to set aside more cash (provision) to pay for the losses anticipated in the future.

Currently, the provision requirement on restructured loan accounts is 5%. But come April 1, 2015, when the restructured loan accounts will get downgraded (to the non-performing asset or NPA category), the provision will go up to 15%. The increased provisioning will weigh on banks' profitability from the first quarter (April-June) of FY 2016 onwards. Hence, banks want the special asset classification benefit extended for a year, hoping that the restructured loan accounts can be nursed back to health during this period on expectations that the economy will improve.

According to the RBI's latest financial stability report, the gross non-performing advances (GNPAs) of scheduled commercial banks as a percentage of the total gross advances increased to 4.5% in September 2014 from 4.1% in March 2014.

Banks can up spread only if borrower's credit profile deteriorates: RBI

The RBI said the spread (or the mark up over the base rate) charged to an existing borrower by banks should not be increased except on account of deterioration in the credit risk profile of the customer or change in the tenor premium. What this means is that if the credit rating of an existing borrowing unit deteriorates, then, at the time of the annual renewal of loan limit, the spread charged over the base rate

will be increased. Otherwise, the interest rate remains unchanged.

In its additional guidelines on 'Interest Rates on Advances', the RBI also allowed banks to review the base rate methodology after three years from the date of its finalisation instead of the current periodicity of five years. This is to provide banks greater operational flexibility to them. Base rate is the minimum interest rate below which a bank will not lend. Any decision regarding change in spread on account of change in credit risk profile should be supported by a full-fledged risk profile review of the customer, the RBI said.

RBI issues norms for bank leverage ratio under Basel III

The Reserve Bank of India said its revised guidelines on the leverage ratio framework for banks will come into effect from April 1, 2015. The leverage ratio under the Basel III regulatory framework for banks is defined as their capital measure divided by their exposure measure, with this ratio expressed as a percentage. Capital measure for the leverage ratio is the Tier-1 capital and exposure measure is the sum of on-balance sheet exposures; derivative exposures; securities financing transaction exposures; and off- balance sheet items.

This ratio is calibrated to act as a credible supplementary measure to the risk based capital requirements and is intended to achieve two objectives. The first objective is to constrain the build-up of leverage in the banking sector to avoid destabilising deleveraging processes which can damage the broader financial system and the economy. The second objective is to reinforce the risk-based requirements with a simple, non-risk based "backstop" measure.

Currently, the banking system is operating at a leverage ratio of more than 4.5%. The final minimum leverage ratio will be stipulated taking into consideration the final rules prescribed by the Basel Committee by end-2017, the RBI said. In the run-up to December-end 2017, Reserve Bank will monitor individual banks against an indicative leverage ratio of 4.5%. Banks operating in India are required to make disclosure of the leverage ratio and its components from April 1, 2015 on a quarterly basis. The Basel III international regulatory framework for banks is a comprehensive set of reform measures, developed by the Basel Committee on Banking Supervision, to strengthen the regulation, supervision and risk management of the banking sector.

The charter of customers rights released by the RBI

RBI has released a charter of customer's rights and has advised the Indian Banks Association (IBA) and the Banking Codes and Standards Board of India (BCSBI) to formulate a 'Model Customer

Rights Policy' based on the charter's principles. These measures would ultimately strengthen the customer service framework.

In case a bank violates any of the rights as laid down by RBI, customers can approach the customer services division of the apex bank. "With this charter, the RBI will have legislative powers to act against errant banks," says a retired head of a large public sector bank. Here are the rights of customers as notified by the RBI that you should be aware of.

Right to Fair Treatment: This right prohibits banks from discriminating on grounds of gender, age, religion, caste and physical ability while offering products and services. Banks can continue to offer differential rates of interest or products to customers. "The financial services provider may, however, have certain special products which are designed for members of a target market group or may use defensible, commercially acceptable economic rationale for discriminating between customers," the central bank says.

Right to transparency, fair & honest dealing: You can expect language in bank documents to be simplified and transparent. The charter requires banks to ensure that all contracts are easily understood by the common person. The onus of sending out effective communication about products will rest with banks. Information on the product's price, customer's responsibilities and key risks will have to be clearly stated. At important terms and conditions should be clearly brought to the notice of the customer", the charter states.

Right to Suitability: Despite several regulations, complaints related to mis-selling continue to plague the distribution space. Lured by higher commissions, sales officials tend to push products without ascertaining their suitability for the customer. With this charter coming into force, such officials might find it difficult to palm off, say, market-linked insurance products to senior citizens. The charter has made it mandatory for banks to sell products after keeping in mind customers' needs, financial circumstances and understanding.

Right to Privacy: Banks are duty-bound to keep customers' personal information confidential, unless the disclosure is required by law or customers have given their consent. "Customers have the right to protection from all kinds of communications, electronic or otherwise, which infringe upon their privacy," the charter states. Banks cannot pass on your details to telemarketing companies or for cross-selling. "There have been instances where bank officials, on the basis of transaction details, have asked customers to route their investments through them. This is

not ethical," says Roongta.

Right to Redressal & Compensation: The charter makes banks accountable for their own products as well as those of third parties. They will no longer be able to wash their hands off the responsibility once the product is sold. Banks will have to communicate the policy for compensating mistakes on their part, lapses in conduct and non-performance or delays in performance. The redressal and compensation policy will have to state the rights of customer.

RBI advances deadline for providing services to unbanked villages

The Reserve Bank of India has advanced the deadline for banks to complete the process of providing banking services in unbanked villages (with population less than 2,000) to August 14, 2015, instead of March 2016. This move comes in view of the ongoing implementation of the Pradhan Mantri Jan Dhan Yojana (PMJDY), which is a national mission for financial inclusion. Phase I of PMJDY is being implemented through banks in a time-bound manner for completion by August 14, 2015.

The scheme seeks to ensure access to financial services such as banking/savings and deposit accounts, remittance, credit, insurance, pension in an affordable manner to the weaker sections and low-income groups. In 2012, the State-Level Bankers' Committees (SLBCs) were mandated to prepare a roadmap covering all unbanked villages of population less than 2,000 and notionally allot these villages to banks for providing banking services, in a time-bound manner.

The notional allotment was only intended to ensure that all villages have at least one banking outlet for providing banking services and does not deny or bar any other bank from operating in these areas based on the available business potential. While preparing the roadmap for this scheme through a combination of business correspondent (BCs) and branches, the RBI said it should be ensured that there is a brick-and-mortar branch to provide support to a cluster of BC units about 8-10 at a reasonable distance of 3-4 kilometres.

Economic survey to adopt Chitale model to ascertain state's irrigation growth

The Maharashtra economic survey for 2014-15 is going to adopt the new model recommended by water management expert Madhav Chitale to derive the irrigation growth in state. This would be a clear departure from the last 15 years where water resources department and ministry of revenue and agriculture often were seen at loggerheads giving out different statistics on increase in

irrigation in Maharashtra.

The committee has suggested multi-tier model for the collection of data from village levels to ministry to avoid distortion of facts. The new model would also enable the government to regulate the quantum of water diverted for non-agriculture purposes namely industries from the big dams. Instead of basing the irrigation potential on irrigation projects and water storage capacity alone, the new method stresses on field data collection based on use of water for agriculture through dams, wells and ponds.

In the economic survey for year 2013-14, the state government did not furnish the data on irrigation potential following sharp differences between ministry of agriculture and ministry of water resources. Chief Minister Devendra Fadnavis maintained, "The recommendations made by Chitale committee are already being implemented. We are going to adopt all the short term and long term suggestions that would go a long way in taking correctives steps in irrigation sector and addressing the problems of corruption."

The water resources ministry calculates the land under irrigation based on total number of project (dams, wells and ponds) and how much areas it can irrigate." The Chitale report has warned, "The construction of dams and water stored cannot be incorporated as growth in irrigation potential." It should be based on water taken from dam to the end users farmers (fields). Incomplete canals or problems of rehabilitation of villages have led to such issues of non-utility of dam water thus affecting the agriculture and farmers.

Changes in ARDBs

1) Shri M. Senthamil Selvan has assumed charge as Additional Registrar/Managing Director of the Tamil Nadu Coop. State Agri. & Rural Dev. Bank Ltd. w.e.f. 19th January 2015.

2) Shri D.B. Trivedi has assumed charge as Managing Director of the Gujarat State Coop. Agri. & Rural Dev. Bank Ltd. w.e.f. 27th January 2015.

3) Shri S.V.Lotlikar has assumed charge as Managing Director I/C of the Goa State Coop. Bank Ltd. w.e.f. 1st February 2015.

Poly mulching helps small tomato grower harvest more

Summer season is a time of worry for most farmers across the country since water becomes an important, and much sought after commodity. "Though water harvesting and conservation are being encouraged by the government, the number of farmers adopting it is still quite negligible in the country," says Dr. Sreenath Dixit, Zonal Project Director, ICAR, Hebbal, Bangalore. What do farmers who own small acres do? "Naturally we cannot expect them to dig a small pond to collect rainwater since it eats away into their cropping area. For such growers we have introduced the poly mulching technology. This method is already in existence and proven in some parts of the country. It has helped small farmers cultivate vegetables well," he says.

Mulching is an age old practice of mixing dried leaves, twigs, stalk etc. into the soil to improve its fertility condition and conserve moisture. It is common in organic cultivation methods. In modern conventional methods plastic sheets are being used. The sheets are laid on the field by a machine on top of the furrows and seedlings are planted in small holes made on the sheets. Plastic sheets have been found to conserve soil moisture because the water that gets evaporated from the soil in the open, condenses on the lower part of the sheet as small droplets and falls back into the soil. The Krishi Vigyan Kendra (KVK) under Indian Institute of Horticultural Research (IIHR, Bangalore) at Hirehalli, Tumkur, Karnataka, initiated demonstrations to popularise this practice in the region.

A small farmer, Saroja, from Deverayanapatna village in Tumkur taluk, with two acres, was encouraged to grow the tomato variety arkasamrat released by Indian Institute of Horticultural Research (IIHR) under this technology. The normal duration of this variety is 135-140 days only but due to the impact of polythene mulching, the crop period extended to 10-15 days more. The farmer harvested nearly 32 tonnes from an acre in 150 days and sold them at ₹10 per kg in the local market. She earned a gross profit of ₹3.25 lakhs in 150 days. Total cost of cultivation was ₹60,000 per acre and the farmer earned a net profit of ₹2.65 lakhs in five months."I used to grow only ragi and some paddy crops and was unable to get a profit from these due to lack of technical knowhow and labour scarcity. I happened to visit the KVK at Hirehalli and based on their advice, decided to grow arkasamrat tomato during summer," she says.

The tomato seedlings were grown on raised beds with poly mulch film laid with drip irrigation. A package

of practices like mulching was suggested which minimised the incidences of pests and viral diseases. Farmers from surrounding villages, on seeing her field, were quite impressed by this technology since it reduces water requirement, prevents moisture evaporation, and brings down pests and diseases. The fruits obtained are of better quality and colour, which fetch better price in the market, according to Dr. Loganandhan, programme co-ordinator, Hirehalli, KVK. The farmer was conferred the Best Progressive Farmer Award in Tomato by the Indian Council of Agricultural Research (ICAR) on the annual foundation day held at IIHR in Bangalore,

Kanjarai leaf spot management in banana

The disease is caused by a fungus *mycospharella musicola*. Occurrence of the disease is severe in Tiruchi, Tirunelveli, Kanyakumari, Tuticorin, Erode, Coimbatore, Theni and Dindigul districts of Tamil Nadu. The varieties susceptible to this disease are robusta, grosmichale, sandanavalai, nalipoovan, rasthali, karpooravali, monthan and grand naine. The infestation initiates as narrow spindle shaped light yellow or brown coloured streaks on the leaf lamina parallel to the veins.

The streaks enlarge into linear, oblong brown to black spots. The central portion becomes necrotic and greyish surrounded by a dark brown band which in turn is surrounded by a yellow halo. Several such spots coalesce to cause drying of entire leaves.This leads to the reduction of photosynthetic area which eventually reduces the yield.

Humid weather and rainfall favour the spread of the disease. The conidia of the fungus are carried by wind and rain water aiding to the spread of the disease. Fields without proper drainage are severely affected. The weed hosts help in the perpetuation and spread of the disease. Closer spacing, heavy weed or grasscover, frequent irrigation and failure to remove suckers increase the relative humidity in the plantation, favouring rapid build-up of the disease. Affected leaves should be removed immediately and destroyed. This helps in reducing the population of the fungus.

Depending on the severity of the disease three to four sprays with any one of the following fungicides viz., carbendazim at 1 gm per lit or propiconazole at 1 gm per lit or mancozeb at 2 gm per lit or chlorothalonil at 2 gm a lit at 20 days interval may be done. Wetting agents viz., teepol or sandovit at one ml / litre of water should be added to the fungicide before spray. Spraying on the lower surface of the leaves is effective for control of leaf spot disease.

A model unit shows how to benefit from dairying

Among various types of agriculture, dairy farming is often considered to be quite remunerative. Almost all veterinary institutes in the country keep harping on the relatively high income that a dairy unit can generate for a farmer. "But what they often fail to emphasise is that cattle rearing alone is not profitable. In fact merely having some milch cattle would prove disastrous for a farmer since the animals need green fodder and hay apart from the regular feeds and to provide this a farmer must have a large area (today, pasture lands are fast disappearing) in which he is able to grow these apart from other crops as well," says Dr. Sreenath Dikshit, Zonal Project Directorate, Indian Council of Agricultural Research (ICAR), Bangalore.

Merely having 1-2 acres and growing fodder in that along with other crops cannot prove financially viable. Mr. Sitaram Manjunath Hegde from Neernalli village in Uttara Kannada district, Karnataka owns about 15 hectares in which he grows several crops and also a dairy unit comprising 70 cross bred and 15 HF cows all managed scientifically. Banana is grown in six hectares and coconut in two hectares. In the rest he practises arecanut based multi storeyed cropping system, with black pepper and cocoa. The practices adopted in the farm are more scientific and less labour dependent than those in conventional farms, according to Dr. Sreenath. The areca plantation and dairy units are live models for agriculture students, farmers, extension officials and agriculture scientists in the region. The cattle shed is well planned with lime concrete flooring which facilitates easy cleaning. An underground drainage system is provided for draining urine and excess water directly to a biogas plant. Cow dung collection is done through a modified spade with rubber strap and carried in a trolley to the biogas plant. All cows are tied using an automatic chain system.

Washing of animals is done using high pressure water jet spray to remove ticks and dirt. No chemical pesticide is used to control ticks and other pests. Milking is done using a machine and power requirement for it is provided by the bio gas plant. The farmer has also established a fodder production unit and a fodder chopper (5hp capacity), a grinder and mixer unit. Hybrid Napier grass and fodder maize (African tall) varieties are grown in one hectare to meet the fodder requirement of the animals. Both green and dry fodder are chopped and fed to the animals along with supplement mineral mixture. The animals are vaccinated on time.

Since pineapple is grown commonly in the region unutilised pineapple fruit residues like the

crown and peel from local pineapple processing industries is used to prepare silage under the guidance of National Institute of Animal Nutrition and Physiology (NIANP), Bangalore. The silage is fed to the animals along with the other feed ingredients in the form of total mixed ration, replacing green fodder during summer. Underground drainage is provided to the areca nut garden for removal of excess water. The slurry from the biogas plant is filled in a specially designed steel tanker and moved to the garden for use as manure for the crops. Scientific methods of soil, moisture, and water and fertilizer management are followed based on frequent soil test reports.

Natural mulching is done to the areca nut trees with cocoa leaves. His farm is a popular place for fellow farmers for obtaining newer technical information, buying heifer cows, arecanut seeding, fodder root cuttings etc. The farmer has been conferred several awards by the state agriculture and horticulture departments for his work.

Farmers must start marketing their produce

Though natural or organic farming is nothing new in the country, the number of farmers who have started taking it up seriously has seen a positive rise in the last some years. Be it 10 acres or as little as two acres, the drive to do sustainable farming stems from the farmers' attitude. Escalating inputs costs, especially, are creating a mind-set among growers to try and see whether this method could help them cut down on expenses. If it does help, then they continue to do it, serving as guides for others desirous of doing the same, according to Dr. Vaidyanathan, Head, Oilseeds Research Institute, TNAU, Tindivanam, Tamil Nadu.

Mr. K. Somu is one such small farmer whose farm (3.40 acres) in Villipuram attracts several visitors every day from different parts of the state to see and experience personally the magic of this system. The progressive farmer is cultivating fodder crops like sorghum, bajra and trees for wood and bamboo (for preventing soil erosion) along the borders of his farm. The crops are grown in a three tier system. Tree crops like coconut, arecanut, oilpalm and different fruit trees are grown as main crops and in between them intercrops such as turmeric, pineapple, banana, papaya, curry leaf, amla, sweet lime and orange are grown. Creepers liker pepper and betelvine are planted around the coconut and arecanut trees.

Apart from these about 100 varieties of herbal and medicinal plants are also grown. All the crops are irrigated using drip, sprinkler and rain gun irrigation. Weed control is managed by using

natural mulches such as banana leaves, coconut leaves, newspapers etc and Pongam cake, castor and mahua cake are applied to the soil to protect the crops from soil born pest, disease and nematodes. Some of the produce from his farm are converted into value based products and seem to have a good market at his farm gate itself. "Farmers must change their mind that they are for just growing crops. The marketing world today is tough and competitive. People are on the lookout for good quality products and don't mind the expense on travel if they get a good product.

"I am easily able to market my products in my farm and in a separate organic outlet opened at the Government established Farmers market (Uzhavar Sandhai) in my area. My organic fruits like papaya and others are sold out in a day at the outlet and I get the money back the next day," he says. Along with him, about 100 farmers in the region have started a registered farmers' federation unit called Vedapuri Organic Farmers Federation to market their produce

"Though there is a notion that organic food is priced at a higher rate than others, a visit to the local rice retail shop would prove that in retail shops best quality raw rice grown conventionally is sold for anything between ₹45-55 depending on the area, location and size of the shop. Whereas, if you buy the same rice wholesale (75 kgs bag) from an organic farmer the cost per kg works out to be ₹50 a kg," says Mr. Somu. A farm must be an integration of different activities, according to Mr. Somu. Birds, animals, crops, fruit trees, honey bees etc. all have a role in food production. Honey bees especially are one of the main agents in aiding good yield especially for fruiting trees. "I have about 10 honey bee boxes and today at about two km from my farm you can see different wild flowering plants on both sides all because of these bees. Eliminating one or all of them and talking about growing food is like setting one's own house on fire," he says with a smile.

Mr. Somu is presently doing his IIIrd year B.F. Tech (Bachelor of Farm Technology) at the Open and Distance Learning (ODL) programme from TNAU.

Managing mealy bug menace in cotton

The occurrence of solenopsis mealy bug, *Phenacoccus solenopsis* on cotton was reported from Gujarat during 2004-2007. Since then, the insect has become a serious pest in cotton growing states in India. The yield loss due to this pest was estimated to be up to 50%. Even the Bt cotton fields were also reported to be heavily infested with this species of mealy bug. This mealy bug is favoured by dry weather and many records refer to heavy attacks following periods of

prolonged drought.

The mealy bug is cottony in appearance, soft bodied, oval shaped covered with white mealy wax. It feeds on young shoots and leaves. Affected plants appear sick and black, resulting in reduced fruiting capacity. Heavy infestations often kill the shoots completely. Clustering of mealy bugs is usually seen under surface of leaves as a thick mat with waxy secretion. Excess excretion of honey dews promotes the growth of sooty mould, interfering with photosynthesis. The mealy bug lays around 500 eggs from which the first instar called the crawlers emerge. They all move to suitable places in the plant, get fixed and start sucking the plant sap causing damage. Nymphal period lasts for about 15 days and the adults survive up to 35 days.

Management methods

- Maintain field sanitation. Remove alternate weed hosts.
- Collect and destroy the infested twigs and branches or even uproot the severely infested plants.
- Monitor the incidence regularly and look for crawler emergence.
- Dust with 2% methyl parathion. Spray profenofos 50EC, chlorpyrifos 20EC, quinalphos 25EC or dimethoate 30EC at 2ml/lit.
- Apply Neem oil 2%, Neem Seed Kernel Extract 5% or Fish oil rosin soap at 25g/litre of water. In nature, many lady bird beetles, green lacewing flies, parasitoids and entomopathogenic fungi effectively control this mealy bug.

Systematic approach to in-situ water harvesting assures irrigation

Fast changing climatic pattern, untimely rains and prolonged dry spells are creating problems for agriculture. "While not much change in the total annual rainfall is noticed across the country, the distribution becomes the problem, with more heavy rainy days and prolonged dry spells in several places. Rain water harvesting at the farm level is one of the best solutions today as crops need only soil moisture and not water for growth. An integrated approach for this will help rain-fed farmers to save their crops," says Dr. G. V. Ramanjaneyulu, Executive Director, and Centre for Sustainable Agriculture (CSA) Secunderabad, Andhra Pradesh.

It would do well for other farmers across the country to try and replicate the rainwater harvesting model of a small farmer, Mr. Subash Sharma from Yavatmal district, Maharashtra. Mr. Sharma has integrated several approaches to harvest most of the rain received on his farm. One of them is increasing the soil organic matter. The crop residue is converted into a compost called 'Kosanjeevani.' It is

made using one tonne of cow dung, half a tonne of tank silt, 50 kg oil cake and 25 kg jaggery solution composted for a month. This can be applied for two hectares and can limit moisture evaporation to about 30%. During summer, the field is ploughed and furrows (one foot depth) are made. When it rains the water stays back in each of the furrows and sinks into the soil. If there is heavy downpour the furrows are opened for the excess water to flow towards the lower end of the farm where a channel is dug to facilitate it to run into a trench. Any over flow from the trench leads to a farm pond. For every hectare the farmer has dug a small farm pond.

In addition to managing water and soil, appropriate cropping systems with shallow and deep root systems are important to use the available soil moisture judiciously. During previous season in the farm redgram and soybean were grown. Other cropping systems tried were red gram and bhendi, red gram and sesame. In case of delayed rains short duration crops like bajra, mung, or leafy vegetables like palak and mung were grown. Fruit trees are also grown on the farm or bunds to help reduce wind speed and provide dry leaf for biomass.

Lemon or citrus plants with 6 mt x 6 mt spacing or seethaphal with 4mt x 4 mt spacing between each plant is ideal for dry lands and space in between can be used for intercropping with annual food crops, according to Mr. Sharma. But the major problem is in planting and rearing the trees during the initial stages, especially for the first 2-3 years. A simple approach evolved by the farmer can help establish a tree to grow well using just 180 litres of water a year. About six inches distance from the sapling a plastic pipe of one foot length and three inches diameter is buried. Small pebbles are put into it and later the pipe is removed. When water is poured (on the pebbles) it goes directly to the root zone and help the saplings to survive. About two litres of water once every four days for two years will help the saplings to establish themselves and later the in situ water harvesting is sufficient for the trees to survive and give sustainable incomes.

Leaf eating caterpillar menace in greengram

Among all pulse crops greengram is frequently grown as short duration crop in kharif followed by rabi crops like jowar, wheat, bengalgram and safflower. It is quite a hardy crop grown on residual moisture. It is drought resistant and suitable for dry land farming. The crop plays an important role in sustaining soil fertility by improving soil physical properties and fixing atmospheric nitrogen.

The low yield of greengram in our country may be attributed to a wide variety of factors, among which the

ravage of insect pest is paramount. A number of insect pests belonging to different orders have been recorded on greengram from various parts of the world. Important pests of greengram are cut worm, stemfly, aphids, thrips, Bihar hairy caterpillar, tobacco caterpillar, gram caterpillar, hawk moth or leaf eating caterpillar and pod borer.

These pests occur almost regularly at different stages of the growth and cause heavy damage. Among these, leaf eating caterpillar has gained major pest status on greengram and other pulses in recent years. All the larval instars feed on the green foliage and defoliate greengram completely and cause more than 50 per cent crop damage.

Small bright bluish coloured eggs are laid individually on all parts of the plant. The eggs are short ovoid, slightly concave at one end and the surface is smooth and shiny. The fifth instar larva is very active and feeds voraciously on leaves including veins. Fully grown larvae stop feeding and pupate into the soil. Emergence of the adult usually occurs during night.

Summer ploughing exposes the pupal stage of the pest to natural predation. Hand pick grown up caterpillars during day as they hide in cracks and under the plant during day.

Spray insecticides like emamectin benzoate 5 SG at 0.25ml/l or spinosad 45 SC at 0.25ml/litre or lambda cyhalothrin 5 EC 1.00ml/litre or chlorpyriphos 20 EC at 2ml/litre for effective management of the pest.

C4 model for conserving native varieties

Cultivation of traditional crop varieties is decreasing day by day, the major reason being low productivity compared to the high yielding varieties (HYV). The only way to encourage farmers to grow these is to create a market for them and make consumers aware about the speciality and nutritional aspects of these crops.

"Take the case of Wayanad. There were about 105 traditional rice varieties cultivated here as per early records. But today this has dropped to 35 out of which less than 10 are now extensively cultivated in the district. "If the situation continues it will take only a few more years for the erosion of this vast genetic wealth," says Dr. Anil Kumar, Director, MSSRF, Kalpetta.

Accordingly the institute devised an approach called the C4 model, which was found to be highly suitable for conserving the traditional varieties. "To conserve an indigenous variety we have to ensure its cultivation, consumption and commerce. All these stages were addressed in the seed village programme developed by us," says Dr. Joseph John, scientist at the institute.

MSSRF team mobilised rice farmers from ten villages, clustered them into seed villages, mainly serving as seed, grain and gene banks. Over the past two years the institute worked on community mobilisation, clustering farmers in to groups, awareness generation on the importance of the traditional varieties, purity maintenance and management of seed and gene banks. Each of the seed villages had two to eight traditional varieties cultivated, conserved and consumed among its residents. To overcome the issue of seed contamination, two acres of paddy land were leased out and utilised for growing ten selected varieties like Chennellu, Chenthadi, Chomala, Jeerakasala, Gandakasala, Mullankaima, Thondi, Adukkan, Veliyan, Kalladiyaryan and the seeds were supplied to growers for cultivation.

The seeds thus produced were supplied to other farmers across the district and outside. Training was provided on purification techniques, seed and grain management, mechanisation etc. for helping the community in its efforts to conserve. Enquiries for seed availability were linked to the seed bank management committee at the village level which supplies the seeds at a premium rate fixed by the centralised unit of "seed care," a grass root institution (GRI) of traditional seed growers of Malabar.

Farmers could sell additional quantities of rice after consumption to traders for a better price. Previously, farmers in the seed villages used to sell traditional paddy seeds at ₹14/kg before the intervention. Now they sell at ₹35 40 /kg. Aromatic rice varieties are now being sold at ₹50/kg and enjoy a good demand among consumers. In a year, the farmers could sell two and half tones of traditional varieties and presently the area under traditional varieties is 71 acres since the major seed buyers are those who were cultivating hybrids.

The project intends to purify the seeds of traditional varieties consecutively for three generations, supply it to the villages and link them up with farmers and institutions interested in rice cultivation. This proves that only a good and ready market can fetch the traditional rice "cultivators a premium price for their produce and only a good price can encourage more farmers to

Rubber dam for sustainable production

Checkdams are mainly used for soil and water conservation in watersheds. In India, several types of these are being used for regulating water supply in watersheds which in turn help in assured water supply to vegetation. Generally check dams are made up of cement base and are inelastic in nature. To give more flexibility in release and control of water flow across the streams, research efforts

were made at the Directorate of Water Management, Bhubaneswar to fabricate rubber sheets instead of cement material.

As a result, five rubber dams were installed at different locations of Khurda district, Odisha. These are the first indigenous rubber dams in the country. As an innovative hydraulic structure, the rubber dam consists of four parts : i) a rubberised fabric dam body; ii) a concrete foundation; iii) a control room housing mechanical and electrical equipment, such as air blower/ water pump, automatic inflation and deflation mechanism; and iv) an inlet/outlet piping system. The dam height can be raised up to 1.5 m by filling water through inlet pipe (inflation mechanism) and it can be lowered to base level by releasing the water through outlet pipe (deflation mechanism).

Main advantages are better erosion and flood control during excess water flow. It also provides cushion as a reservoir for storing water during scanty rainfall and can be used during drought. The assured irrigation created by rubber dams helped in enhancing crop productivity at Baghamari and Chandeswar in Odisha.

The average productivity of rice in kharif season at Baghamari was enhanced from 2.87 tonnes/ha to 4.67 tonnes/ha. The average productivity of green gram in rabi season at Baghamari was enhanced from 0.63 tonnes/ha to 0.92 tonnes/ha and the productivity of sunflower and cucumber in rabi season are 0.84 tonnes/ha and 4.3 tonnes/ha respectively.

Efficient, labour-saving machine for harvesting and cleaning turmeric

Among various cash crops, turmeric has a potential market value all through the year since it is mainly used as a value added product. Erode is a turmeric cultivating hub in Tamil Nadu and almost all farmers in the region are growing this crop. A huge labour force is required for weeding, earthing, fertilizer application, harvesting and polishing. “If not harvested on time the crop gets affected by fungal infestation. And in many villages today sourcing manual labour remains a problem. For an acre, about 300 (110 male and 190 female) labourers are required. In engaging them, a farmer gets drained physically and economically,” says Dr. S. Saravanakumar, Agronomist, Myrada, Gobichettypalayam.

While this is the current scenario in the region, a small turmeric farmer Mr. P. Ramaraju, has developed a machine to harvest the crop on time. He worked on the idea for a year to design an efficient harvester. Accordingly, he designed a power tiller that requires 13 HP

power to run it. The machine consists of a shaft connected to small diggers, arm and shaker. While operating this machinery, the diggers pull out the turmeric clumps from the soil and loosen the earth with the help of the shaker.

The field capacity of this harvester was tested in different soil conditions and it was found that seven hours are required for harvesting one acre of turmeric. However, some preconditions are required such as the space between the rows must be 1.5-2 feet, the furrows must be lengthy and broad. It is best suited for fields installed with a drip irrigation system.

"Since turmeric is cultivated under a raised bed system, we thought some refinement is needed in order to deploy this machinery in different types of soil and methods of cultivation. Based on the farmer's feedback, we modified the machine with some more ideas from the farmer. This intervention has proved the efficiency of the harvester to the farmers through demonstrations and is documented," says Dr. Saravanakumar. "It is a labour-saving equipment and requires only one male and 15-20 women labourers to collect the harvested rhizomes from an acre whereas in manual harvesting 40 pairs of labourers may be required costing ₹14,000-16,000. By using this harvester one can save upto ₹7,000 9,000 per acre," says Mr. Ramaraju.

The machine consumes one litre of diesel an hour which a small farmer can easily afford. A special attachment also shakes the harvested rhizomes so that the soil on them drops to the field, leaving the rhizomes clear for collection. Like all machines, this harvester also needs to be serviced regularly. Unlike tractors, machines like these developed by small innovators face servicing problems. But Mr. Ramaraju has been offering suggestions and also visiting the places to service the machine. Farmers from Karnataka and Tamil Nadu have visited his farm to know about the field suitability of the machine. His innovation was recognised by the Indian Council of Agricultural Research, New Delhi and he was honoured as a 'Best Farmer Innovator' in 2010 during the national farm innovators meet.

New early maturing garlic variety

Generally garlic varieties developed by different organizations take about 130-270 days to attain physiological maturity. There is no variety available for growing during Kharif season having early maturity in India. The National Horticultural Research and Development Foundation (NHRDF) has recently identified a new garlic genotype "G-389" which can be harvested within 72-80 days during Kharif, late Kharif and 85-95 days in the Rabi

season, about 40-50 days earlier than other garlic varieties grown in India.

The new variety gives an average yield of 6-7 tonnes per hectare with good storage capacity. The variety is registered with National Bureau of Plant Genetic Resources, New Delhi. The day length for bulbing is 10-12 hours and it can be grown on any soil, but thrives better in fertile, well drained loam soils. About 500-700 kg of planting materials are required for planting in one hectare. Because of small cloves it is advisable to plant it at a spacing of 10 x 7.5 cm to get optimum bulb yield. About 25 tonnes of well decomposed organic manures, 100 kg Nitrogen, 50 kg phosphate and 50 kg potash per hectare through chemical fertilizers have been recommended. Use of zinc and boron and application of sulphur at 30-50 kg/ha also helps to improve yield and quality of bulbs. Drip irrigation can be used for high yield and quality bulbs.

Pendimethalin at 3.5 litre or oxiflurofen (goal) at 2.5 litre/ha + one hand weeding help control of broad leaves weeds. Irrigation should be stopped 15-20 days before harvesting as otherwise it can re-sprout and decrease yield. The crop is ready for harvesting when it turns light yellow or brown and shows signs of drying. Curing is an additional process of drying to remove excess moisture.

This wonder gel is helping farmers save water while multiplying yields

The gel, Pusa Hydrogel, a semi-synthetic super absorbent polymer, has been developed by the Indian Agriculture Research Institute (IARI). It is mixed with the soil on which the seeds are sown. The gel then absorbs water and expands to 300 times its original size. It sticks to the roots of the plants and when the soil moisture falls as the temperature rises, the gel sheds water to nourish the crop.

Pusa Hydrogel has been in use since 2012, and its benefits are now being reaped across the country. Extensive trials have established that Pusa is non-toxic and bio-degradable, said HS Gupta, Director of IARI. It increases plant yield by 10-25 per cent. Even ITC Ltd has reported encouraging results from its fields, he said. IARI has licensed the technology to six Indian companies.

Laxmi Lokkur, a farmer from the Udikeri village in Karnataka's Belgaum district, has been able to triple her yield over the past two years, despite the monsoon playing truant. The innovative farmer uses a polymer-based bio-degradable gel to 'irrigate' her 24-acre farm, where she grows vegetables, fruits and cereals. Lokkur, whose village is in a rain shadow area, told that before she started using the gel during the summer seasons, she cultivated only three to four acres of her farm due to water scarcity. Today, she uses up to 15 acres. Her cotton

production had shot up to 12 quintals per acre compared with her neighbours' 6-8 quintals. Jowar was at 8 quintals while other farmers got only 3-4 quintals. Similarly, she produced 8 quintals of wheat compared with the 4 quintals produced by others.

It works as an anti-drought mechanism and reduces the water requirement of plants. Typically, a farmer irrigates his field every four days for high value crops, but with the gel, he can irrigate the farm every eight days. "Farmers are able to defer irrigation cycles and hence use the water effectively. Due to use of Pusa, there is a 40 to 70% saving of water. It also reduces fertiliser application as it binds the fertiliser to the root, it reduces leaching of fertilisers," he said. The gel helps crops store water for a dry spell and aids farmers to cope with the increasingly unpredictable monsoon seasons.

Piggery unit provides extra income for farm women

In the agriculture sector, compared to cattle, goats, chicken or fish; the idea of pig rearing to supplement income has not been able to gain popularity. "Piggery is a promising source of generating income but probably the mindset among farmers that pigs are dirty by nature and smell bad could be a reason for many not opting for it," says Dr.Saju George, Programme Coordinator and Head, Krishi Vigyan Kendra, Indian Institute of Horticultural Research, Gonikoppal, Kodagu.

But Ms. Suchitra Surendra from Kodagu district, growing coffee based integrated farming system in her 2.5 acre land, was bold enough to try this venture and today the farmer is well known in the region as an expert in piggery and her pig rearing unit draws a number of visitors both farmers and scientists to interact and know more about her success. Initially, Ms. Surendra was growing only coffee, black pepper, coorg orange, cardamom and paddy. Slowly she entered into piggery enterprise after realising its potential.

She started the enterprise in 2010-11 with two pairs of exotic Yorkshire breed. During the same year she came in contact with the Gonikoppal KVK, in one of the off-campus training programmes conducted in her village. With guidance of the KVK staff, she increased the animal strength to 10 female and two male pigs of Yorkshire, Duroc and Hampshire breeds. But it was not a smooth flow for her as she regularly faced difficulties in managing the animals. Poor growth, low litters, early piglet mortality were some of the often recurring problems she faced. She started attending training programmes and was in regular touch with animal experts at the KVK. The advisory services from them helped her in the effective management of animal

health, production and sustainability of the unit.

Under a beneficiary demonstration programme she was given a pair of Duroc breed for up gradation of the local breed. During the year 2013 Ms. Surendra could sell more than 40 Yorkshire piglets at ₹4,000 a piglet, 80 Duroc piglets at ₹4,500 a piglet and about 2,000 kg of dressed pork at ₹150 a kg.The farmer earned a net profit of ₹5.3 lakh from her piggery component alone in two years. Piglets are now being sold to neighbouring farmers, members of several SHGs (Self Help Groups) and also to farmers from neighbouring districts. The animals are being housed in low-cost structures made of locally available stone pillar, stone slabs, etc. Apart from selling live piglets, she also supplies dressed pork for various social functions in the district.

For feeding the animals her entire family collects waste from hotels, resorts, hostels, vegetables, chicken stalls etc., boils it and adds lime and salt before feeding it to the animals to prevent food poisoning. "Each adult animal is given about 5-8 kg of hotel waste and 0.5 kg of balanced pig feed daily for optimum growth. The shed washes are collected in nearby pits located 500 ft away and are allowed to decompose for a year and later pumped as organic manure to the coffee and paddy fields," says Ms. Suchitra.

For hotel waste collection she spends about ₹1 per kg of waste as transport and collection charges a day. By this practice, she is able to save the major expenditure towards the piggery feed cost and thereby she is able to get more profit compared to other livestock enterprises. The hotels are also able to dispose of the food waste in an environment-friendly way.Her vast practical experience in the field of piggery enterprise is being effectively utilised by KVK and other line departments during the farmers' training, seminars and Krishi Melas for the benefit of others interested in taking this up as a vocation. Ms. Surendra was conferred the award of Best Woman Piggery Entrepreneur-2011-12 by the University of Agricultural Sciences (UAS), Bengaluru.

Management of yellow mosaic virus in greengram

Important diseases of greengram are root rot, wilt, leaf spot, powdery mildew, bacterial leaf spot, leaf curl, leaf crinkle and yellow mosaic virus. Among these, yellow mosaic virus (YMV) is a major observed disease in pulses during recent years. It is the most destructive disease during all seasons. It results in heavy crop loss from 50 to 70%, especially if the disease occurs in the early stages of crop growth. It affects crops like blackgram, soyabean and other pulse crops too.

Initially small yellow patches or spots appear on the young leaves. Slowly the area of yellow

discoloration increases and the entire leaf may turn yellow. Infected leaves show alternating green and yellow patches. Yellow leaves turn slowly dry and wither. Infected plants mature late. Flower and pod production get reduced. Pods in the infected plants are small size, turn yellow and get distorted. Early infection causes death of the plant before seed set.

Infection causes reduction in plant yield and quality of grains. Diseased plants have stunted growth. This disease is transmitted by whitefly. Seeds are to be treated with insecticides like carbosulfon at 30gm or monocrotophos at 5ml per one kg seed before sowing. Follow crop rotation and maintain soil health management. Grow suitable region wise resistant varieties. Use seeds collected from disease-free plants.

Control measures:

_ Infected plants should be removed.

_ Remove and destroy disease-affected leaves/plants from crop fields to avoid secondary spread.

_ Destroy host weeds. Intercrop with non-host crops like sorghum, pearl millet and maize.

_ Control of white fly by spraying insecticides viz., dimethoate 0.03% or monocrotophos 1.6% or metasystox (0.1%) or triazophos 1.25 ml/lt. at the initial stage of disease proves effective.

_ If the disease is not controlled, apply second spray at an interval of 7-10 days.

_ Foliar sprays of methyl demeton 2ml/lt. also control the vector spread.

Management of nematode in mulberry

Continuous cultivation of mulberry in the same field may favour the survival and multiplication of nematodes causing an infestation called nematodiasis. The infestation occurs throughout the year and is more prevalent in sandy soils under irrigated conditions causing crop loss up to 15%. Severely affected mulberry plants are stunted in growth with marginal chlorosis and necrosis of leaves.

Underground symptoms are the formation of knots/galls on the roots. Nematode infection hampers the uptake and translocation of water and minerals from the soil. The infestation spreads primarily through contaminated soil, farm implements and run-off irrigation. Infected saplings, cultivation of other susceptible crops along with mulberry and growth of some susceptible weeds in and around the mulberry gardens act as secondary sources of infection. The nematode infestation can be reduced by deep digging /ploughing to a depth of 30-40 cm during summer. Always use nematode-free saplings for new

plantation. Disinfect the farm implements either with 5% formalin solution or dip in boiling water for 5-10 minutes before use. Plant marigold as intercrop in between mulberry rows. Apply neem oil cake at the rate of 2 mt/ha/yr in four split doses. Apply furadan (Carbofuran 3 G) at 40 kg/ha/yr in four split doses within 40-45 days. Fumigate the soil with Durofume (Ethylene dibromide + Methyl bromide, 1:1) at 9 ml/mt.

Mix one kg of bionema with 24 kg neem oil cake and 200 kg FYM (sufficient for 1,000 plants) and store the mixture under the shade for about one week by adding 30-32 litres of water. Apply the mixture at 200 g/plant around the exposed roots (three times/year at an interval of four months) Bionema has no residual toxicity on silkworms.

Water harvesting ensures livelihood security for Dalit farmers

Villupuram is one of the most backward districts in Tamil Nadu. Major crops cultivated there are paddy, onion, pulses, millets, sugarcane, casuarina and groundnut, using water from tanks and open wells. The open wells belong to small and marginal farmers and have been abandoned for a long time due to heavy siltation and damaged walls resulting in poor storage and ground water recharge. The district receives the least amount of rainfall during the north east monsoon season.Most of the farmers who did not have access to water moved to growing eucalyptus and casuarina. Those who continued with their cultivation could grow only a single crop in a year.

"What was more disturbing and challenging was that women started working as daily farm labour instead of farming in their own fields and men started moving towards cities for non-farm jobs. At this juncture MSSRF initiated a Community Managed Bio industrial Watershed project in Vanur and Milam block of this region in 2007," says Dr. R.S. Shanthakumar Hopper, Director, Ecotechnology, M.S.Swaminathan Research Foundation (MSSRF).

The project successfully mobilised the community and with their participation and financial contributions was able to rejuvenate major water bodies. One such water tank in Karasanur village of Vanur Block was desilted. The tank is surrounded by 12 open wells on which 33 dalit, small and marginal farmers are dependent for their farming activities. Hindustan Petroleum Corporation Limited (HPCL), as part of the programme came forward to support this.

The project contribution was ₹1 lakh for each well and the community contribution was ₹25,000 per well. The well renovation was done in two parts one is carrying out deepening by desilting to increase the water

availability and groundwater recharge; and the other is steining wall (well wall) construction to prevent soil erosion and silting. The fund was initially transferred to a water user group to ensure accountability and transparency.

A three- member committee monitored the activities and released the funds based on the activities completed. "We didn't have money to contribute and it took six months to save ₹25,000 and 60% of our members mortgaged their jewels and sold their goats and contributed for wells renovation. Now I am earning ₹60,000 by cultivating three crops a year and have got back my mortgaged jewels, ensured better education for my children, the entire family is now engaged in agriculture activities and there is no migration," says Ms. Kalyani, one of the beneficiaries.

About 33 small and marginal farmers were trained in water use efficiency, crop diversification, participatory technology development (PTD) of crops like onion, paddy, groundnut and pulses through farmers field schools. "Each family was provided with a soil health card to monitor and implement the required nutrients. The land belonging to the 33 farm families are in one place, which makes it convenient for them to practise Integrated Pest Management (IPM) interventions. "They are also share holders in the Nallamur Farmer Producer Organisation, which provides them support services like credit, certified seeds, marketing support etc," explains Dr. Hopper.

New Sigappi paddy variety creating interest

Cauvery delta region, considered to be the granary of Tamil Nadu, is prone to many natural calamities like uncertain monsoon rains, periodical floods etc. Under these circumstances, a new rice variety named "Sigappi" has been developed by researchers at Annamalai University to get better yields under submerged conditions. It is 150-154 days under irrigated condition and is ideally suited for samba (kharif) season in Tamil Nadu.

"With the North East Monsoon affecting the livelihoods of small and medium farmers of Cuddalore, Nagapattinam, Tiruvarur and Thanjavur districts, this semi dwarf, erect, and nonlodging variety gives higher productivity of 3.4 tonnes per hectare even if fields get submerged in water during monsoon for 10-12 days continuously," says Dr. R. M. Kathiresan, Professor, Department of Agronomy, Faculty of Agriculture, Annamalai University.

Being similar to the traditional popular variety called Ponmani, released nearly a decade back, the Sigappi variety has white coloured short and bold grains, is best suited for making idli and dosa and

fetches a good price. It is also found to be resistant to leaf folder, stem borer and moderately susceptible to green leaf hopper, brown spot, Rice Tungro disease and rice blast, according to him. Though most of the rice varieties generally withstand partial submergence for prolonged duration, complete submergence is intolerable for more than a day or two. It also gives a straw yield of six tonnes per hectare, on an average, and the straw remains unaffected even after ten days of complete submergence under water. The package of practices for cultivation is again similar to any long duration samba variety, with a seed rate of 30 kg / hectare, spacing. The rice was distributed free of cost to farmers in delta regions under different schemes implemented by the University. This has resulted in farmers exchanging the seeds among themselves thereby increasing the area under its cultivation.

The International Rice Research Institute recorded its appreciation to the University for the Release of this new variety. It could also be a suitable variety for consideration under new seed subsidy scheme, if released by State Variety Release Committee. "Sigappi would certainly serve the best interest of Cauvery delta farmers as it protects their livelihood and economic interests at times of natural calamities," says Dr.Kathiresan. Especially, in villages like Keelathirukallipalai of tsunami affected parangipettai block this variety has made a significant farm impact.

Previously, local varieties grown there did not produce better yield, after the tsunami so many switched over to this variety and they observed this variety to be better. From an acre the farmers have been able to harvest 2 tonnes under normal conditions. In case of flash floods they can get 1.2 to 1.5 tonnes of grain from an acre, whereas from other varieties, less than one tonne alone could be expected. In Thalaignayiru and Vattakudi villages of Vedaranyam in Nagapattinam district, the Sigappi variety is being tried under direct sowing conditions. It is also a perfect choice for integrated rice farming designs such as paddy, fish and poultry integration.

Nutrient deficiencies in mulberry

Mulberry crops demand heavy fertilizer inputs. Sixteen elements are required for mulberry growth. Three of the elements carbon, hydrogen and oxygen are provided by air and water. In the soil, plant roots absorb the remaining 13 elements nitrogen (N), phosphorous (P), potassium (K), calcium (Ca), sulphur (S), magnesium (Mg), manganese (Mn), zinc (Zn), boron (B), copper (Cu), iron (Fe), molybdenum (Mo), and chlorine (Cl). Nutrient deficiencies result in reduced shoot growth, leaf size, chlorosis/necrosis of leaf and

retarded growth of terminal buds.

Sometimes these symptoms are usually the results of poorly drained soils, over or under irrigation, root diseases, plant pests, or other factors. In these cases, adding fertilizer does not correct the real problem and may contribute to new ones. Generally the diagnosis of nutrient deficiencies in mulberry is through visual symptoms, soil analysis and leaf analysis. Leaf analysis is a quantitative method for diagnosing nutrient deficiencies in mulberry and is considered reliable when compared to other two methods, as there is a strong correlation between the analysis and the actual nutrient status of the plant.

A multi nutrient formulation has been developed called Poshan, which contains all the necessary nutrients in a balanced and readily available form for healthy growth of mulberry, and is recommended as foliar spray. One litre of Poshan diluted in 140 litres of water and sprayed for an acre of mulberry garden on 25th to 30th days after pruning can correct these nutrient deficiencies. Poshan provides nutrients for faster utilisation and recovery of deficiencies than the soil application of fertilizers. It corrects the physiological disorders caused due to deficiencies of both macro and micro nutrients and helps to develop resistance against pest and diseases.

Growing forty traditional varieties in less than two acres

What is it that makes a small farmer opt for growing and preserving several native paddy varieties when finding a good market for normal crops is proving to be a Herculean task? “Probably it is the innate interest to preserve and protect the local biodiversity that spurs some to get into these type of activities. It is a fact that getting a good price for traditional varieties is still not easy in the country because among consumers several don't know the existence of such varieties and marketing people who buy them don't know there,” says Dr. Joseph John, scientist, M.S. Swaminathan Research Foundation (MSSRF).

But inspite of all these odds Mr. Cheruvayal Raman, a tribal farmer in Wayanad cultivates about 40 varieties of traditional paddy native to Wayanad in his 1.5 acres. “I shun modern implements like the tractor or threshing machines. Seeds contain the life of nature. We should treat them with extreme care. If we use machines to remove the paddy grains from the harvested straw then the seeds get broken so I use sticks to thrash the straw for separating the seeds,” he says.

Selected seeds are dried for a week in the open and stored in traditional vessels called Thumba. By this method the seeds can be preserved for two years without losing their dormancy, according to Dr. K.P. Smitha, Senior Scientist, Agriculture & Natural Resource at

the institute. Before sowing, the seeds are soaked in water for 12 hours to improve their germination. When soaked, the well dried seeds start absorbing the water. Later they are taken out and covered with banana or papaya leaves and a weight is placed on the top. By this method the seeds sprout in one day and are taken to be planted in the main field in the next 2-3 days.

The growing time of seedlings is directly related with the longevity of rice varieties, according to Mr. Raman. The field is ploughed well. Cow dung and dried leaves are added to the field and thoroughly mixed with the soil and left undisturbed for about for ten days. During this time the dung and leaves would have composed well thus becoming nutritious food for the several million beneficial microorganisms in the soil. After this the germinated seedlings are transplanted to the main field.

"I follow the biodynamic system of planting. In this system, farmers follow the lunar pattern for land preparation, sowing, harvesting etc and fullmoon days are considered ideal for planting since on that day rodents like rats remain in their burrows do not dig out the sown seeds," he explains. Only organic cultivation practices are followed by him and a native cow is being managed in the cattle shed for the continuous supply of cow dung and urine. Tillering after 20 days and irrigation are the two requirements needed for the growth of traditional varieties. The rice varieties of Wayanad do not need tedious attention or chemical fertilizers and pesticides for growth. There is usually no pest or disease incidence noticed in them.

The seeds are given free of cost to interested farmers on the condition that they have to return it in double the amount next year. Every year Mr. Raman distributes about 150 kg seeds of 30 varieties to 250 farmers and interested persons across the country. In fact there are people like Mr. Cheruvayal otherwise the traditional varieties of Wayanad would have been long lost to the common people, according to Dr.Smitha.

Managing thrips menace in garlic

Garlic is widely cultivated in Utter Pradesh, Haryana, Punjab, Madhya Pradesh, Gujarat, Rajasthan, Orissa and Maharashtra. The crop, like others, is infested with several pests among which onion thrips is a major one. Both nymphs and adults suck the leaf sap and cause injury to the crop. They remain in dense clusters at bottom of leaves and whorls and feed by lacerating the tissues and sucking the oozing cell sap.

The infestation results in a spotted appearance on the leaves, subsequently turning into silver coloured blotches. The leaf tips fade and the basal portions get blighted and distorted from tip downwards and finally the plant dries up.

Infested plants yield less by small sized bulbs. Adults are slender, yellowish brown and measure about 1mm in length with narrow fringed wings. Eggs are laid singly in tender leaves by making slits with sharp ovipositors by the females. A single female lays 40-50 eggs which hatch after 4-9 days. The entire life cycle is completed in 11-21 days. There are more than ten generations per year. The pest occurs on garlic from November to May and migrates to other crops from June.

Management

Varieties with open type growth and circular leaf structure are not preferred by the pest. Tolerant varieties of garlic viz. G-2, G-19, LCG-1, Ooty-1 can be grown. High doses of nitrogenous fertilizers and close planting should be avoided. Clean cultivation, regular hoeing and flooding of infested field will check the pest population. Insect predators like green lacewing fly and tiny ladybird beetles check the population of this pest in nature. Spraying of insecticides at rate of (10 thrips/plant) is advised. Application of monocrotophos 0.036%, formothion 0.025%,dimethoate 0.03%, profenofos or Malathion 0.05%, methyl demeton 0.025%, carbaryl 0.1% or phorate 10G at 10kg/hectare can help.

Water conservation methods come to a small farmer's rescue

Appiyampatti, a small hamlet in Dindugal district of Tamil Nadu, is one among the several villages in the state which has been facing a severe drought for the past over five years. Even during such a critical phase when several farmers left farming and started moving out in search of alternative work Mr. V. Chellamutu remained anchored in the village to continue with agriculture in his six acres since there was no other choice for him.

It was practically a losing battle and he was deliberating to sell off his lands when he happened to interact with the experts at the Centre for Improved Rural Health and Environmental Protection (CIRHEP) at Nilakottai. "When I explained my predicament to them they assured me of better times and visited my farm and designed it in such a way that when it rains during the monsoon not a drop goes waste," he says. "The problem was not something unique to the farmer. In fact the entire region was facing such a situation. "We thought of guiding the farmer and we were hopeful that others in the region would adopt the same measures," says Mr. M. Mohan, Chief Functionary, CIRHEP.

For a start the institute studied the rainfall pattern in the region and found that during monsoon, sudden heavy downpours were common in the area. Such sudden and heavy rains tend to wash off the fertile top soil. This adversely affected land fertility and the moisture holding capacity of the soil. Due to runoff, moisture in the

soil was only available for a limited period which was not enough for the crops to grow. The institute took up the responsibility of constructing trench bunds in the farmer's field with the support of village watershed committee. "The trench helps in harvesting the rainwater and conserves moisture for a longer period. Soil erosion is also arrested when there is a heavy downpour," explains Mr. Mohan. A well recharge pit was also dug for harvesting the rains and recharging the ground water. Recharge pits were known to retain the soil moisture for two months even during summer, according to Mr. Mohan.

In addition, field bunds were also constructed around the field. These bunds helped in conserving the rain water and preventing soil run to the nearby stream. It is advisable to grow grass on these bunds since the roots of the grass help to hold the soil tightly and prevent it from being washed away when it rains heavily. The farmer was advised to take up mixed farming where food crops and fodder crops are cultivated on the same farm land. This ensures the harvest of at least a single crop even during drought years and ensures green fodder for his four mulch cows. The dung from the animals is used as organic manure for the soil and also for generating gas for the two bio gas units installed under the project."I remember how I had to sink a bore well to nearly 1,200 feet in search of water and was unsuccessful but all this changed from 2013 when our region received copious rain and all these water conservation techniques have made my life a little greener," smiles the farmer.

Several new schemes for fisheries sector

National Fisheries Development Board (NFDB) is implementing various production oriented schemes for enhancement of fish production and productivity. To increase fish production and productivity in reservoirs, a massive fish seed stocking programme was taken up in 21.15 lakh hectares of water spread area in 21 States. Considering the need for promotion of hygienic markets, the board is focusing on developing hygienic markets across the country. For promotion of fish marketing and consumption, modernisation and construction of 252 fish markets were taken up.

NFDB is addressing the serious weak links in the supply chain by providing fishermen with 1214 mobile fish vending vehicles with ice-boxes so that they can earn more by reaching markets faster and the fish are also delivered in better condition. To meet the quality standards stipulated by the European Union and other importing countries, assistance was extended for modernisation of 21 fishing harbours and 31 fish landing centres. Considering the

scope for development of ornamental fisheries in India by involving rural beneficiaries, especially women self-help groups, NFDB has launched initiatives by implementing different schemes. Several families and women self-help groups are earning a livelihood through ornamental fish culture. NFDB has launched schemes for setting up of ornamental units such as backyard hatcheries, medium scale ornamental fish breeding units, integrated ornamental fish breeding units and aquarium fabrication units with 50% subsidy.

The board has established four model fish dressing centres, 30 solar fish drying units and platforms and has provided solar operated deep freezers to fisher women to ensure hygienic and better quality fish is made available to consumers. Training to fishermen on hygienic handling of fish, solar fish drying and value addition is being imparted. These pro-active measures aim bring a significant improvement in handling, preservation and marketing of fish in addition to increase in production.

Better profit margin for fish growers in Bihar

Fish farming is an important and fast growing sector in Bihar. The state has immense natural aquatic resources in the forms of ponds and tanks where quality fish seed are required for good fish production. "The gap existing between demand and supply of fish seed provide huge opportunities for unemployed youth to invest in fish seed production sector of aquaculture" says Dr. Tun Tun Singh, fisheries extension officer, office of Deputy Director, fisheries, Darbhanga, Bihar.

Mr. Yogi Sahani in Jagdishpur village, Darbhanga, was attracted to venture in fish seed business because of a high profit margin in Northeastern states. Initially he used to buy fish spawns from Naihati, Kolkata, and other local fish seed producers from Bihar. Today Mr. Sahani's hatchery unit generates a gross income of ₹50 lakh a year from sale of carp spawns, fry and fingerlings (different stages in fish growth) alone.

A family of nine members with three acres of agricultural land and 0.5 acre pond, Mr. Sahani could barely meet the basic needs of his family about 10 years back. Dr.Tun Tun Singh, fisheries extension officer during a routine village tour, met him and advised him to start a Hapa breeding pond to raise fish spawns at very low cost. Hapa breeding is a low cost technique to produce different fish spawns in a captive net inside the pond. From 2006 till 2008 Mr. Sahani took a two acre pond on an annual lease and did the same.

In three years he was able to earn ₹5 lakh which raised his confidence to venture into establishing a carp

seed hatchery unit. In 2009, the fisheries department officials helped him in establishing the unit in his three acre land. Initially the farmer invested ₹7 lakh out of which ₹5 lakh was from his own saving and ₹2 lakh was borrowed from several private moneylenders at exorbitant interest rate of 5% a month. The hatchery was named Kailash Matshya hatchery.

A project report was prepared and a loan of ₹15 lakh was sanctioned from a nationalised bank. The loan amount was used for constructing some more carp hatchery units. The unit over a period of time improved from producing about 12 million fries to gradually 20 million fries in three acres. Keeping in view of the growing demand for fingerlings Mr. Sahani outsourced a 50 acre pond from a private pond owner. Presently he has 26 ponds in 53.5 acre area under his supervision.

The fish farmer also got a subsidy of ₹3 lakh for the project from the State govt. and was conferred the Best farmer award in 2012 by the Bihar Agriculture University. "My gross income in 2013-14 was over ₹50 lakh. I earned ₹25 lakh as a net profit. I have repaid all bank and private loans within two years," says Mr. Sahani.

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