

LAND BANK JOURNAL

VOLUME 58 • SEPT. 2018 • ISSUE II



NATIONAL CO-OPERATIVE AGRICULTURE AND
RURAL DEVELOPMENT BANKS' FEDERATION LTD.

Always in the Fore front



Credit needs are plenty

We are catering the cross-section... Agriculture, Non-Farm, Housing, Education, Kisan Credit Card Scheme, Swarojgar Credit Card Scheme, Gold Pledge, Jewel Purchase, Traders Loan, Consumer Loan, Farm tourist ventures...

Launching shortly: Monthly Saving Scheme

Moderate and transparent interest rates • reasonable and acceptable conditions

Accepting deposits at attractive rate of interest.

Rendering services through 75 PCARD Banks all over Kerala

Solomon Alex
President

E. Devadasan, IAS
Managing Director



**KERALA STATE CO-OPERATIVE AGRICULTURAL
AND RURAL DEVELOPMENT BANK**

Ph: 0471-2460595, Thiruvananthapuram - 695 001.

Web: www.keralalandbank.org E-mail: headoffice@keralalandbank.org, ho.cardbank@gmail.com

LAND BANK JOURNAL (QUARTERLY)

Managing Editor
K. K. RAVINDRAN

SUBSCRIPTION RATES

Annual

₹60/- (For Members)
₹200/- (For Others)

Price per copy

₹15/- (For Member)
₹50/- (For Others)

Contents

Cooperatives have the potential to revive agriculture 03
and make it sustainable: Vice President

Leveraging Co-operatives for 05
Disadvantaged Sections
K.K. Ravindran

Surangas : Indigenous Water Harvesting 07
Practice for Climate Adaption
V. Suresh and Dr. Sohan Premi

The Cooperative And Commercial Banks 09
And Social Security Deposit Schemes
Dr. Jimut Bahan Dutta

Sustainable Crop Production Intensification for 12
Smallholder Agriculture in India
K L Prabhakar

मछली पालन में रोजगार की संभावनाएं 17
डॉ. नीरज कुमार गौतम

भारत सरकार की पशुपालन से संबंधित 27
कुछ महत्वपूर्ण कल्याणकारी योजनाएं
डा. राम निवास और चारू शर्मा

30 News
& Notes

42 Agricultural
News

Published by

National Co-operative Agriculture and
Rural Development Banks' Federation Ltd.
701, BSEL TECH PARK, 7th Floor, A-Wing,
Opp. Railway Station, Vashi, Navi Mumbai-400 703

Phone No. (022) 27814114, 27814226, 27814426
E-mail : nafcard.org@gmail.com
Website : www.nafcard.org

Printed by:
ACHSA PRINTERS
Shop No. 39, Maruti Paradise, Sector - 15,
CBD Belapur, Navi Mumbai - 400 614.
Tel.: 27571209 / 27571210

*The opinions/views expressed in the Land Bank Journal are
not necessarily the official views of the National Cooperative
Agriculture & Rural Development Banks' Federation.*

The Working Group on Enhancing the Share of Long Term Cooperative Credit Structure (LTCCS) in investment credit constituted by the Federation under the chairmanship of Shri Y.C. Nanda (Ex. Chairman, NABARD) has recently submitted its report. The Working Group observed that the contributions of LTCCS comprising of Agriculture & Rural Development Banks (ARDBs) at state and primary levels were quite significant in the post independent era in improving the productivity of land especially through development of minor irrigation and facilitating farm mechanisation in the 60s and 70s and that they were effectively the only agency for providing investment credit to farmers. However, in spite of growing scope and market for investment credit, the market share of ARDBs in the total flow of investment credit was drastically declining since late 90s. According to the Working Group, the design of the structure as a non resource based lender dealing in a single product has become a major constraint in their growth and viable working. Further, the structure suffered huge financial losses in implementing directed credit programmes and debt waiver schemes of Central & State Govts. Even though Vaidyanathan Task Force II recommended a revival package for institutions in LTCCS consisting of recapitalisation and reforms the same has not been implemented so far. At present ARDBs are not performing to their full potential in meeting the growing demand for credit from their members mainly due to shortage of long term resources for lending. The Working Group felt that ARDBs need to improve their performance and strengthen their financial position for increasing borrowing capacity from NABARD and other agencies as well as from the market. The Working Group also felt that NABARD may relook its refinance policies particularly regarding govt guarantee. The condition of govt guarantee has become a serious constraint due to ceiling on guarantees that can be issued by State Govts. The Working Group in this context suggested NABARD to consider introducing an additional scheme of refinance without govt guarantee, against the security of unencumbered standard assets of ARDBs which may also be linked to the rating of SCARDBs as per criteria for risk assessment, audit classification etc. The Working Group expects that this new refinance product if introduced would encourage ARDBs to augment internal resources and also help in reducing their reliance on

State Govts and will in due course help NABARD to completely do away with State Govt guarantee for refinance. The Working Group holds the view that the ultimate solution to the design deficiencies of the structure which restrict its ability to raise resources and fully meet the diverse credit needs of their members is conversion of these institutions into full-fledged banks as suggested by Jagdish Kapoor Task Force which was also endorsed by Vaidyanathan Task Force II. Vaidyanathan Task Force II suggested that the banking regulator may consider giving banking licence to institutions within the LTCCS which fulfil the conditions necessary for the same. However, RBI has not announced a policy or prescribed necessary conditions for giving banking licence to SCARDBs so far. The Working Group recommends that it would be in the fitness of things if RBI evolves a policy and prescribe conditions necessary for obtaining banking licence by SCARDBs, as recommended by Vaidyanathan Task Force II. As per the provisions of BR Act 1949, only a State cooperative Bank or a District Cooperative Bank notified as the principal cooperative society in any state or at the district respectively or a primary cooperative bank is eligible to apply for banking licence. Since SCARDBs are not principal cooperative societies at state or district level they are eligible to be licensed only as primary cooperative banks. At present only unitary SCARDBs having only individuals as their members fall in the category of primary societies. The federal SCARDBs, therefore, have to consider converting themselves to unitary structure in order to be treated as primary societies.

However, the structural reforms including conversion into full-fledged banks involve policy decisions by RBI and stakeholders including NABARD and State Govts which may be set as a medium term goal. In the meantime, SCARDBs need to enhance their preparedness for these reforms. Deposit mobilisation, recovery and NPA management, technology adoption/upgradation and human resources are suggested to be the key areas of focus for SCARDBs in this context.

K K. Ravindran

Managing Editor



Cooperatives have the potential to revive agriculture and make it sustainable: Vice President

Increased women's' participation will strengthen cooperative movement: VP Transparency, accountability crucial for an effective cooperative system: VP Work for the welfare of farmers; provide credit at a reasonable rate of interest: VP tells cooperative Delivers the 19th Vaikunth Bhai Mehta Memorial Lecture

The Vice President of India, Shri M. Venkaiah Naidu has said that cooperatives have the potential to revive agriculture and make it sustainable. He was delivering the 19th Vaikunth Bhai Mehta Memorial Lecture organized by National Cooperative Union of India (NCUI), here today. The Minister of State for Agriculture and Farmers Welfare, Shri Gajendra Singh Shekhawat and other dignitaries were present on the occasion.

Following is the text of Vice President's address:

"I am glad to be with all of you today to deliver this year's Vaikunth Bhai Mehta Memorial Lecture being organized by National Cooperative Union of India (NCUI).

On this occasion, I am happy to see various eminent cooperators and dignitaries who are present on the occasion of this event. I welcome the initiative of NCUI to organize this Lecture in the memory of a cooperative leader who was fully dedicated to the principles and values of cooperatives. His pioneering contribution to the growth of cooperative movement, particularly education and training is acknowledged by all. In 1953 he was appointed Chairman of the All India Khadi and Village Industries Board. He had been a member of the Bombay Province Banking Inquiry Committee (1929), Textile Labour Inquiry Committee (1939-40), Textile Inquiry Commission (1953-54) and Chairman, Commission on Agricultural Co-operative Credit (1959). We are also aware of the valuable contribution made by him when he was the Finance Minister of Maharashtra. A devoted Gandhian, Vaikunthbhai was more interested in the Mahatma's constructive activities than in politics. He accepted the Finance Ministership in 1947 only after personal pressure was brought upon him by Gandhiji and Sardar Patel. He spun daily and wore only Khadi. His one hobby was reading and he built up a rich library of his own. He was a man of genuine humility who abhorred publicity of any kind. His life provides an excellent example of quiet dedicated service to the nation in the fields of co-operative movement and village industries.

I pay my respects to this illustrious son of our great country.

The concept of cooperation has inherent strength in its principles and values.

The principles and values provide a unique character to a cooperative organization which is not found in a private enterprise. They not only help a cooperative to sustain its business, but also create social harmony in the society by bringing people together irrespective of caste, creed or any other distinction.

Cooperatives are socio-economic organizations which have community service as the essential ethos, and are not merely driven by profit motive. They are primarily meant to help the poor sections of the society.

Agriculture plays an important role in our national economy and livelihood of more than 55% population of our country is dependent on agriculture and allied activities.

As per the recent data published by the International Cooperative Alliance in the 'World Cooperative Monitor' among the 300 largest cooperatives in the world, about 30% are found in the agriculture and food industry sector.

Agricultural cooperatives throughout the world have played a significant role in organizing the small farmers and it is worth noting that these small farmers are responsible for 80% of the world food production.

Keeping in view the strategy of Government's Seven Point Agenda for doubling farmers income by 2022, the agricultural cooperatives can play a vital role in educating the farmers to reduce the cost of cultivation through balanced use of fertilizer, improve water-use efficiency, establish more warehouse to avoid distress sale of produce, link with National E-market (e-NAM), emphasize value addition and encourage farmers to take up other allied activities like poultry, beekeeping, fisheries etc.

In the recent years, after globalization of economy the cooperative movement has been facing many problems. The Indian cooperative movement, the world's largest movement, has its own inherent strength and weakness. With more than 8 lakh cooperatives, the cooperatives have significant presence in all the areas of socio-economic activities.



Dairy cooperatives have ushered in milk revolution in the country. AMUL has become a household name. The big institutions like IFFCO, KRIBHCO, AMUL, etc. are the big success stories in cooperative sector. Besides, there are a large number of cooperatives at the state level, like urban cooperative banks, primary agriculture cooperative societies, housing, fishery and other forms of cooperatives which are making untiring efforts to improve the socio-economic condition of the people in the rural areas.

At grass-root level, the impact of cooperative sector has a big role in bridging the urban-rural divide and creating opportunities for income generation.

Sisters and brothers,

I am a son of a farmer from a small village. Having strong background in agriculture, I am aware of the problems of the farmers. It is a pity that the farmers are still at the mercy of moneylenders, despite the presence of a large number of agricultural cooperatives. We need to strengthen cooperatives so that they can work for the welfare of the farmers and give them credit at the time they need at a reasonable rate of interest.

I am pleased that the present government is committed to encourage the cooperative movement. We have an example in case of NAFED where Govt. has given a guarantee to a tune of Rs. 40000 crores.

The cooperatives for their sustainable existence and to serve the members better, have to diversify their operations in new areas like honeybee production, seaweed farming, etc. The cooperatives should also train the farmers in the right use of fertilizers, and also train them in new technologies related to agricultural farming.

The cooperatives through their wide network in the rural areas have won the trust of the farmers more than any other institution. Various schemes of the government like Jan Dhan Yojana, Pradhan Mantri Fasal Bima Yojana, Pradhan Mantri Krishi Sinchai Yojana, Mudra Scheme provide a good opportunity for cooperatives to collaborate with the government and reap multiple benefits. The cooperative sector has immense professional manpower spread across the country, huge infrastructure of its own, and it has strong community roots in the rural areas. In the times to come, I feel cooperatives need to find mutual synergies with the public and private sector so as to explore new avenues of resource generation. At present, we talk only of public-private partnership. The third element of cooperatives must be aligned with this, so that we have a public-private-

cooperative partnership which can provide a new model of development having wide relevance for the farming community in the villages.

I find tremendous opportunities for cooperatives in solving the problem of unemployment, more particularly in the rural areas where the poor lack skills. So, skilling the rural population through cooperatives can be a big leap forward. This is in accordance with the current government's emphasis on skill development. Many of the cooperatives like NCUI, NCDC, IFFCO, etc. have their projects and programmes in the rural areas. So making these programmes focus on skill generation can not only prepare the rural youth to take up employment, but also provide them opportunities for becoming good entrepreneurs.

India has set a goal of establishing 100 smart cities in different States. To achieve this task the services of labour & contract cooperative societies such as Uralungal Labour Contract and Construction Society need be engaged in modern and high-tech infrastructure development and such models of organized labour cooperative societies can be replicated in other proposed cities.

As mentioned earlier, the contribution of Vaikunth Bhai Mehta to the cause of cooperative education and training was significant. This is very relevant in the current times when the cooperatives need to professionalize their functioning through effective training.

Cooperative training must not only be imparted to employees in cooperatives, but also extend beyond cooperatives, to children in schools, colleges, universities, technical and professional institutions, and also for those who want to form cooperatives, but who are not aware of the various modalities, and requirements.

Since "Cooperation" is a state subject and cooperatives are participatory and people-based organizations, the cooperative movement needs to be strengthened by the states.

Today, the use of digital technology has been transforming governance banking and businesses. The Cooperatives must also fully utilize the power of technology in their functioning.

I am glad that the Government of India has given a substantial budgetary support to computerize more than 63000 Primary Agriculture Cooperatives (PACS). PACs are the most important cooperative societies serving the farmers in rural areas. So strengthening the PACS through application of appropriate technology is indeed the need of the hour.

Continued to Page No. 16

LEVERAGING CO-OPERATIVES FOR DISADVANTAGED SECTIONS

K.K. Ravindran*

I was part of the Co-operative Delegation of NCUI which visited Mauritius during 8-11 August 2018. Contrary to expectations, our four day visit to the island nation unfolded the picture of a vibrant cooperative movement which is growing from strength to strength and readying itself to change the life of its people, especially disadvantaged sections in the society.

Mauritius is a small island nation with a population of just about 1.3 lakhs and land area of 2040 sq km including the area of Cargados Carajos, Rodrigues and Agalega islands which are also part of Mauritius Republic. Situated in Indian Ocean about 2000 km off the eastern coast of Africa, these islands remained uninhabited till Europeans came to know about their suitability for sugarcane cultivation in the early 17th century. Though Mauritius as a nation doesn't have a long history, the century old cooperative movement of the country is probably the oldest in the African region. Sugarcane cultivation and marketing, vegetable production, marketing, fishing, livestock breeding and dairying, public transport (mainly bus transport), savings and credit unions, consumer retail, handicraft and food processing are the major sectors in which co-operative enterprises have strong presence. Cooperatives have a sizeable share in vegetable production and sugarcane cultivation and bus transport system at the national level.

Mauritius government is committed to the growth of the movement by ensuring a congenial policy environment. The Mauritius Cooperative Act 2005 is a progressive legislation recognising the autonomy and independence of cooperatives and their functioning based on co-operative principles.

The Indian cooperative delegation to Mauritius had a busy schedule starting with a meeting with Mr. Soomilduth Bholah, Minister of Business Enterprise and Cooperatives in the afternoon on the day of arrival. An MoU was signed on the occasion between NCUI and Mauritius Cooperative Alliance for mutual collaboration in the area of human resources development in cooperatives.

The second day started with the visit to Mauritius Livestock Marketing Cooperative Federation which is engaged in promoting dairying in Mauritius.

*Managing Director, National Cooperative Agriculture & Rural Development Banks' Federation Ltd., Navi Mumbai, India.

The Federation is also collecting, processing and marketing milk from primary dairy cooperatives. Domestic production of milk in Mauritius is only 5% of the total requirement. Practically, Mauritius depends entirely on imports from Australia and New Zealand for meeting the demand for milk powder and other dairy products.

The main hurdle in increasing domestic milk production is shortage of quality cows. Dairying based on imported cows is not viable because of high cost and adaptation problems of exotic breeds to local conditions. The priority of the Federation is to increase domestic milk production so that the dependence on imports can be gradually reduced.

Mauritian Government also recognizes the economic importance of dairying in terms of employment and income generation apart from reducing import bills.

This however is not an easy task. In the first place, supply of quality cows should be increased through local breeding. Extension services are almost non-existing. Though there are a few veterinary hospitals, they are mainly meant for pet animals and not for livestock care. Similarly, small holder farmers have to be trained in homestead dairying as dairying is not a traditional activity in Mauritius.

The Federation also has to provide extension services and strengthen its network of societies for collection of milk and transferring to pasturing facilities and also should set up logistics for marketing. The Federation is working on addressing these challenges with the active support of the government.

Our next visit during the day was to the bio-fertilizer factory jointly run by the Mauritius Cooperative Agricultural Federation and the Mauritius Chemical Fertilizer Industry. The market for bio-fertilizer is growing very fast with increasing demand for organic food in Mauritius. This plant consists of fermentation facilities for growing micro-organisms which are used in farms for augmenting the availability of natural nutrients that can be easily assimilated by plants. This venture is a fine example of a successful cooperative-corporate partnership.

In the afternoon on the second day, the delegation attended the inaugural function of National Cooperative College of Mauritius. The College has excellent infrastructure with a good academic environment as well as facilities for skill



development of members of cooperatives apart from training employees and leaders as well as offering academic courses in cooperatives. The College was inaugurated by Mr. Pravind Jugnauth, Prime Minister of Mauritius, in the presence of a large gathering of co-operators across the country. The visiting delegation had an informal meeting with Hon'ble Prime Minister on the sidelines of the event.

On our third day in the island, we visited Mauritius Agricultural Marketing Cooperative Society in Belle Mare situated at the other end of the island. The members of this cooperative are smallholder farmers in the area who are doing cultivation on land allotted by the Govt on lease. Each farmer is allotted half an acre land at an annual rent of Mauritius ₹ 1200 (Indian ₹ 2400 approx.).

Onion is the main crop cultivated by the members. The cooperative procures and supplies inputs to the members and also arranges marketing of the produce without involving intermediaries. An important activity undertaken by the cooperative is developing collective irrigation system for the farms of their members. The second visit on the day was to a fishermen cooperative society in the same area which basically is a retail outlet of the fish brought by its members.

One remarkable feature of cooperative development in Mauritius is the active involvement of government machinery in supporting the cooperatives with the least interference in their internal affairs. The cooperatives are also allowed to partner with private enterprises for mutual advantage instead of competing from a position of disadvantage. Though cooperatives have a long history in the country, its potential for economic and social advancement of disadvantaged sections doesn't appear to have been made use of in the past as extensively as in recent years.

On our day of departure we visited 'Apravasighat' in Port Louis which is a must see place for any visitors to Mauritius from India. It gives a glimpse of history of Mauritians of Indian

origin who are mostly Hindus by faith and also the majority ethnic group in the country. The first generation Indian migrants came here as workers in sugarcane plantations. Sugarcane plantations owned by Europeans in Mauritius faced acute shortage of labour after Britain abolished slave labour in 1833. This triggered large scale recruitment of young people from British India as workers in Mauritius since 1834. The total number of Indians who left for Port Louis in Mauritius from Calcutta, Chennai and Bombay ports in primitive steam ships in the next few decades were more than 2.5 lakhs. They came on a 5 year contract on salary and other terms which were lucrative enough to take the risk of undertaking the ordeal of two weeks sailing, in some cases with their entire family, through rough seas to an unknown territory. But after arrival they soon realized that the promises of good wages and living in the contract were only for luring them and never meant to be fulfilled. European Planters treated them more like their erstwhile slaves than dignified workers. Though the contract was only for 5 years, they had to remain there forever. The heritage sites consisting of the jetty where ships carrying early migrant workers from India landed and a number of small nearby buildings which housed them till their immigration and recruitment formalities were completed are now part of Apravasi Ghat. The sufferings of these first generation migrants from India portrayed here, will make any visitor from India emotionally distressed.

This note on our visit to Mauritius will not be complete without a special mention about the warm welcome and generous hospitality extended to the delegation by the Ministry of Business Enterprises and Co-operatives and Mauritian Cooperative Alliance and expressing our sincere gratitude to the team of officers from the Ministry, who coordinated our programme in Mauritius, especially Mrs. Darshini, who accompanied us throughout the programme.

SURANGAS: INDIENOUS WATER HARVESTING PRACTICE FOR CLIMATE ADAPTION

Dr. Jayasree Vaidyanathan*

Surangas, the unique tunnels and traditional water harvesting structures mostly found in Kasargod district in Northern Kerala are gaining attention, in spite of being in the verge of dying.

Water has been harvested in India since ages, with our ancestors perfecting the art of water management. Our traditional water harvesting structures demonstrate the people's inventiveness at its best. Many indigenous water harvesting practices existed in ancient India specific to the eco-regions and culture. Surangas or the "tunnel wells" are one such traditional water harvesting system still existing in practice. They are prominent in the Northern Kerala and in some parts of Southern Dakshin Kannada district in India that is used to provide reliable water supply for human settlements and for irrigation especially for people living in the valley region of Western Ghats. Being an indigenous technological practice, it is not much protuberant and is relatively less known. They are relatively cheaper, effective, eco-friendly and sustainable water technology used in these regions for a very long time. Despite their decline, they continue to be a lifeline for a large number of farmers in Kasargod, who depend on Surangas to meet their drinking water needs.

While the exact origin of Surangas is not known, the history of Surangas can be traced back to 1900-1940 CE. Surangas are not too old in origin and oldest of them has been probably used for less than a century. They resemble the ancient water structure used in Mesopotamia several years ago and a similar in appearance to Qantas that are used in rural areas of Iran. This technology later spread to Egypt, Persia (now Iran) and India. Most of the Surangas in the area were constructed during the 1950s. Statistics show that, there are altogether nearly 5000 Surangas in Kasargod district of Kerala and some parts of Dakshin Kannada district of Karnataka. Though they combat the increasing demands of water needs of local community, Surangas are facing extinction with the advent of bore wells and pumps.

Surangas are natural selection for sloppy areas. They possess attractive colour of the Suranga walls comes from

the laterite soil. The walls have an ornamental texture. They are constructed as single or interconnected multiple ones. They are man-made excavations across a hillock or under the depth of an existing well, where water from top to bottom of the hill is captured in porous soil. Surangas are constructed in two ways: 1) dug in the hillocks with the help of galvanized pipes in a horizontal direction, from where the water percolates out. They are known as "horizontal bore" and are called as addaboru in Kannada and 2) horizontally dug at the bottom of the wells or ponds which are tunnel like structures as high as the height of a man, from where the water percolates out and collects into a water tank. The horizontal bore is successful in areas where the vertical bore wells do not go well (Nair, 2016). The second type may sometimes have branches. They start from well and convey water to the desired points. Usually excavated through hard laterite soil formations which promote water seepage, they are collected in reservoir made of mud known as Madhaka, just outside the Suranga. Then they are channelled and used for household purposes as well as agriculture.



Picture courtesy: Open source

The region comprising Kasargod district in North Kerala and adjacent part of Dakshin Kannada in Karnataka, experience ample rainfall, face acute water shortage as it is not possible to store them because of geographical peculiarities. The landscape of this part of Western Ghats is characterized by undulating upland topography that produces relatively small but steep sloping hills. In this region, the soil formation is such that it helps to tap subterranean water that makes digging of open wells arduous and expensive task. The complex geological formation features and interaction of water and its flow below the surface of the earth creates big subsurface holes especially in the valley portion of the hilly areas which act as natural Surangas in these areas.

*National Institute of Advanced Studies, Bengaluru



A typical Suranga inside a well at a residence in Kasargod district

The practice of constructing multiple Surangas on land holding is also very common. Generally, a Suranga is dug by people living in downhill where gravity brings the water out. The vital aspect of digging Surangas is the identification of water. Even today, no modern scientific and geological techniques are used during construction of Surangas and few rely on conventional water dowsing techniques. Water source identification is a specialized task and by intelligent guesstimating that villagers select the location, usually decided taking into account slope, elevation, and growth of some specific plants such as *Vateria indica*, *Ficus virens*, and *Macaranga indica*, termite mound and texture of the soil. These indicators suggest a nearby phreatic water table that is most suitable for construction of Surangas. A typical Suranga is about 250 meters in length and width of 40-50 meters, size sufficient enough for a medium sized person to move inside. These tunnels are either rectangular or dome shaped. Distance to be traversed horizontally to obtain water from the aquifer is much less than the vertical distance in the case of open well. Surangas are cut across the prevailing ground water table in area. They are generally dug during summer months in order to avoid collapse of the soil and water springs from all the three sides as well as bottom that fill Surangas with water. The flow of water is pooled just before entrance by building a small earthen dam. The water is then conveyed through a small diameter plastic pipe either into a farm pond or directly into an underground farm pond. Water inside Surangas is relatively colder and purer as they seep through hills and also because of insulating capacity of these structures. Peculiar structure of Surangas makes their excavation rather difficult and need expertise labourers and could be done only a very slow pace and would take generations to complete. Once Surangas are

excavated, it does not require any further maintenance.



Picture courtesy: Open source

Being pure than normal water and more reliable and cheaper than bore wells, this conventional system is still most preferred in these region. Of late, digging of Surangas is falling not only because of more prevalent bore wells, but also due to many other factors such as paucity of skilled labourers, time and risk involved while digging and also people getting prompted by other income-generating activities. Kasargod is facing a dearth of labourers with the technical knowledge to undertake the challenging job and has become a dying skill though it has not come to a grinding halt.

In the wake of climate change induced declining water supply, we need to relook at the traditional and local water harvesting systems used by the community which are not only economical but also suit to local lifestyles. This will enable them to minimize the adverse impact of climate change on increasing water availability. They play a major role in conserving our resources more judiciously compared to mega schemes such as river water diversion. Traditional methods provide very simple, age-old time-tested solutions to water scarcity problems that farmers have been facing in the recent years. However, institutions that have nurtured these water harvesting structures seem to have lost interest and there are very few people who have the necessary skills to build these structures. There is an urgent need to create awareness on the value of these traditional water harvesting structures. That are not only far more sustainable in the long run than bore wells, but carry with them the remnants of the age-old wisdom passed on from generation to generation, of working along with nature, not by harnessing it, but by understanding and using resources wisely and with great respect. Neglect of this valuable indigenous knowledge, deserves to be protected and passed on to future generations.



THE COOPERATIVE AND COMMERCIAL BANKS AND SOCIAL SECURITY DEPOSIT SCHEMES

*Dr. Jimut Bahan Dutta

PRESENT SCENARIO

The Bank Deposit Schemes of the Cooperative Banks, Public Sector Banks and Private Sector Banks are mostly conventional, stereo-type and repetitive in nature. Seldom, there is any appraisal or performance review of the Deposit Schemes and feed back about their utility or usefulness to the customers. The Banks are important organizations and their missions are well laid. The main functions of the Banks are to provide banking and financial services to the people and extend loans and advances for trades, commerce, industries and economic development. The bulk of the resources of the Banks come from the customers and the public. The Banks are dependent on the public for lending, investments and use of their services. They live on support and patronages of the People and the Govt. and they cannot exist without them. The Banks are assigned special responsibility and they are responsible for discharging this diligently and honestly.

The globalization of the Country's economy and the continued financial sector reforms have brought in a sea change in our Banking system and the economy. The Country has progressed enormously and the income and savings propensity of the people have also been increased astoundingly. Millions of our young and middle-aged citizens employed in the Public, Private and Cooperative Sectors organizations are earning handsome salaries every month, but they do not have Pension or retiring facilities like the Govt. Servants. They are yearning and frantically searching for suitable Deposit schemes from the Banks to save for their future and live in peace on their own financial strength in the golden days and without becoming burden to the Govt. and the Society.

CHALLENGES BEFORE THE BANKS

Now-a-days, there is no scarcity of resources in the Country and plenty of public deposits are available in the market. The Banks can easily mobilize them and bring to the banking fold, deploy in the Country's economic development, trades and commerce and social businesses. This will help the Banks as well as the people in numerous ways. Both the Cooperative and Commercial Banks have huge retail outlets and they are

spread all over the Country and set up for serving the people.. They have no problem to reach out to the masses, do roaring business and be at their service.

The Banks have no dearth of skilled, competent and capable manpower and so also in regard to technology. What is lacking is that they do not like to leave their comfort zone and undertake the trouble of making innovation in banking products and schemes. There is a huge demand for fresh and new deposit schemes from the public. The Banks need to come out to help them and display their schemes and service products in prominent places for convenience of the public.

As CEO of two State Coop. Banks in the NER for about two decades and interaction with the SHGs, JLGs and the general people in the post superannuation, I have come across about the demands for different kind of deposit schemes from the people. Keeping this in mind, an attempt is made here to suggest few innovative Deposit Schemes for our Banking fraternity and hope these will be useful to them and the prospective customers:

1. PENSION DEPOSIT SCHEME (PDS)

Monthly Pension Deposit Scheme is very important Scheme. The people trust the Banks and feel safe to park their hard earned savings with them. There is a huge demand for Pension Deposit Schemes. The Customers want to save fixed amount every month for a fixed period of time and on the maturity of the accounts to **get back the matured values in monthly instalment like Monthly Pensions** over a period of time as specified at the time of opening of the account.

The Pension Deposit Scheme will be immensely beneficial to the Banks with assured flow of long term resources from the customers on regular basis. They will also have huge long-term matured funds available with them for investment and lending for long periods and earn higher interest income.

The tenure of Pension Deposit Accounts may be for 5 yrs. to 20 years with renewal facility within the maximum period of the Scheme. The Pension Deposit scheme will be similar to the Banks' existing Double Benefit Deposit (DBD) or Re-investment Plan (RIP) and there will be no extra cost or additional work to the Banks.

* Former MD MCAB & APSCB and Chief Advisor and Founder Director MDMI

The only difference under this Scheme is that the Customers will have the facility of depositing fixed amount every month for a specified period and receiving back the matured value of the deposits **not at a time, but in monthly instalments like Monthly Pension** over a period of time as decided at the time of opening of the account with further admissible interest thereon.

Here, the customers will be given Pension Pass books and not the Receipts as in case of DBD / RIP entering therein details of monthly deposit made, rate of interest, monthly pension payable and interest, etc.

2. REVERSE RECURRING DEPOSIT SCHEME (RRD)

The Reverse R.D. Scheme will be similar to the monthly R.D. scheme of the Banks in so far as deposit of monthly instalment is concerned, but the RRD will differ in respect of repayment of the matured value and mode of repayment.

Here, the customers will be given the facility of receiving the matured value of RRD in monthly instalment and not at a time like the existing monthly RD Scheme. This will facilitate the customers to get back the matured value RRD like monthly Pensions over a period of time as specified at the time of opening of the RRD Account, with further interest as admissible thereon.

The RRD Rules shall contain the number of monthly instalments and the amount, the number of repayment instalments, the monthly Pension amount, mode of repayment, etc.

Normally, the tenure of deposits and the repayment period shall be same. For example, if the period of RRD Deposit a/c is 5 years, the repayment period of RRD shall also be subsequent 5 years.

Here, the depositors may be given the option of getting repayment by monthly, bi-monthly or quarterly instalment as per their need /choice.

3. WEEKLY AND BI-WEEKLY RECURRING DEPOSIT SCHEME

At present, the Banks are offering only Monthly R.D. Accounts to the customers and there is no facility for Weekly or Bi-weekly R.D. Accounts. The Banks may offer this facility by carrying out necessary amendment to their existing rules for the purpose. The Weekly and Bi-weekly Recurring Deposit Accounts are important for the daily wage earners and the unorganized sector workers. This will enable this class of workers to save a portion of their wages on weekly or fortnightly basis and earn higher interest on the Savings besides accumulating sizeable amounts for their future.

The existing Daily Deposit Scheme of the Banks is not a suitable substitute for the Weekly or Bi-weekly RD Scheme as it does not serve the interest of the depositors.

4. SOCIAL SECURITY DEPOSIT SCHEME FOR SENIOR CITIZENS

India is a vast Country having second largest population in the world. The number of our Senior Citizens are increasing rapidly. As per Research of Frost and Sullivan in 2013, the number of Senior Citizens in India has been estimated at 134 millions and this number would swell to double within a decade. The Senior Citizens by and large are dependent on the interest income of their Bank deposits. There is an urgent necessity for different kind of Deposit Schemes for them with little higher interest rates. As public institutions, the Banks have a social responsibility and they are quite capable to render this.

The Banks may introduce **SOCIAL SECURITY DEPOSIT SCHEME** in the form of term deposits for the Senior Citizens carrying @ 1% higher interest than their normal rate. Sacrificing a small fraction of interest for the Senior Citizens will not cost dearly to the Banks and this will be well compensated with the inflow of huge long term funds from them on regular basis. This progressive step of the Banks will also benefit the Senior Citizens enormously and make a lot of difference to their living condition in the golden days.

The tenure of the SS Deposit Scheme may vary from 5 years. to 15 years and the Depositors may be given renewal facility on maturity of the deposit accounts as per their choice within the maximum period prescribed in the Rule. They may also be given the option to get interest payment at the end of every month or along with the matured value of the Deposit Account together with the admissible compounding interest thereon.

5. SOCIAL SECURITY DEPOSIT SCHEME FOR MIDDLE-AGED CUSTOMERS (SSDMC)

Like Senior Citizens, there is a need for **SOCIAL SECURITY DEPOSIT SCHEME** for the middle-aged and upper middle-aged persons who are working in Public, Private and Cooperative Sector organizations without having Pension or any retirement benefit like the Govt. Servants. The eligibility age of the groups may be from 40 years and above and up to 60 years and an additional interest @ 0.80 P % to 1 % p.a may be extended to them.

The tenure of Deposit Account of the groups may be for 10 years to 20 years and the other terms and conditions may be similar to those of the Senior Citizens Deposit Scheme.



6. STUDENTS' DEPOSIT SCHEME FOR HIGHER EDUCATION AND MARRIAGE DEPOSIT SCHEME FOR GIRLS

There is a need for Students Deposit Scheme for higher Education. Similarly, there is a need for Marriage Deposit Scheme for Girls to meet expenses at their marriageable age. Both the Schemes are important and will be helpful to the parents to plan their Savings for the children and get relief from the worries.

The Deposit Schemes will be similar to Banks RD Scheme. There may be some flexibility and option to deposit higher amount at the end of every year by the customers and also carry little higher interest, say 0.80 P% to 1% p.a than the normal rate of the Banks.

The tenure of the Deposit Accounts may be fixed taking into consideration of completion year of Higher Secondary Course by the Students and attainment of marriageable age of the Girls. Other terms and conditions may be the same like usual RD Scheme.

7. SOCIAL OBLIGATION OF THE BANKS

In the business world, it has been said that the customer is the king. This is also very true in the case of Banks as they are money traders / lenders. The Banks are dependent on the people for resources, lending, investment and earning and without the people, they cannot survive. The people are virtually their masters, owners and everything. The Banks in their own interest has to focus on the people and cater to their economic development needs. The Banks have the potentials to serve the people and their well being. They have the capacity and expertise to formulate appropriate schemes and products and help the people and render personalized and friendly services. Verily, the Cooperative Banks function like Social Banks and provide very useful services to the people. The Cooperative and Commercial Banks have necessary infrastructure, capital and human resources at their disposal. They have the capability and zeal to deliver socially useful services and supplement the efforts of the Govt. as well as fulfill their social obligation.

LAND BANK JOURNAL

(QUARTERLY PUBLICATION)
w.e.f. June 2016

ADVERTISEMENT CHARGES (4 ISSUES)

All advertisement will be in full page sized printed in 4 colours

Outside Back Cover Page	:	₹36,000/-
Inside Back Cover Page	:	₹32,000/-
Inside Page	:	₹30,000/-

JOURNAL SUBSCRIPTION CHARGES

Member Banks	:	₹60/- for one year (4 quarterly issues)
Others	:	₹200/- for one year (4 quarterly issues)



Sustainable Crop Production Intensification for Smallholder Agriculture in India

The Report of Committee on Doubling of Farmers' Income constituted by Ministry of Agriculture and Farmers' Welfare, Government of India had identified sustainable crop production as one the basic prerequisite and strategy in increasing the farmers' income. Sustainable Crop Production Intensification (SCPI) aims at more systemic approach to managing natural resources, and is founded on a set of science- based environmental, institutional and social principles. Several strategies to improve the income of smallholder agriculture in India applying SCPI principles help in overcoming the present day plight of these major sections of farming community.

Introduction

Agriculture plays a vital role in India's economy. According to the 10th Agricultural Census 2015-16, the small and marginal holdings taken together (0.002.00 ha) constituted 86.21% in 2015-16 against 84.97% in 2010-11 while their share in the operated area stood 47.34% in the current census as against 44.31% in 2010-11. Small farmers face several disadvantages like economies of scale, inadequate access to information, input, output services and access to markets. Still they account for nearly 50% of production of foodgrains, fruits, vegetables etc. The Report of Committee on Doubling of Farmers' Income constituted by Ministry of Agriculture and Farmers' Welfare, Government of India had identified sustainable crop production as one the basic prerequisite and strategy in increasing the farmers' income.

2. Constraints in sustainable agricultural growth of smallholder farms:

- Declining small farmer holdings** – As per the 10th Agricultural Census 2015-16, the total number of operational holdings in the country has increased from 138 million in 2010-11 to 146 million in 2015-16 i.e. an increase of 5.33%. The average size of operational holding has declined to 1.08 ha. in 2015-16 as compared to 1.15 in 2010-11 as may be seen from the following graph.



- Changing food habits** - Due to acceleration in economy and enhanced purchasing power, food habit is changing fast to far more animal based protein. Consequently, intake of food grains has decreased from 64% in 2000 to the estimated level of about 57%

and 48% during 2025 and 2050, respectively. Also, looking to the nutritional vulnerability, integration of animal husbandry, fishery and horticulture with crop production is considered desirable.

- Increased land degradation** - About 121 million ha (36% of total geographical area) lands are at various stages of degradation in the country. About 25million ha of soils are acidic and therefore deficient in calcium and magnesium and also often possess toxic levels of aluminum and iron. In addition, 6.7 million ha salt affected soils still exist.
- Water availability for crops** - The per capita water availability has drastically reduced from 5000 m³/year in 1951 to 1820 m³/ year by 2001 and is further estimated to go down to 1140 m³/ year by 2050 (Jeyarani, 2015). Recent estimates suggest that 10 to 12m³ water is lost annually on recurring basis from the granary of India that is northwest Indo- Gangetic plains and nearly 40% of the currently favourable wheat growing areas will become unfavourable by 2030. It is further estimated that each one degree centigrade increase in temperature will increase the demand for irrigation water by 2% to maintain crop yields at current levels.
- Effect of climate change on crop yields** - By the year 2100, the yield of chickpea and pigeon pea will be lower by 25%. The climate impacts on cereals will vary widely in rainy season as well as winter seasons. In the winter season, wheat yield will be less by about 22%, while in rainy season, rice will be affected more than maize and sorghum. Rice yield will decline by over 15% with significant changes in climate as compared to yield loss of 7% in sorghum and 4% in maize. Groundnut also stands to lose, but rape seed mustard is likely to gain by small margin of less than a percent. However, the climate impacts will not be so severe in the short term (Birthal et al. 2014).



3. Sustainable Crop Production Intensification

Given the foregoing current and burgeoning future challenges to our food supply and to the environment, sustainable intensification of agricultural production is emerging as a major priority for policy makers and international development partners. Sustainable intensification has been defined as producing more from the same area of land while reducing negative environmental impacts and increasing contributions to natural capital and the flow of environmental services. In order to achieve the objective of sustainable crop production intensification (SCPI), FAO has endorsed the "ecosystem approach" in agricultural management. (www.fao.org/docrep/014/i2215e/i2215e.pdf). Ecosystem approaches to agricultural intensification have emerged over the past two decades as farmers began to adopt sustainable practices, such as managing natural resources through farmer field schools (FFS), production systems including maintenance of healthy soil by applying scientific doses of fertilizers, water management practices with appropriate crop rotation to enhance crop nutrition, cultivating a wider range of species and varieties in associations, using well adapted, high-yielding varieties and good quality seeds, integrated management of insect pests, diseases and weeds, measures to strengthen institutional linkages to sustain the scaling up of pilot studies, farmers' experiences through farmer organizations, besides access to local and traditional knowledge.

NABARD had been partnering with various national and international organisations / agencies in supporting various innovations undertaken at the field level to implement the key policies/strategy of SCPI. It had also provided grant assistance to various agencies from its Watershed Development Fund, Tribal Development Fund and Farm Sector Promotion Fund for such initiatives.

4. Initiatives in Public/ private sector for making small farmer holdings sustainable

Some of the initiatives undertaken by public and private sector research organisations in bringing about transformational change in improving the livelihoods of rural population especially small and marginal farmers are summarised below:

4.1 National Agricultural Innovation Project (NAIP) was implemented by ICAR with the financial support of

World Bank during 2010-2014 (ICAR,2014). As part of the project, it promoted research on 'Sustainable Rural Livelihood Security' with 36 sub-projects covering small farmers located in 91 most backward districts distributed all over India. The special features of these innovations including interventions appropriate to region (Fish-Pig, Duck farming system in South Garo Hills, Meghalaya, Integrated fish-makhana-water chestnut farming system in Dharbanga, Bihar), cluster approach in specific sites differing in natural resources (Land shaping in salt affected coastal areas of Sundarbans, West Bengal), self-help groups formed for federating farmers (collection and marketing of farm produce in Kerala through Vegetable and Fruit Promotion Council), producer company through processing (Tamarind processing in Bastar, Chattisgarh), value addition and marketing to realize higher benefits (Value addition of non-timber forest produce in Godda, Jharkhand), rural technology centres (RTC) created for reducing knowledge gaps and technological empowerment (Redgram transplanting/ dribbling in Bidar, Karnataka), agri-business centres for entrepreneurship development (Precision farming of marigold in Tamil Nadu and Karnataka), seed bank to make available quality seeds at right time (Seed societies in Jhabua and Dhar districts of Madhya Pradesh), marketing linkages and value chain promotion for providing outlets for sale of produce and development of inclusive community based organizations (Mushroom cultivation using agricultural waste in Dhenkanal, Khandamal and Kalahandi districts of Odisha), need based capacity building, PPP to accelerate productivity and profitability,etc.

4.2 Syngenta Foundation for Sustainable Agriculture (SFSA), a not-for-profit Swiss Charity organisation based in Basil, Switzerland set up in 2004 also worked on small farmer's productivity and their access to markets for improving their income. 'The Anandwan Experiment' near Warora Tahsil of Chandrapur district of Maharashtra lead by the local partner Maharogi Sewa Samithi (MSS) managed by Baba Amte demonstrated growing high value vegetables using hybrid varieties. This further lead to several initiatives like interconnecting of water bodies, land development, SRI system of rice cultivation, seed multiplication, vocational educational schools (Anandwan Institute for Transfer of Agricultural Technology),etc.

The foundation also implemented similar successful projects in tribal inhabited Jawhar tehsil of Thane district of Maharashtra through Pragathi Pratisthan (local NGO) and BAIF. The pilot started in 2006-07 with farmers' training followed by distribution of certified seeds, trials in farmers' fields for use of new crop varieties, cultivation of high yielding SRI paddy in Kharif and vegetables in Rabi seasons resulted in transforming livelihoods of these farmers. During 2007-08, collective marketing was experimented with BAIF and Amrai Tribal MITTRA Fruit Processing and Marketing Cooperative Society. Farmers' Producers Organisations were formed during 2009-10 and the entire Tehsil has become a vegetable growing hub catering to the needs of nearby Mumbai and other whole sale markets. The foundation made similar interventions through local NGOs in Bolangir and Kalahandi districts of Odisha (transforming into a National Seed Hub from traditional farming systems), Bankura district of West Bengal (transforming from highly fragmented, distressed agriculture to establishing collective production and marketing of vegetables based on hub-and-spoke model, bringing hybrid vegetable seed production operation with brand name Sree Rohi and credit tie up with BASIX, a micro-finance institution).

4.3 Start-ups in Agriculture – Notable start-ups which made significant contributions in promotion of supply chain management in agriculture include Barix Agro services, Anulek Agro-tech, MITRA, Cropin Technology Solutions, Eruvaka Technologies, Skymet, Ekgao, Digital Green, Frontal Rain Technologies, Agro-star etc., their detailed contributions can be accessed at www.thealternative.in/business/10-technological-innovations – revolutionising indian agriculture/ - Deshpande Foundation.

5. Strategies to Improve Farmers' Income through SCPI Principles

The key parts of SCPI adopted to evolve strategies for increasing small holder farmers' income in India are discussed as under:

i. Quality Seeds, Seed Treatment and Timely Sowing - It is estimated that good quality seeds and improved varieties can contribute about 20 to 25% increase in yield (Murleedhar et al. 2013). Seed treatment with biological and chemical agent can control or contain primary soil and seed borne infestation.

ii. Intercropping and Crop Rotation - Crop rotation is a systematic approach to deciding which crop to plant where in the field from one year to the next generally these include 3 or more crops which usually have fewer problems with pests and diseases and with complimentary effect on growth of each. The goal of Crop rotation is to help manage organic soil fertility and also help avoid or reduce problems with soil borne diseases and some soil dwelling insects such as corn rootworms (Organic life 2017). Crop rotations with legume scan successfully reduce the need to purchase nitrogenous fertilizers.

iii. Conservation Agriculture - Conservation Agriculture (CA) technologies involve minimum soil disturbance, permanent soil cover through crop residues or cover crops and crop rotation for achieving higher productivity. The concept of zero tillage, minimum tillage, strip tillage, bed planting, laser land levelling, crop residue management, use of resources conservation technologies (RCTs), direct seeded rice, etc. use the same basic principle. Adoption of zero tillage can significantly reduce the cost of cultivation by 11 to 15% (SurajBhan and Behera,2014).

iv. Integrated Nutrient Management - Integrated nutrient management is the most efficient and practical way to mobilize all the available accessible and affordable plant nutrient sources in order to optimise the productivity of crops/cropping systems and economic return to the farmer (Govil and Kaore, 1997). Soil test based fertilizer recommendations and application of Neem Coated Urea will improve the soil health. A 20 - 25% yield gain could be easily obtained with the adoption of soil test based nutrient management depending on the soil conditions in cropping systems (Alley and Vanlauwe, 2009). Use of bio fertilizers like Rhizobium, Azospirillum, Azetobacter and Phosphobacteria is one of the cost effective and renewable source of plant nutrients to supplement the chemical fertilizers for sustainable agriculture. Azolla is used as biofertilizer for wetland rice and it is known to contribute 40 to 60 kg of Nitrogen per hectare for rice crop (Amrik Singh Ahluwalia, 2003).

v. Improve Irrigation Efficiency - Measures to increase the water use efficiency of available water include adoption of improved water saving technology like drip irrigation, sprinkler irrigation, rain gun, rainwater harvesting, renovation of traditional water



bodies, participatory irrigation management (PIM), etc. Drip irrigation can lead to substantial reduction in irrigation costs and savings on electricity and fertilizers. Yields are reported to go up to 45% in wheat, 20% in gram and 40% in soyabean using drip irrigation (Economic Survey, 2014-15). A dedicated micro-irrigation fund with an initial corpus of ₹ 5000 crore has also been set up by NABARD to achieve 'per drop more crop' and 'Har khet ko paani'. NABARD Centre for Research in Agricultural Economics conducted a study on 'Water Productivity Mapping of Major Indian Crops'. The study observed an inverse relationship between productivity of irrigation and land hinting at wasteful use of water and recommended a four-pronged strategy to intensify water productivity: enhancing crop yields, containing non-beneficial evapo transpiration, better use of rainfall as well as surface and ground water (Bharat R Sharma, 2018).

vi. Integrated Pest Management - Integrated Pest Management (IPM) is a broad based approach that integrates all available pest control techniques – cultural, mechanical, biological and chemical for economic control of pests (Diana G Alston, 2011). IPM aims to suppress pest populations below the economic injury level (EIL). This means using cultural methods such as rotation between different crops, selecting pest resistant varieties, planting pest free rootstock and maintaining crop sanitation or mechanical control such as handpicking, barriers, traps, vacuuming and tillage to disrupt breeding. Biological control means to promote beneficial insects that eat or parasitize target pests or using biological insecticides derived from naturally occurring microorganisms (eg. BT, entomopathogenic fungi and entomopathogenic nematodes).

vii. Custom Hiring Centres (CHCs) - Due to small farm size, farmers cannot invest in costly farm machinery. The viable solution to this problem is to promote custom hiring centres which can offset the adverse economies of scale arising due to small land holding and high cost of individual ownership. It provides access to small and marginal farmers to costly farm machinery and facilitates timeliness in farm operations and efficient use of inputs. Rural youth will also find a gainful means of employment through it.

viii. Use of ICT for Information Dissemination - Reducing the gap between scientific know-how and field level do-how is essential to overcome the agricultural

challenges. Empowering farmers with right information at the right time and place is essential for improving the efficiency and viability of small and marginal holdings. Farmers can get timely weather and market information and agro-advisory services through online and telecom medium such as Kisan Call Centre, PusaKrishi App, Kisan Suvidha app, Agri-market App and Crop Insurance App. The adoption of new technologies in agriculture such as drone technology is helping better planning and forecasting of crop production, agricultural land use mapping, drought prediction and utilisation of allow paddy fields for Rabi crops.

ix. Marketing of the Produce - Government has launched e - National Agriculture Market (eNAM), an electronic trading portal which networks the existing Agricultural Produce Market Committee (APMC) mandis to create a unified national market for agricultural commodities in 585 mandis. The eNAM portal provides a single window service for all APMC related information and services. This includes commodity arrivals and prices, buy and sell trade offers, provision to respond to trade offers etc. It will promote uniformity, streamlining of procedure across the integrated markets, removes information asymmetry between buyers and sellers and promotes real time price discovery based on actual demand and supply, promotes transparency in auction process, and access to national wide market for the farmer with prices commensurate with quality of his produce and online payment and availability of better quality produce and at more reasonable price to the consumer. Farmers can aggregate into groups like Farmers Producer Organisations (FPO) or Companies to achieve economies of scale and achieve competitive and remunerative market price for their produce. It will increase their bargaining power and thus increase the producer share in consumer rupee, which is at present 25 to 30% only. Nayak, (2014) explored the factors contributing to sustainable community enterprise system of FPOs through an action research project, funded by NABARD. Based on this study of Producer Companies from seven states performance indicators, viz., (a) social capital formation, (b) financial capital formation, (c) capability enhancement of producers, (d) external networks with markets and financial institutions, and (e) engagement of producer organisation with diverse needs of the community, have been identified for sustainable performance of these organisations.



x. **Mixed Farming, Diversification and Commercialization of Agriculture** – About 23% of the farmers in India have less than 100 square metre land area. This is a very significant mass of farming population. Improved technology of crops is not going to help them. Instead, diversification and commercialization of agriculture per unit of area and time will pay them higher returns. The aim is to increase income through different sources and to complement land and labour demand across the year. Advantages of mixed farming include the possibility of reducing risk, spreading labour and re-utilising the resources. Besides this, diversification into non farm sector like handicrafts, tailoring, pottery, etc. will help. So, there is need for entrepreneurship development of the farmers in allied activities like dairy, poultry, fishery, beekeeping, mushroom production, etc.

xi. **Integrated Farming Systems** - Integrated Farming System is a judicious mix of agriculture enterprises like cropping, dairy, poultry, piggery, goat and sheep rearing, fishery, horticulture, apiculture, sericulture, forestry, etc. It leads to reduced production cost

because of input recycling from the by-products of allied enterprises from the linked activities in integrated farming suited to the given agro-climatic conditions and socio-economic status of the farmers. These enterprises not only provide regular and steady flow of income for the farmers through the products but also help in increasing the family labour employment. Integration of allied activities will result in availability of nutritious food enriched with protein, carbohydrate, fat, minerals and vitamins.

To conclude, the various initiatives undertaken by public and private sector research organisations in bringing about transformational change in improving the livelihoods of rural population especially small and marginal farmers need to be up scaled for a systematic and sustainable agricultural growth. The ecosystem practices of SCPI encompassing environmental, institutional and social principles shall pave the way for meeting the demands of various stakeholders leading to planned growth of agriculture.

Source: NABARD – Rural Pulse

From Page 4

It is high time that cooperatives at all levels gear up to meet the future challenges in a professional manner.

India with a rich cooperative culture and a vibrant cooperative movement can march ahead only if we have a strong leadership which can provide a new direction to the growth of the cooperative movement. The ICA Blue-Print of Cooperative Decade lays emphasis on cooperatives emerging as the most preferred model of development of the people by 2020. To achieve this objective, the cooperative leadership today must have vision, dedication

and commitment and transparency. This internalization of the noble ideals of the cooperative movement will be the real tribute to Late Vaikunth Bhai Mehta.

I wish you all in your endeavor to strengthen the cooperative movement for the welfare of our people.

Jai Hind!"

(Source: FISHCOOPS – April-June 2018 Issue)



मछली पालन में रोजगार की संभावनाएं

भारतीय अर्थव्यवस्था में मछली पालन एक महत्वपूर्ण व्यवसाय है जिसमें रोजगार की अपार संभावनाएं हैं। ग्रामीण विकास एवं अर्थव्यवस्था में मछली पालन की महत्वपूर्ण भूमिका है। मछली पालन के द्वारा रोजगार सृजन तथा आय में वृद्धि की अपार संभावनाएं हैं, ग्रामीण पृष्ठभूमि से जुड़े हुए लोगों में आमतौर पर आर्थिक एवं सामाजिक रूप से पिछड़े, अनुसूचित जाति, अनुसूचित जनजाति व अन्य कमज़ोर तबके के हैं जिनका जीवन-स्तर इस व्यवसाय को बढ़ावा देने से उठ सकता है। मत्स्योद्योग एक महत्वपूर्ण उद्योग के अंतर्गत आता है तथा इस उद्योग को शुरू करने के लिए कम पूँजी की आवश्यकता होती है। इस कारण इस उद्योग को आसानी से शुरू किया जा सकता है। मत्स्योद्योग के विकास से जहां एक ओर खाद्य समस्या सुधरेगी वहीं दूसरी ओर विदेशी मुद्रा अर्जित होगी जिससे अर्थव्यवस्था में भी सुधार होगा। स्वतंत्रता के पश्चात् देश में मछली पालन में भारी वृद्धि हुई है। वर्ष 1950-51 में देश में मछली का कुल उत्पादन 7.5 लाख टन था, जबकि 2004-05 में यह उत्पादन 63.04 लाख टन हो गया। भारत विश्व में मछली का तीसरा सबसे बड़ा उत्पादक और अंतर्देशीय मत्स्य पालन का दूसरा सबसे बड़ा उत्पादक देश है। मत्स्य क्षेत्र देश में 11 लाख से अधिक लोगों को रोजगार प्रदान करता है।

सुलभ, सस्ता और अधिक आय देने वाला

चूंकि कृषि भूमि में कोई वृद्धि नहीं हो रही है तथा ज्यादातर कृषि कार्य मशीनरी से होने लगे हैं, इसलिए राज्य की निर्धनता की स्थिति और भी भयावह होती जा रही है, इस कारण ग्रामीण क्षेत्रों में मत्स्य पालन जैसे लघु उद्योगों को प्रोत्साहन देना होगा तभी ग्रामीण क्षेत्र के निर्धनों का आर्थिक एवं

स्रोत - डॉ. नीरज कुमार गौतम, कुरुक्षेत्र और इंडिया वॉटर से लिया गया (लेखक शासकीय महाविद्यालय ढाना, जिला सागर, म.प्र., के अर्थशास्त्र विभाग में अतिथि विद्वान हैं)।

सामाजिक स्तर सुधारा जा सकेगा। सामाजिक विकास के लिए निर्धन, बेरोजगार, अशिक्षित लोगों की आर्थिक स्थिति सुदृढ़ करने पर विशेष ध्यान देना होगा। इसके लिए एक सुलभ, सस्ते एवं कम समय में अधिक आय देने वाले मत्स्य पालन उद्योग व्यवसाय को अपनाने हेतु प्रेरित करने की आवश्यकता होगी।

स्वरोजगार उपलब्ध कराने की महत्वपूर्ण योजना

भारत वर्ष का अधिकांश जन समुदाय ग्रामीण क्षेत्रों में निवास करता है, समाज की उपेक्षा और व्यवस्था के अमानवीय व्यवहार के कारण खासतौर पर अनुसूचित जाति, अनुसूचित जनजाति एवं निर्धन समुदाय के लोग संकट के दौर से गुजरते रहे हैं। ग्रामीण क्षेत्र में रहने वाले संपन्न समाज के व्यक्ति अनुसूचित जाति एवं अनुसूचित जनजाति के लोगों को समाज से ऊपर नहीं उठने देते थे और उनका बंधुआ मजदूर के रूप में पूर्ण शोषण करते रहे हैं। ग्रामीण क्षेत्र में इस वर्ग के लोगों में काफी सामाजिक कुरीतियां हैं, जिसका प्रमुख कारण इनका अशिक्षित होना और इनमें अंधविश्वास होना है। भारत सरकार ने इनके सामाजिक उत्थान के लिए तथा इनकी आर्थिक स्थिति में सुधार लाने के लिए इन्हें स्वस्थ रखने तथा स्वरोजगार उपलब्ध कराने के लिए विभिन्न योजनाएं संचालित की जिसमें से मछली पालन को महत्वपूर्ण व्यवसाय के रूप में अपनाने हेतु प्रेरित किया। ग्रामीण क्षेत्र में मत्स्यपालकों को मत्स्य पालन उद्योग में लगाने के लिए उन्हें तालाब पट्टे पर दिलाना, उन्नत किस्म का मत्स्य बीज प्रदान करवाना, उन्हें मत्स्य पालन संबंधी तकनीकी प्रशिक्षण देना प्रारंभ किया।

संगठित तरीके से व्यवसाय की शुरुआत

मत्स्य उद्योग एक ऐसा व्यवसाय है जिसे निर्धन से निर्धन व्यक्ति अपना सकता है एवं अच्छी आय



प्राप्त कर सकता है तथा समाज में क्रान्तिकारी परिवर्तन लाया जा सकता है। विभिन्न माध्यमों से मत्स्य पालन व्यवसाय में लगकर अपना आर्थिक स्तर सुधारा है तथा सामाजिक स्तर में भी काफी सुधार हुआ है। आज मत्स्य व्यापार में लगी महिलाएं पुरुषों के साथ बराबर का साथ देकर स्वयं मछली बेचने बाजार जाती हैं जिससे उनकी इस व्यवसाय से संलग्न रहने की स्पष्ट रुचि झलकती दिखाई देती है।

महिलाएं स्वयंसहायता समूहों का गठन कर मिलकर आर्थिक स्तर सुधारने का कार्य कर रही हैं वहीं दूसरी ओर समाज को एकसूत्र में बांधकर आगे बढ़ाने का सराहनीय कार्य कर रही हैं। आज के परिवेश में समाज में उत्कृष्ट स्थान बनाने के लिए बच्चों की शिक्षा पर उचित ध्यान देकर उनके भविष्य को संवारने एवं समाज में उचित स्थान दिलाने के लिए यह एक सराहनीय कदम है। शिक्षा को समाज का मुख्य अंग माना गया है क्योंकि शिक्षित समाज ही एक उन्नत समाज की रचना कर सकता है तथा समाज के साथ-साथ अपने घर, ग्राम, देश के विकास में अपना पूर्ण योगदान दे सकता है।

अनुकूल प्राकृतिक स्थिति

हमारे देश में भू-क्षेत्रफल का एक बड़ा हिस्सा ऐसा है जो नदियों, समुद्र व अन्य जल स्रोतों से ढका हुआ है और फसलोत्पादन के लिए उपलब्ध नहीं है, वहां मत्स्य पालन को बढ़ावा देकर अच्छी आय प्राप्त की जा सकती है। इस उद्योग के माध्यम से अन्य सहायक उद्योग को विकसित करके लाभ प्राप्त किया जा सकता है। यह उद्योग विदेशी मुद्रा अर्जित करने का प्रमुख साधन है। आज आवश्यकता इस बात की है कि इन्हें मत्स्य पालन से प्राप्त होने वाली आर्थिकी से अवगत कराया जाएं, इनकी मानसिकता में बदलाव लाने, इनमें विश्वास जगाने, घर एवं समाज के बंधनों से बाहर निकल कर

व्यवसाय में लगाने हेतु उन्हें पूर्ण सहयोग देने की जरूरत है। तभी ये बाहरी परिवेश में आकर अपना आर्थिक स्तर सुधार सकेंगे तथा एक अच्छे समाज का निर्माण कर क्रान्तिकारी सामाजिक परिवर्तन लाने में सक्षम हो सकेंगे एवं निर्भीक बन सकेंगे।

पूरे समाज की बेहतरी

जिस समाज का आर्थिक स्तर बहुत अच्छा होगा, निश्चित ही उस समाज का सामाजिक स्तर उच्च रहेगा। उनका रहन-सहन, खानपान, वातावरण अच्छा होगा, उनका आचरण शीलवान होगा। अतः ग्रामीण क्षेत्र में निर्धन वर्ग के लोगों को खासतौर पर अनुसूचित जाति/अनुसूचित जनजाति वर्ग के लोगों को मत्स्य पालन व्यवसाय में लगाकर उनका आर्थिक स्तर सुधारना होगा, तभी उनका सामाजिक स्तर सुधरेगा। इस प्रकार मछली पालन देश की अर्थव्यस्था में बहुत महत्वपूर्ण योगदान कर सकता है।

लाभार्जन करने वाले सहायक उद्योग

इस उद्योग पर आधारित अन्य सहायक उद्योग भी हैं जैसे जाल निर्माण उद्योग, नाव निर्माण उद्योग, नायलोन निर्माण, तार का रस्सा उद्योग, बर्फ के कारखाने आदि उद्योग भी मत्स्य उद्योग से लाभान्वित हो रहे हैं। यह उद्योग बेरोजगारी दूर करने में सहायक है। रोजगारमूलक होने के कारण इस उद्योग के माध्यम से देश की पिछड़ी अवस्था में सुधार किया जा सकता है। चूंकि कृषि भूमि में कोई वृद्धि नहीं हो रही है तथा ज्यादातर कृषि कार्य मशीनरी से होने लगे हैं इसलिये देश की निर्धनता की स्थिति और भी भयावह होती जा रही है। ग्रामीण क्षेत्र में मत्स्य पालन जैसे महत्वपूर्ण उद्योगों को प्रोत्साहन देना होगा तभी ग्रामीण सामाजिक स्तर सुधारा जा सकेगा। सामाजिक विकास के लिए निर्धन, बेरोजगार अशिक्षित लोगों की आर्थिक स्थिति सुदृढ़ करने पर विशेष ध्यान देना होगा। इसके लिए मत्स्य पालन उद्योग जोकि



एक सुलभ, सस्ता एवं कम समय में अधिक आय देने वाला है, व्यवसाय को अपनाने हेतु प्रेरित करने की आवश्यकता होगी। मत्स्य पालन व्यवस्था शुरू करने के पहले मत्स्यपालकों को उन्नत तकनीकी की जानकारी देनी तथा प्रशिक्षण देना होगा। अगर मत्स्य पालन उन्नत तकनीकी से किया जाएगा तो निश्चित रूप से मत्स्य उत्पादकता बढ़ेगी और जब मत्स्य उत्पादकता बढ़ेगी तो आय में वृद्धि होगी और आय में वृद्धि होगी तो निश्चित रूप से सामाजिक स्तर सुधरेगा क्योंकि आर्थिक अभाव में जहां निर्धन व्यक्तियों का जीवन-स्तर गिरा हुआ था उसमें सुधार होगा परिवार के बच्चों को; शिक्षित कर सकेंगे और जब बच्चे शिक्षित हो जाएंगे तो समाज में उनका स्तर ऊंचा होगा तथा हीन भावना की कुंठा से मुक्ति मिलेगी और यही शिक्षित बच्चे समाज के अन्य सदस्यों को अपना सामाजिक स्तर सुधारने में विशेष योगदान दे सकेंगे। अतः इनको स्वरोजगार में लगाना आवश्यक है।

सह-आय के अन्य स्रोत

मछली पालन सह आय के अन्य स्रोत- इस उद्योग के साथ-साथ अन्य सहायक उद्योग भी कर सकते हैं जिनमें लागत दर कम आती है तथा लाभ अधिक प्राप्त होता है। मछली पालन के साथ-साथ अन्य उत्पादक जीवों का पालन किया जा सकता है जिससे मत्स्य उत्पादन में होने वाले व्यय की पूर्ति की जा सके तथा अन्य जीवों से उत्सर्जित व्यर्थ पदार्थों का उपयोग मत्स्य पालन के लिए हो सके तथा अन्य जीवों के उत्पादन से अतिरिक्त आय प्राप्त हो सके। वर्तमान में मत्स्य पालन के साथ सुअर, बत्तख एवं मुर्गीपालन करना काफी लाभप्रद साबित हुआ है। इन प्रयोगों से प्राप्त परिणाम आशाजनक तथा उत्साहपूर्वक हैं।

मत्स्य पालन सह-धान उत्पादन

इस खेती में धान की दो फसल (लम्बी पौधों की फसल खरीफ में एवं अधिक अन्न देने वाली धान

की फसल रबी में) एवं साल में मछली की एक फसल धान की दोनों फसल के साथ ली जा सकती हैं। धान सह मछली पालन का चुनाव करते समय इसका ध्यान रखना चाहिए कि भूमि में अधिक से अधिक पानी रोकने की क्षमता होनी चाहिए जो इस क्षेत्र में कन्हार मढ़ासी एवं डोरसा मिट्टी में पाई जाती है। खेत में पानी के आवागमन की उचित व्यवस्था मछली पालन हेतु अति आवश्यक है। सिंचाई के साधन मौजूद होने चाहिए व औसत वर्षा 800 किलोमीटर से अधिक होनी चाहिए।

मछली पालन सह-बत्तख पालन

मत्स्य सह-बत्तख पालन के लिए एक अच्छे तालाब का चुनाव और अनचाही मछलियों और वनस्पति का उन्मूलन मत्स्य पालन के पूर्व करना अनिवार्य है। जैसा पूर्व में बताया गया है मत्स्य बीच संचय की दर से इसमें कम रहती है। 6000 मत्स्य अंगुलिकाएं/हेक्टेयर की दर से कम से कम 100 किलोमीटर आकार की संचय करना अनिवार्य है क्योंकि बत्तखें छोटी मछलियों को अपना भोजन बना लेती हैं। बत्तखों को पालने के लिए बत्तखों के प्रकार पर ध्यान देना अति आवश्यक है। भारतीय सुधरी हुई नस्ल की बत्तखें उपयुक्त पाई गई हैं। खाकी केम्पवेल की बत्तखें भी अब पाली जाने लगी हैं। एक हेक्टेयर जल क्षेत्र में मत्स्य पालन हेतु जो खाद की आवश्यकता पड़ती है उनकी पूर्ति 200-300 बत्तखें/हेक्टेयर मिलकर पूरी की जा सकती है।

मछली सह-मुर्गी पालन

मछली सह-मुर्गी पालन के अंतर्गत मुर्गी कीलिटर का उपयोग सीधे तालाब में किया जाता है, जो मछलियों द्वारा आहार के रूप में उपयोग किया जाता है एवं शेष बचा हुआ कीलिटर तालाब में खाद के काम आ जाता है। मुर्गी के घर को आरामदायक तथा गर्मियों में ठंडा और सर्दियों में गरम रखने की व्यवस्था होना अनिवार्य है। साथ ही उसमें प्रत्येक



पक्षी के लिए पर्याप्त जगह, हवा, रोशनी एवं धूप आनी चाहिए तथा उसे सूखा रखना चाहिए। मुर्गियों के अण्डे, मुर्गियों की प्रजाति एवं नस्ल तथा उनके रहने की उचित व्यवस्था सन्तुलित आहार और उनकी स्वास्थ्य रक्षा संबंधी व्यवस्था आदि पर निर्भर करती हैं।

मछली पालन सह-झींगा पालन

मछली सह झींगा पालन में हमें तालाब की तैयारी एवं प्रबंधन पूर्व की भाँति ही करना है। तालाब की पूर्ण तैयारी हो जाने के बाद मीठे पानी में झींगा संचय करते हैं। पालने वाली प्रजाति जिसे हम “महा झींगा” भी कहते हैं, एवं जो सबसे तेज बढ़ने वाला होता है “मेक्रोबेकियम रोजनवर्गीय” है। इसका पालन मछली के साथ एवं केवल झींगा पालन दोनों पद्धति से कर सकते हैं। यह तालाब के तल में रहता है एवं मछलियों द्वारा न खाए गए भोजन, जलीय कीड़े एवं कीट-पतंगों के लार्वा आदि को खाता है। जब इसका मछली के साथ पालन करते हैं तो तालाब की संचय की जा रही मिग्रल मत्स्य बीज की संख्या कम कर दी जाती है। मछली सह-झींगा पालन में लगभग 15,000 झींगे के बीज प्रति हेक्टेयर की दर से संचय किये जाते हैं। इसके लिए किसी अतिरिक्त खाद या भोजन आदि तालाब में डालने की आवश्यकता नहीं रहती है। सामान्यतः झींगे के बीज छः माह में 70-80 ग्राम के एवं आकार में 120-130 सेंटीमीटर के हो जाते हैं। इन्हें बाजार में बेचने पर अच्छी कीमत प्राप्त की जा सकती है।

मछली सह-सुअर पालन

प्रक्षेत्र के अनुपयोगी पदार्थ का उपयोग कृषि एवं मर्वेशियों के पालन में किया जाता है। इसी के तारतम्य में मत्स्य एवं सुअर पालन साथ करने की विधि विकसित की गई है। सुअर पालन तालाब के किनारे या उसके बंड पर छोटा घर बनाकर किया जाता है जिससे सुअर पालन में परित्याग

अनुपयोगी पदार्थ मलमूत्र सीधे जलाशय में बहाकर डाले जाते हैं जोकि मत्स्य का आहार बन जाता है। साथ ही जलाशय में खाद का काम भी करता है और तालाब की उत्पादकता को बढ़ाता है, जिससे मत्स्य उत्पादन बढ़ता है। इस प्रकार मत्स्य पालन से हमें मछलियों को अतिरिक्त आहार नहीं देना होता। साथ ही खाद का व्यय भी बच जाता है। सुअर पालन में जो व्यय आता है उसकी पूर्ति सुअर के मांस के बेचने से हो जाती है। मछली सह-सुअर पालन पद्धति बहुत सरल है और कृषक इसे सरलता से कर सकते हैं।

मछली पालन सह-सिंघाड़ा उत्पादन

छोटे तालाब जिनकी गहराई 1-2 मीटर रहती है, जिनमें मत्स्य पालन किया जाता है, उनमें सिंघाड़ा की उपज भी ली जा सकती है। सिंघाड़ा एक उत्तम खाद्य पदार्थ है। तालाब में सिंघाड़ा बरसात में लगाया जाता है एवं उपज अक्टूबर माह से जनवरी तक ली जा सकती है। सिंघाड़ा और मछली पालन से जहां मछलियों को भोजन प्राप्त होता है वही खाद्य का उपयोग सिंघाड़ा की वृद्धि में सहायक होता है। सिंघाड़ा की पत्तियां एवं शाखाएं जो समय-समय पर ढूटती हैं, मछलियों के भोजन का काम करती हैं। ऐसे तालाबों में कालबसू और मिग्रल की बाढ़ अच्छी रहती है। पौधों के वह भाग जिन्हें मछलियां नहीं खाती हैं, तालाब में खाद का काम करते हैं जिससे तालाब में प्लवक की बाढ़ अधिक होती है जो मछलियों का भोजन है।

विदेशी मुद्रा अर्जन का साधन

मत्स्य निर्यात आज कई देशों में विदेशी मुद्रा अर्जन करने का एक मुख्य साधन बन गया है। भारत जैसे अन्य कई देश जहां मत्स्य की खपत कम है परन्तु उत्पादन अधिक है, वहां मत्स्य का निर्यात करके भारी मात्रा में विदेशी मुद्रा इससे प्राप्त की जाती है। आज जापान में विश्व का सर्वाधिक मत्स्य उत्पादन होता है जबकि अमेरिका, ब्रिटेन, कनाडा आदि देशों



Telangana State Co-operative Apex Bank Ltd.

(State Govt. Partnered Scheduled Bank)

Troop Bazaar, Hyderabad -500 001, url:<http://tscab.org>. Phone : 040 - 2468 5503



Techno-savvy Banking Services take the lead

Housing Loan

- Upto ₹30 lakhs



Gold Loan

- Normal Gold Loan upto ₹2 lakhs
- Commercial Gold Loan upto ₹15 lakhs
- Secured Overdraft upto ₹10 lakhs
- EMI Gold Loan upto ₹10 lakhs



Education Loan

- Abroad upto ₹20 lakhs
- In India upto ₹10 lakhs



Car Loan

- Rate of Interest: 9.95%
- Maximum Loan Amount: 25lakhs
- Repayment Period: 6 Years

Period of Deposit

180 days to 270 days

271 days to 364 days

1 year exact

Applicable Interest Rate (%p.a)

6.75

6.95

7.10

Additional Interest of 0.60% is applicable to Senior Citizens for deposits over and above 1 year.

** Rate of Interest, subject from time to time.

Key Financial Indicators

(₹ in crores)

S. No	Particulars	As on 31.03.2018
1	Share Capital	144.10
2	Reserves	466.00
3	Owned funds	610.10
4	Deposits	3851.25
5	Borrowings	3388.92
6	Working Capital	7850.27
7	Loans & Advances	5195.75
8	Call money & short term deposits with other Banks	1198.25
9	Investments	1328.66
10	Gross Profit	66.97
11	Gross NPAs	0.24%



- RuPay Card
- Platinum Debit Card



- Mobile Banking / IMPS



NEFT • RTGS



- Mobile ATM Van



- Micro ATM

Shri.Konduru Ravinder Rao
President, TSCAB

Dr. Nethi Muralidhar
MD, TSCAB



में वहां की खपत के अनुरूप उत्पादन नहीं है। जिन देशों में मत्स्य खपत से अधिक उत्पादन होता है, वे देश ऐसे देशों को जहां खपत से कम उत्पादन हो, को भारी मात्रा में मत्स्य का निर्यात करते हैं। कई देशों में अंतर्राष्ट्रीय बाजार से धन प्राप्त करने का एकमात्र जरिया मत्स्य उत्पादन और मत्स्य निर्यात पर टिका है। मत्स्य पालन व्यवसाय का महत्व मत्स्य अंतर्राष्ट्रीय बाजार में उपयोगिता, आवश्यकता और कम उत्पादन तथा पूर्ति की वजह से अधिक से अधिक होता जा रहा है। मत्स्यकीय क्षेत्र निर्यात के जरिए विदेशी मुद्रा अर्जित करने वाला एक प्रमुख स्रोत है।

मत्स्य पालन हेतु शासन की विभिन्न योजनाएं

मछुआ प्रशिक्षण- मस्त्य कृषकों को राज्य शासन की नीति द्वारा 30 दिवसीय मत्स्य पालन का प्रशिक्षण दिया जाता है। प्रशिक्षण के दौरान प्रत्येक प्रशिक्षणार्थीयों को रु. 750/- प्रशिक्षण भत्ता, 2 कि. नायलोन धागा मुफ्त दिया जाता है तथा प्रशिक्षण स्थल पर आने-जाने का वास्तविक किराया भी दिया जाता है। प्रशिक्षणार्थीयों को ठहरने की व्यवस्था भी शासन द्वारा की जाती है।

लघु प्रशिक्षण - मत्स्य कृषक विकास अभियान योजना अंतर्गत तालाबधारी मत्स्य कृषकों को 10 दिवसीय लघु प्रशिक्षण भी दिया जाता है। प्रशिक्षण के दौरान प्रत्येक प्रशिक्षणार्थीयों को रु. 500 प्रशिक्षण भत्ता देय है, जिसे अब वर्ष 2004-05 से रु. 1000 कर दिया गया है।

मछुआ दुर्घटना बीमा- केन्द्र प्रवर्तित योजना अंतर्गत मछुओं का दुर्घटना बीमा कराया जाता है जिसकी प्रीमियम राशि शासन द्वारा जमा की जाती है। इस योजना के तहत मत्स्य कृषक की मृत्यु होने पर उसके उत्तराधिकारी को रु. 50,000 की राशि प्रदान की जाती है तथा स्थाई विकलांगता होने पर रु. 25,000 की राशि दी जाती है।

सहकारी समितियों को ऋण / अनुदान - सहकारी समितियों को मत्स्य बीज, क्रय, पट्टाराशि नाव जाल क्रय एवं अन्य सामग्री क्रय करने हेतु राज्य शासन द्वारा ऋण तथा अनुदान दिया जाता है। सामान्य वर्ग की समितियों को 20 प्रतिशत तथा अनु. जाति की समितियों को 25 प्रतिशत अनुदान दिया जाता है।

निजी मत्स्य पालकों को अनुदान- अनुसूचित जाति एवं अनुसूचित जनजाति के ऐसे मत्स्य कृषकों को जिन्होंने मत्स्य पालन करने हेतु तालाब पट्टे पर लिए हैं, उन्हें रु. 5,000 तक की सहायता अनुदान शासन की ओर से देय है, जो तालाब सुधार पर, तालाब की पट्टा राशि पर, मत्स्य बीज क्रय पर, नाव जाल क्रय पर तथा अन्य इनपुट्स पर दिया जाता है।

वित्तीय सहायता- ग्रामीण क्षेत्र के गरीबी रेखा के नीचे जीवनयापन करने वाले लोगों को स्वरोजगार योजना हेतु प्रशिक्षण, आर्थिक सहायता एवं मत्स्य पालन हेतु 10 वर्षीय पट्टे पर तालाब उपलब्ध कराया जाता है एवं इनके लिए ऋण एवं अनुदान दिलाया जाता है जोकि तालिका में दर्शाया गया है।

नोट - वित्तीय राशि या सरकार द्वारा पर दी जाने वाली सहायता संबंधी जानकारी प्राप्त सूचना के आधार पर है। हो सकता है इस राशियों में परिवर्तन हो गया होगा। इसकी नवीनतम जानकारी के लिए कृपया नजदीक मत्स्य विभाग में जाएँ।



मत्स्य कृषक विकास अभिकरण योजनांतर्गत आर्थिक सहायता

क्र. योजना/कार्यक्रम विवरण	ऋण लागत मूल्य (अधिकतम) प्रति हेक्टेयर	वर्गवार अनुदान पात्रता		अनुसूचित जाति/जनजाति वर्ग के कृषकों के लिए अनुदान
		सभी वर्ग के कृषकों के लिए अनुदान	वर्गवार अनुदान पात्रता	
1	2	3	4	5
1. तालाब मरम्मत एवं सुधार पानी के आगम/निर्गम द्वारा जाली लगाने हेतु अनुदान केवल एक बार	रु. 60000	लागत मूल्य का 20% अधिकतम रु.12000	लागत मूल्य का 20% अधिकतम रु.12000	
2. प्रथम वर्ग इनपुट्स लागत (मत्स्य बीज, मत्स्य आहार, उर्वरक, खाद व मत्स्य बीमारी के लिए औषधियां) हेतु	रु. 30000	लागत मूल्य का 20% अधिकतम रु.6000	लागत मूल्य का 20% अधिकतम रु.7500	
3. मछली पालन हेतु स्वयं की भूमि पर नवीन तालाब निर्माण (तालाब निर्माण, जल आगम/निर्गम द्वारा निर्माण, उथला ट्यूबवेल खनन हेतु)	रु. 20000	लागत मूल्य का 20% अधिकतम रु.40000	लागत मूल्य का 20% अधिकतम रु.50000	
4. समन्वित मछली पालन सह मुर्गी बत्तख/सूअर पालन	रु. 80000	लागत मूल्य का 20% अधिकतम रु.16000	लागत मूल्य का 20% अधिकतम रु.120000	
5. ऐरियेटर की स्थापना - मत्स्य उत्पादन वृद्धि हेतु 3000 किलो प्रति हेक्टेयर प्रति वर्ष मत्स्य उत्पादन तालाब पर	रु. 50000 1. हा.पा. ऐरियेटर/5 हा.पा. डीजल पम्प	रु. 12500 प्रति इकाई प्रति हेक्टेयर	रु. 12500 प्रति इकाई प्रति हेक्टेयर	
6. मत्स्य बीज उत्पादन हेतु मीठा फल हेचरी स्थापना (10 मिलियन फ्राय उत्पादन क्षमता की हेचरी हेतु)	रु. 800000	लागत मूल्य का 10% अधिकतम रु.80000	लागत मूल्य का 10% अधिकतम रु.80000	
7. मत्स्य आहार उत्पादन इकाई (भवन निर्माण व मशीनरी सहित इकाई निर्माण हेतु)	रु. 2500000	लागत मूल्य का 20% अधिकतम रु.5 लाख	लागत मूल्य का 20% अधिकतम रु.5 लाख	



THE KARNATAKA STATE CO-OPERATIVE AGRICULTURE AND RURAL DEVELOPMENT BANK LTD.

Tippu Sultan Palace Road, Bangalore - 560 018.

Telephone: 080-26702024, 26702074 Fax: 080-26705035

e-mail: kscardbank@yahoo.com

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

Advances (From inception to 30-09-2018) Over ₹ 5680.43 Crores

No. of loan cases sanctioned as on 30-09-2018 18.36 Lakhs

Share of Small & Marginal Farmers in Bank's financial assistance. 55.68%

STRIKINGLY INNOVATIVE PROGRAMMES INTRODUCED BY THE BANK

- Non-Farming Rural Enterprises, Rural Housing, S.R.T.O.
- Sericulture, Integrated Horticulture/ Floriculture, Medicinal Plants, Individual Dairy Development and Sheep / Goat rearing / Poultry/ Piggery / Rabbit Rearing / Fisheries and Fishing Boat
- Big and Small Lift Irrigation Schemes
- Rural Godowns / Agri Clinic & Agri Business Centres
- Purchase of Agriculture Lands
- Solar Lights/Solar Pumps
- Purchase of Two Wheelers
- Rain Water Harvesting Structures
- Vermi Compost Units
- Bio-digester
- Farm Mechanisation
- Combined Harvester
- JCB/Dozers
- Coffee curing, Drying yards (Paddy, Areca, Coffee etc.)
- Agricultural Implements
- Gold Loans, Salary Loans etc.

BANK ACCEPTS FIXED DEPOSITS

1. 91 days	7.00%	5. 0.25% of additional Interest to Senior Citizens
2. 181 days	8.00%	6. Bank advances Gold, Vehicle Loan, Salary, House Mortgage Loans at attractive rate of interest.
3. One year and upto two years	9.40%	7. Locker system available.
4. Two years and above	9.50%	

STRENGTHEN THE FARMERS' BANK

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

K. Shadakshari, Ex-MLA
President

Poornima .S, K.C.S.
Secretary I/C

A. C. Diwakara, K.C.S.
Managing Director



ABHYUDAYA
CO-OPERATIVE BANK LTD.
(MULTI - STATE SCHEDULED BANK)

Servicing Customer Since 1964...

Various Loans available at attractive Interest Rate



Housing Loan

- No Service Charge upto 31/12/ 2018

8.25%* (p.a.)



Vehicle Loan

- Concession in Service Charge upto 31/12/2018

9%* (p.a.)



2-Wheeler Loan

- Concession in Service Charge upto 31/12/2018

10% (p.a.)



Gold Loan

11% (p.a.)



Loan to Professionals

- Concession in Service Charge upto 31/12/2018

11.5%* (p.a.)



Personal Loan

12.5%* (p.a.)

*Condition apply



मत्स्य उद्योग के सामाजिक व आर्थिक प्रभाव

1. मत्स्य आर्थिकी से मत्स्य उद्योग समाज में क्रांतिकारी परिवर्तन की असीम संभावनाएं हैं।
2. मत्स्य आर्थिकी से जहां मत्स्य व्यापार में लगे लोगों का आर्थिक स्तर सुधारा है वहीं इस वर्ग के लोगों को समाज में प्रतिष्ठित स्थान बनाने का सुअवसर भी प्राप्त हुआ है।
3. ग्रामीण क्षेत्र के मत्स्य कृषकों ने विभिन्न माध्यमों से मत्स्य उद्योग में संलग्न होकर जहां अपना आर्थिक स्तर सुधारा है वहीं दूसरी ओर बाहरी परिवेश में रहकर समाज में फैली कुरीतियों को नष्ट कर अपने सामाजिक स्तर में काफी सुधार किया है।
4. वर्तमान परिवेश में महिलाओं की भागीदारी ने समाज में कुंठित जीवन जीने से बाहर निकलकर उच्च सामाजिक जीवन जीने में काफी सराहनीय प्रगति की है।
5. महिलाओं द्वारा स्वसहायता समूहों का गठन कर विभिन्न रोजगार अपनाकर एक-दूसरे के सहयोग से कार्य कर अपना आर्थिक स्तर तो सुधारा ही है तथा समाज को एक सूत्र में बांधने में काफी सफलता हासिल की है।
6. पूर्व के दशकों में इन परिवारों की आर्थिक दशा अच्छी नहीं थी तथा समाज के बंधनों के कारण घर की चारदीवारी से निकलना नामुमकिन था। परन्तु वर्तमान परिवेश में सामाजिक बंधनों को अनदेखा करते हुए अपने आर्थिक एवं सामाजिक स्तर को सुधारने के लिए सराहनीय कदम उठाए हैं।
7. आज उद्यमी पुरुष/महिलाओं का समाज में

उत्कृष्ट स्थान है। इनके द्वारा अपने बच्चों को उच्च शिक्षा के क्षेत्र में लाकर उनके भविष्य को संवारने एवं उच्च स्थान दिलाने के लिए एक सराहनीय कदम है। शिक्षा को समाज का एक मुख्य अंग बनाया गया है क्योंकि शिक्षित समाज ही एक उन्नत समाज बना सकता है तथा शिक्षित व्यक्ति ही अपने घर तथा समाज के विकास में अपना महत्वपूर्ण योगदान दे सकता है।

यह उद्योग रोजगार तथा खाद्य समस्या के समाधान में सहायक है। श्रम प्रधान उद्योग होने के कारण बड़ी संख्या में समाज के गरीब वर्गों को लाभदायक रोजगार प्रदान होता है जिससे इनकी आर्थिक स्थिति सुदृढ़ होती है। मत्स्य उद्योग के साथ-साथ कृषि व्यवसाय एवं अन्य व्यवसाय में जुड़े होने के कारण मछुआरों की प्रति व्यक्ति आय एवं कुल आय में भी वृद्धि होती है। मत्स्य उद्योग का सबसे बड़ा लाभ औषधियों के महत्व के रूप में है। इसका उपयोग अनेक दवाईयों के बनाने में किया जाता है। साथ ही मत्स्य में निहित प्रोटीन स्वास्थ्य के लिए अत्यंत लाभदायक होता है। मत्स्य जल शुद्धिकरण जल आपूर्ति में वृद्धि के लिए सहायक है। हमारे देश में भू-क्षेत्रफल का एक बड़ा हिस्सा ऐसा है जो नदियों, समुद्र व अन्य जल स्रोतों से ढका हुआ है और फसलोत्पादन के लिए उपलब्ध नहीं है, वहां मत्स्य पालन को बढ़ावा देकर अच्छी आय प्राप्त की जा सकती है। इस उद्योग के माध्यम से अन्य सहायक उद्योग को विकसित करके लाभ प्राप्त किया जा सकता है। यह उद्योग विदेशी मुद्रा अर्जित करने का प्रमुख साधन है।



भारत सरकार की पशुपालन से संबंधित कुछ महत्वपूर्ण कल्याणकारी योजनायें

डा. राम निवास* और चारु शर्मा**

भारत में ग्रामीण क्षेत्रों में डेयरी फार्मिंग एक बड़ी आजीविका का एक प्रमुख योग्यता है। ग्रामीणों क्षेत्र के लोगों को उनकी आजीविका के साधनों को बढ़ावा देने के लिए कई तरह की योजनाएं केंद्र सरकार द्वारा संचालित की जाती हैं। इन योजनाओं पर अनुदान का भी प्रावधान रखा गया है। किसान व आम ग्रामीण अनुदान प्राप्त कर आजीविका के साधनों को बेहतर बना सकते हैं। इसके लिए जरुरी है कि योजनाओं की जानकारी और अनुदान की प्रक्रियाओं को जानें।

राष्ट्रीय पशुधन बिमा योजना

इस योजना का शुभारम्भ मार्च 2015 को हुआ था। यह योजना नैशनल लाइवस्टॉक मिशन के अन्तर्गत रिस्क मैनेजमेंट इन्शुरन्स के नाम से आरम्भ की गयी है। इस केन्द्र प्रवर्तित योजना में जिले के समस्त पशुपालक भागीदार हो सकते हैं। इस योजना के अन्तर्गत गोवंशीय, भैंस, घोड़े, खच्चर, ऊर, भेड़, बकरी, सुकर व खरगोश को बीमित करने की पात्रता है। प्रत्येक हितग्राही 5 बड़े पशु तक अथवा 50 छोटे पशु भेड़, बकरी, सुकर व खरगोश तक का बीमा करवा सकता है। इस योजना के अन्तर्गत SC, ST व BPL में यापन कर रहे पशुपालकों को बिमा प्रिमियम का 70 प्रतिशत तथा अन्य पशुपालकों को बिमा प्रीमियम का 50 प्रतिशत की अनुदान की पात्रता है।

राष्ट्रीय गोकुल मिशन योजना

इस योजना का शुभारम्भ जुलाई 2014 को हुआ था। इस मिशन का उद्देश्य दुग्ध उत्पादन बढ़ाना, गायों की प्रजाती सुधारना, स्वस्थ विकसित आनुवांशिक बैल उपलब्ध कराना और स्वदेशी गायों की वृद्धि व सवधार्दन है। 14 राज्यों में 09 गोकुल ग्रामों की स्थापना हो चुकी है। 1000 गायों को पालने वाले संगठन/आश्रम/संस्थाओं को केन्द्रीय सहायता मिलेगी लेकिन शर्त यह है की 60 प्रतिशत गाये दुधारु व 40 प्रतिशत बिना दुध देने वाली होनी चाहिए। देश में 83 प्रतिशत गाये देशी प्रजाति की गाये हैं लेकिन उनकी देखभाल ठीक तरह से नहीं हो पा रही है। यह बोवाइन ब्रीडिंग और डेरी डेवलपमेंट, नैशनल प्रोग्राम का हिस्सा है।

गोकुल ग्राम-मिशन के तहत स्वदेशी पशु केंद्रों या गोकुल

*विषय विशेषज्ञ (पशुपालन)

**विषय विशेषज्ञ (शृंग, विज्ञान प्रसार शिक्षा), कृषि विज्ञान केन्द्र, पोकरण, राजस्थान।

ग्राम की स्थापना स्वदेशी नरलों के प्रजनन इलाकों में की गयी। गोकुल ग्राम की स्थापना पीपीपी (पब्लिक प्राइवेट पार्टनरशिप) मॉडल के तहत की जाएगी और इसकी स्थापना देशी प्रजनन इलाकों में शहरी पशु आवास के लिए महानगरों के निकट की गयी। गोकुल ग्राम एक संस्थान होगा जो निम्नलिखित चीजों की बिक्री के जरिए आर्थिक संसाधन पैदा करेगा।

- 1 - दूध
- 2 - जैविक खाद
- 3 - केंचुआ-खाद
- 4 - मूत्र डिस्टिलेट
- 5 - घेरेलू खपत के लिए बायो गैस से बिजली का उत्पादन
- 6 - पशु उत्पादों की बिक्री

ये गतिविधियां राष्ट्रीय गोकुल ग्रामों को आत्मनिर्भर संगठन बनाएगा। गोकुल मिशन राज्य कार्यव्यवयन एजेंसियों (एसएआई जैसे पशुधन विकास बोर्ड, एलडीबी) के जरिए कार्यान्वयित किया गया स्वदेशी पशु विभाग में सर्वश्रेष्ठ जर्मप्लाजम के साथ भूमिका निभाने वाली सभी एजेंसियां जैसे सीएफएसपीटीआई, सीसीबीएफ, भारतीय कृषि अनुसंधान परिषद, विश्वविद्यालयों, कालेजों, एनजीओ, सहकारी समितियां और गौशालाएं “प्रतिभागी एजेंसियां” हैं।

आहार संतुलन कार्यक्रम

“एनडीडीबी द्वारा दुधारु पशुओं के आहार संतुलन पर किसानों को शिक्षित करने हेतु शुरू किया गया एक कार्यक्रम।” किसान अपने पारंपरिक ज्ञान के आधार पर, जो उन्हें पीढ़ी दर पीढ़ी ज्ञात हुआ है तथा स्थानीय क्षेत्र में उपलब्ध एक या दो खाद्य पदार्थ जैसे कि चोकर, खल, चूनी, अनाज के दाने आदि और मौसम के हिसाब से हरा चारा तथा फसल अवशेष/भूसा अपने पशुओं को खिलाते रहते हैं। बहुत कम किसान अपने पशुओं को रोजाना खनिज मिश्रण खिलाते भी हैं। जो खिलाते भी हैं वो 25 से 50 ग्राम ही देते हैं। पशुओं को दिए जाने वाले चारे तथा आहार की मात्रा ज्यादातर उनकी आवश्यकताओं से कम या अधिक होती है तथा उनके आहार में प्रोटीन, ऊर्जा या खनिज का असंतुलन हो जाता है। असंतुलित आहार से पशु दूध कम देता है, उत्पादन लागत



The Haryana State Co-operative Agriculture and Rural Development Bank Ltd., Panchkula.

Shakarita Bhawan, Bays No.31-34, Sector-2, Panchkula, Haryana.

The Haryana State Cooperative Agriculture and Rural Development Bank Ltd. is the specialized 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 farmer for the following purpose.

Sr. No.	Name of the Scheme	Period	Scale of finance
1	Minor Irrigation, WCS/UGPL	7 year	₹ 1.20 lacs to 5.00 lacs
2	Farm Mechanisation	5 - 7 year	85% of cost of mechanisation
3	Purchase of land	7 year	Upto 15.00 lacs
4	Horticulture/Farm Forestry Medicinal & Aromatic plant	5 - 9 year	₹ 65000 to Rs. 4.40 lac per acre
5	Animal Husbandry	5 - 9 year	₹ 75000 to 14 lac. 5 unit
6	Rural Godowns	7 year	90% of the Project Cost
7	Rural Housing	Up to 10 years	2.00 lacs to 7 lacs

NON-FARM SECTOR

Sr. No.	Name of the Scheme	Period	Scale of finance
1	Marriage places	Upto 10 years	90% of the Project Cost
2	Community Hall	-do-	
3	Village/Cottage Industry	-do-	
4	Public Transport Vehicles	-do-	
5	Rural Education Infrastructure	-do-	
6	Other SSI Units	-do-	

The Loan for the purpose of Non-Farm Sector, Rural Housing and Purchase of land are being advanced @ 13.50% p.a.w.e.f. date 07.6.2018.

Note: For further details, kindly contact the Haryana State Cooperative Agril & Rural Dev. Bank Ltd., Panchkula and the District Coop. Agril & Rural Dev. Banks at Districts level and its branches at Tehsil & Sub-Tehsil level in the State.

DHANESH ADALAKHA

Chairman

Phone: 0172-2583408

NARESH GOYAL

Managing Director

Phone: 0172-2587040

अधिक रहती है तथा पशु का स्वास्थ्य और प्रजनन क्षमता भी प्रभावित होती है। इसलिए, किसानों को दुधाल पशुओं के आहार संतुलन पर शिक्षित करना अत्यंत आवश्यक है। इसे ध्यान में रखते हुए एन.डी.डी.बी. ने एक सूचना नेटवर्क (इनाफ) विकसित किया है जो उत्पादकता बढ़ाने के सभी क्षेत्रों को समाविष्ट करता है। जैसे पशु पंजीकरण तथा पहचान, कृत्रिम गर्भाधान सेवाएं, दुग्ध रिकार्डिंग तथा संतति परीक्षण, राशन संतुलन स्वास्थ्य (उपचार, निदान, परीक्षण, टीकाकरण तथा प्रकोप), सलाह सेवाएं तथा इनपुट आपूर्ति, दुध घटक, फीड परीक्षण और रोग निदान प्रयोगशालाएं आदि। इनाफ एप्लीकेशन का उपयोग संतति परीक्षण कार्यक्रमों में किया जा रहा है। ये कार्यक्रम एन.डी.डी.बी. द्वारा मिल्क यूनियनों तथा कृत्रिम गर्भाधान सेवा प्रदाताओं और राशन संतुलन कार्यक्रम कार्यान्वयन एजेंसियों के साथ साझेदारी में लागु किए जा रहे हैं। स्वास्थ्य और प्रयोगशाला मॉड्यूलों का भी प्रायोगिक परीक्षण किया जा चुका है और वे उपयोग के लिए उपलब्ध हैं। इस सॉफ्टवेयर की मदद से पशुओं के प्रकार जैसे कि गाय या भैंस, पशु की आयु, दुग्ध उत्पादन, दुग्ध वसा, पशुओं को खिलाने की प्रथाओं को ध्यान में रखते हुए संतुलित आहार बनाया जाता है, और दूध उत्पादकों को उनके पशुओं के लिए स्थानीय स्तर पर उपलब्ध खाद्य पदार्थों की मात्रा को क्षेत्र विशिष्ट खनिज मिश्रण के साथ समायोजित करने की सलाह दी जाती है।

ई-पशु हाट पोर्टल

केंद्र सरकार घर बैठ कर ऑनलाइन पशु (मवेशी) खरीद फरोक्त करने के लिए ई-पशु हाट पोर्टल शुरू किया है। इस पोर्टल के माध्यम से किसान घर बैठ कर मवेशी खरीद और बेच सकते हैं। ऑनलाइन पोर्टल ई-पशु हाट की सहायता से सरकार किसानों और उद्यमियों को डेयरी कारोबार में एक साथ ले आएगी। इस पोर्टल के जरिये लोग पशुधन, फोज़न सीमेन और भूणों की खरीद फरोक्त कर सकते हैं। इस पोर्टल पर पशुधन का पुरा विवरण फोटो सहित उपलब्ध है। इसमें पशुधन की खरीद के बाद इसकी ढुलाई की भी सुविधा भी उपलब्ध है। प्रमाणित पशुधन के साथ-साथ निजी संस्थाओं को अप्रमाणित पशुधन खरीदने और बेचने की अनुमति है। अगर उत्तर प्रदेश के किसान को राजस्थान की गाय या हरियाणा की भैंस खरीदनी है तो उसे खरीदने में दिक्कत होती है लेकिन ई-पशु हाट के माध्यम से किसान आराम से किसी भी राज्य का पशुधन खरीद सकता है। इस पोर्टल पर किसान फी लॉगिन कर सकते हैं। पशुपालक को खरीद फरोक्त को पूरा करने के लिए उन्हें पोर्टल पर रजिस्टर करना होगा।

डेयरी इंटरप्रेव्योरशिप डेवलपमेंट स्कीम (DEDS)

भारत सरकार ने इस योजना की शुरुवात सितम्बर 2010 से की है। इस योजना के तहत डेयरी डेयरी इंटरप्रेव्योरशिप डेवलपमेंट स्कीम के तहत दुग्ध-उत्पादन करने वालों को वित्तीय सहयोग किया जाता है। यह वित्तीय सहयोग छोटे किसानों तथा भूमिहीन मजदुरों को प्रमुख रूप से दिया जाता है। फार्मिंग बिज़नेस करने की चाह रखने वाले व्यक्ति को कुल प्रोजेक्ट कोर्ट का 33.33 प्रतिशत तक की सदिचडी देने का प्रावधान है। इसके तहत छोटे डेयरी फार्म खोलने, उन्नत नस्ल की गाय अथवा भैंस पालन, मुर्गीपालन, मछली पालन, सुकर पालन आदि की खरीद के लिए सहायता की जाती है। इस योजना का संपादन भारत सरकार नाबार्ड की सहायता से करता है। नाबार्ड के सहयोग से डेयरी उद्योग प्रारंभ करने के लिए छोटे किसानों और भूमिहीन मजदुरों को बैंक की ओर से लोन दिलाया जाता है। बैंक से लोन प्राप्त करने के लिए किसान अपने नजदीक के वाणिज्यिक बैंक, क्षेत्रीय ग्रामीण बैंक अथवा को-ऑपरेटिव बैंक को मवेशी की खरीद के लिए प्रार्थना पत्र के साथ आवेदन कर सकते हैं। ये आवेदन प्रपत्र सभी बैंकों में उपलब्ध होते हैं।

बड़े पैमाने पर दुग्ध-उत्पादन के लिए डेयरी फॉर्म की स्थापना के लिए एक प्रोजेक्ट रिपोर्ट देना होता है। संस्था द्वारा दिये जाने वाले वित्तीय सहयोग में मवेशी की खरीद, शेड के निर्माण और जरूरी यंत्रों की खरीद आदि शामिल है। प्रारंभिक एक व दो महीने के लिए मवेशियों के चारा का इंतजाम के लिए लगने वाली राशि को टर्म लोन के रूप में दिया जाता है। टर्म लोन में जमीन के विकास, घेराबंदी, जलाशय, पंपसेट लगाने, दुध के प्रोसेसिंग की सुविधाएं, गोदाम, ट्रांसपोर्ट सुविधा आदि के लिए भी लोन देने के विषय में बैंक विचार करता है। जमीन खरीदने के लिए लोन नहीं दिया जाता है। बड़े पैमाने पर दुग्ध-उत्पादन के लिए डेयरी फॉर्म की सीधापना के लिए एक प्रोजेक्ट रिपोर्ट देना होता है। संस्था द्वारा दिये जाने वाले वित्तीय सहयोग में मवेशी की खरीद, शेड के निर्माण और जरूरी यंत्रों की खरीद आदि शामिल है। प्रारंभिक एक व दो महीने के लिए मवेशियों के चारा का इंतजाम के लिए लगने वाली राशि को टर्म लोन के रूप में दिया जाता है। टर्म लोन में जमीन के विकास, घेराबंदी, जलाशय, पंपसेट लगाने, दुध के प्रोसेसिंग की सुविधाएं, गोदाम, ट्रांसपोर्ट सुविधा आदि के लिए भी लोन देने के विषय में बैंक विचार करता है। जमीन खरीदने के लिए लोन नहीं दिया जाता है।



Niti Ayog Wants NCUI To Constitute High-level Consultants' Committee

The meeting of cooperators led by NCUI President with the Vice-Chairman of Niti Aayog Shri Rajiv Kumar turned out to be a brain-storming session both in form and spirit as the latter wanted to know why despite its multiple contributions, the cooperative sector has not been able to exert any influence on the policy makers. Giving details of the meeting, NCUI President Dr Chandra Pal Singh Yadav said Kumar wanted a high-level consultants' committee to be constituted by the apex body NCUI to find out why the sector has failed to generate the impact it should have, given its ubiquitous presence in all walks of life. The Consultants' committee should have one or two professors from IIMs, suggested Niti Aayog Vice-Chairman who has taken over in place of Arvind Panagariya.

The Niti Aayog Vice-Chairman also suggested a fresh bid to restore the co-op in the govt scheme of things should be made after the findings of the Consultant Committee are available. The cooperators lauded the positive attitude displayed by Shri Kumar and agreed to almost all the points made by him.

India should leverage its livestock treasure beyond milk

Export of frozen buffalo meat from India is almost a 45-year-old trade with country's annual foreign exchange earnings has gone up more than ten times to over \$ 4 billion and can even double in the next five years. Buffalo meat processing can, be the backbone of the dairy industry. Like the latter, it has a direct connection with the farmer. It ensures that he gets 30-40% of the cost of his animal as terminal value once its active lactation/reproductive age is over. This money he, then, invests upfront in a new milk-yielding animal.

There's no better evidence of the above symbiotic relation than Uttar Pradesh, which is India's largest milk producer and also houses more than half of the country's 80 standalone and integrated abattoir approved by the Agricultural & Processed Food Products Export Development Authority (APEDA). Roughly two-thirds of frozen buffalo meat exports from India is accounted for by UP.

INDIA'S LIVESTOCK POPULATION (million numbers)

CATTLE	190.90
BUFFALOES	108.70
GOATS	135.17
SHEEP	65.07
PIGS	10.29
HORSES & PONIES	0.63
CAMELS	0.40
DONKEYS & MULES	0.52
YAKS	0.08
TOTAL	512.06

Source : Livestock Census 2012.

Besides NCUI President, the delegation of cooperators included Chief Executive Shri N Satya Narayana, Shri K Sivadasan Nair, Shri G H Amin and a representative of ICA A-P Mrs. Savitri Singh. NCUI also gave a brief description of the activities undertaken by the sector before the Vice-Chairman. Despite its contributions, the co-operative sector has been sliding in the government discourse ~ be it budget making or any other platforms. The meeting with the Vice-Chairman was aimed at correcting the perception, Yadav stated. There were discussions about both the long term vision of NCUI and how the sector could be capable of taking the govt schemes to the remotest parts of the country using its massive network besides taking care of the training needs of cooperators in the country.

The issue of COBI was also raised. "There are co-op banks at the state level but there is none at the national level; given the vast network of co-ops in the country it is only natural that a bank like COBI should take roots.

India should leverage its livestock treasure beyond milk

Ironically, the dairy industry is today going through an unprecedented crisis, with procurement prices of milk for farmers falling by 25-30% in the last one year. Yet, no thought is being given to the role that the livestock meat industry can play to improve the situation. United Nations' Food and Agriculture Organization has estimated that more than 300 million poor families globally survive on the income from just small ruminants, viz. sheep and goat. Indian buffalo meat is currently exported to about 70 countries. A lot of Indian buffalo meat is, in any case, making its way to China through Vietnam. Similarly, the government can negotiate with Iran, Philippines and Russia, to allow us access to their wet (fresh meat) markets, as against sales only to processors. Also, there should be more aggressive programme for eradication of Foot and Mouth Disease, which can be a game-changer for our exports of both dairy and meat products.

Besides, the Salvaging and Rearing of Male Buffalo Calves Scheme must be revived. These animals are, at present, simply allowed to die, when farmers can be incentivised to rear them till they are 23-24 months for sale to abattoir. The scheme started by the Centre, which is currently defunct, was a truly revolutionary one with huge potential to create rural livelihoods and supplement the income of farmers.

A major by-product of the setting up of state-of-the-art



abattoir in recent times has been the increased availability of good-quality buffalo hide that is freshly flayed, fleshed, salted and folded for supply to the leather industry. But unfortunately, there is a 60% duty on export of raw salted hides produced from even APEDA-approved abattoir. And with tanneries in many parts — whether in UP's Kanpur- Unnao belt or Vellore, Dindigul and Erode districts of Tamil

Karnataka budget: Kumaraswamy announces ₹ 34,000 crore farm loan waiver

The Chief Minister of Karnataka, Shri Kumaraswamy announced a ₹34,000 crore farm loan waiver scheme for 17.32 lakh farmers, who took loans up to ₹2 lakh and defaulted on payments till December 31, 2017. Pending farm loans up to ₹2 lakh will be waived off by all banks on the basis of a guarantee by the government through a bond to enable banks to issue clearance certificates to farmers to avail new crop loans, said economic advisor S Subramanya. The state government this year will compensate banks to the tune of ₹ 10,500 crore for the loan waiver and will generate funds for the payment mostly through an increase in taxes on fuel,

How the 1.5-times formula works out MSP?

The Centre announced steep hikes in the minimum support prices (MSPs) for most crops planted in the current kharif season. This was based on a new formula, which pays farmers 1.5 times their estimated production costs.

How does the government fix MSPs of crops before every planting season?

The Commission for Agricultural Costs & Prices (CACP) in the Ministry of Agriculture recommends MSPs for 23 crops. These include 14 grown during the kharif/post-monsoon season (see table) and six in rabi/winter (wheat, barley, chana, masur, mustard and safflower), apart from sugarcane, jute and copra. The CACP is supposed to consider various factors while recommending the MSP for a commodity, including cost of cultivation. It also takes into account the supply and demand situation for the commodity; market price trends (domestic and global) and parity vis-à-vis other crops; and implications for consumers (inflation), environment (soil and water use) and terms of trade between agriculture and non-agriculture sectors.

The Budget for 2018-19 announced that MSPs would henceforth be fixed at 1½ times of the production costs for crops as a "pre-determined principle". Simply put, the CACP's job will be only to estimate production costs for a season and recommend the MSPs by applying the 1.5-times

Nadu - closing down due to environmental pollution issues and also being shut during the Kumbh/Magh Mela season in January-February, the effects of a perverse duty are only compounding. Milk is today India's largest crop by value and everyone agrees that dairying is fundamental to doubling farmers' income.

electricity, motor vehicles and alcohol, announced in the 2018-19 budget.

In the second phase of the scheme, the coalition government has also proposed an incentive of ₹ 25,000 each for 27.67 lakh farmers who have repaid their loans on time "to prevent complaints that only defaulters have benefited", Kumaraswamy said. The loan waiver will be restricted to small farmers. The budget involves an increase in state borrowing to the tune of over ₹10,000 crore over the nearly ₹ 35,000 crore borrowed for the 2017-18 fiscal period.

How is this production cost arrived at?

formula. Thus, the all-India average production cost for paddy in 2018-19 has been projected at ₹ 1,166 per quintal, 1.5 times of which is ₹ 1,749 - rounded off to an MSP of ₹ 1,750 per quintal.

How is this production cost arrived at?

The CACP does not do any field-based cost estimates itself. It merely makes projections using state-wise, crop-specific production cost estimates provided by the Directorate of Economics & Statistics in the Agriculture Ministry. The latter are, however, generally available with a three-year lag. For the 2018-19 season, the CACP has used the directorate's state-wise cost estimates for the latest three years, from 2013-14 to 2015-16. These have been projected for 2018-19 by assessing likely changes in input costs based on the latest price data from other sources such as the Labour Bureau (for wages) and Office of the Economic Adviser (which compiles wholesale prices). The CACP further projects three kinds of production cost for every crop, both at state and all-India average levels. 'A2' covers all paid-out costs directly incurred by the farmer - in cash and kind - on seeds, fertilisers, pesticides, hired labour, leased-in land, fuel, irrigation, etc. 'A2+FL' includes A2 plus an imputed value of unpaid family labour. 'C2' is a more comprehensive cost that factors in rentals and interest forgone on owned land and fixed capital assets, on top of A2+FL.



Which production costs have been taken in fixing the MSPs for this kharif season?

Finance Minister's Budget speech did not specify the cost on which the 1.5-times formula was to be computed. But the CACP's 'Price Policy for Kharif Crops: The Marketing Season 2018-19' report states that its MSP recommendation is based on 1.5 times the A2+FL costs. From the accompanying table, it can be seen the MSPs for 2018-19 derived from this formula are substantially higher than last year's. The increases work out to more than 10% for 11 out of the 14 kharif crops.

Farm activists, however, say that the 1.5-times MSP formula - originally recommended by the National Commission for Farmers headed by agricultural scientist M S Swaminathan and promised in the BJP's 2014 Lok Sabha election manifesto - should have been applied on the C2 costs. Had that been done, the MSP for common paddy alone (on a C2 cost of

₹1,560) would have been ₹ 2,340 per quintal, and not ₹ 1,750 as announced.

THE VARIABLES IN THE EQUATION

CROP	A2+FL COST	C2 COST	MSP 2017-18	MSP 2018-19
Paddy	1,166	1,560	1,550-1,590	1,750-1,770
Jowar	1,619	2,183	1,700-1,725	2,430-2,450
Rajra	990	1,324	1,425	1,950
Ragi	1,931	2,370	1,900	2,897
Maize	1,131	1,480	1,425	1,700
Tur	3,432	4,981	5,450	5,675
Moong	4,650	6,161	5,575	6,975
Urad	3,438	4,989	5,400	5,600
Groundnut	3,260	4,886	4,450	4,890
Sunflower	3,592	4,501	4,800	5,388
Soyabean	2,266	2,972	3,050	3,399
Sesamum	4,166	6,053	5,300	6,249
Nigerseed	3,918	5,135	4,650	5,877
Cotton	3,433	4,514	4,020-4,320	5,150-5,450

All figures in ₹/quintal. A2+FL and C2 costs based CACP projection for 2018-19; price ranges of paddy for 'Common' and 'Grade A' varieties; of jowar for Hybrid and Malandi varieties; of cotton for Medium-Staple and Long-Staple varieties

Ryots strike gold with passion fruit

Passion fruit is the new passion for farmers of the high ranges here who were facing a crisis following drop in prices of cash crops. The easy-to-grow fruit now gets good prices and the hill-produce merchants at Kattappana procure the fruit commercially grown by the farmers. The price per kilogram of the fruit at the Kattappana market is ₹45 and the companies that make juice, jam and syrup collect the fruits on a daily basis. Farmers grow both the yellow and purple varieties with the latter having an edge in the market.

K.V. Francis, a farmer from Kanchiyar, said that he had been growing passion fruit for the past three years. Compared to other fruits, passion fruit is easy to grow. He cultivates the fruit organically. The only requirement is a pandal for the vines to spread. He said that the soil and climatic conditions of high ranges were most suitable for passion fruit, though its commercial cultivation began in the area only recently. Those with limited land area grew the fruit on the terrace. It not only provided green cover on the terrace, but gave additional income to the family, he said.

Centre plans to set up fisheries infrastructure development fund

The Union Government is planning to set up a fisheries infrastructure development fund soon to give a boost to the sector as part of the blue revolution project and it will be of immense help to individuals, entrepreneurs, consortia and other stake-holders, according to E Ramesh Kumar, Joint Secretary (Fisheries) in the Union Ministry of Agriculture. He said NABARD, scheduled banks and other government agencies would be involved in implementing the scheme and roughly ₹ 7,500 crore would be set apart for the fund. "Entrepreneurs and others in the fisheries sector can get finance at 6 per cent rate of interest for infra projects and the

Last year, price of passion fruit ranged from ₹20 to ₹25. The high demand this season is said to be due to the increase in the number of firms engaged in manufacturing value-added products. The fruit can be harvested eight to nine months from sowing the seeds. The harvesting season is from June to August. Unlike other crops, the crop grows in natural conditions and a single vine can produce hundreds of fruits. The hard outer cover protects the fruits from pest attacks.

Nutritious

Since the fruit was rich in minerals and vitamins and could be grown without pesticides, it had become a favourite of juice manufacturers. "It can also be used for making wine and its outer cover has demand in pickle units," said a trader at Kattappana. He said the fruit had good prospects for exports. As per the estimate of traders, more than 10 tonnes of passion fruit is sent from Kattappana to other districts and States. Besides, a Kothamangalam-based company directly procures the fruit from high ranges.

repayment period will be 12 years, with a moratorium of two years,". He said another scheme to convert fishing trawlers into tuna long-liners to encourage deep-sea fishing was in the offing and "Andhra Pradesh, especially Visakhapatnam, could emerge as a major centre for tuna fishing." Kumar also spoke about the welfare schemes for fishermen, such as introduction of bio-metric cards for them, and steps to ensure safety of fishermen at sea.

He said the target was to boost fish production in the country to 15 million tonnes by 2021 from the present level of roughly 11.5-12 mt. He sounded a note of caution, referring to the



use of anti-biotics in fish and shrimp culture and how some of the shrimp consignments from Andhra Pradesh were rejected in the western markets due to residues.

The Joint Secretary said a concerted campaign should be taken up to educate the farmers and others on the harmful effects of anti-biotics and chemicals in culture and preservation of fish. Presence of formalin in the fish, found in the Chennai markets, was a matter of concern.

Maharashtra cooperative bank to lease out sugar mills to recover loans

The Maharashtra State Cooperative (MSC) Bank has decided to lease out defaulting sugar mills to recover pending loans instead of going for outright sale of these mills. The bank has successfully leased out two mills in Osmanabad recently and is working on a policy for such lease, said Vidyadhar Anaskar, chairman of the board of administrators. They will formulate a policy with the Maharashtra Cooperative Development Corporation and implement it after consent from the High Court.

Tripura Pineapples headed for Dubai

With the season of GI-tagged 'Queen' pineapples coming to an end, Tripura has started shipping the 'Kew' variety of the fruit to Dubai. The first consignment of 1.5 tonnes of 'Kew' pineapples was shipped to the Emirates from Darchai in Unakoti district, about 130 km from here, Minister of Agriculture Pranajit Singha Roy said. As the 'Queen' variety of pineapple was well-received by people in different parts of the country and abroad, we have decided to transport the

AP Fisheries Commissioner Ram Shankar Naik said kisan credit cards were being issued to fish farmers, but insurance cover should also be provided to them under the Prime Minister's Fasal Bima Yojana.

U Viswanadha Raju, Chairman of the Bhimavaram-based Ananda group, one of the leading shrimp exporters from AP, said India ranked second in fish production in the world.

Smart technologies in farming

China and India being the most populous countries in the world also have the largest penetration of smartphones that has helped their farming communities. Around 96% of China's villages are connected to the Internet and each rural household, on an average, has three mobile phones. The aim of any country's development projects is to help farmers improve methods of farming through innovative and efficient agriculture methods. Their growth can aim to bring in development that plays an integral fight against global hunger.

Farmers in Bihar, too, now have a dedicated mobile application for them. Bihar Agriculture University has come up with a mobile app called Bihar Krishi App, which can be downloaded from Play Store on one's smartphone. The app helps farmers in several manners, including crop management, horticulture, opportunities in agriculture sector, weather-related information, advice of experts on questions asked by farmers and even specific information about the quality of soil one is practising farming on and use of fertilisers needed for the given soil.

There are around 25 such mills involving total defaults of ₹ 500 crore. The MSC Bank has taken possession of the 25 cooperative sugar mills after they had defaulted in repayment of the pledge loans. These loans are used for starting operations and paying cane growers. In case of defaults, the bank takes over the mills under Sarfaesi Act, 2002.

'Kew' variety too," he said.

The 'Kew' pineapple would grow for one more month or so, which gives Tripura an opportunity to tap the market for the fruit even further, the minister stated. Now that the 'Queen' pineapple has been "brand positioned" in the international fruit market, Pranajit said, the 'Kew' variety will easily get its customers.

Agriculture, along with fisheries and forestry, is one of the largest contributors to the gross domestic product in India. A Boston Consulting Group study says that by 2020, about 315 million Indians living in rural areas will be connected to the Internet, compared to 120 million at present. In semi-urban and rural areas, there is a huge potential telecom user base that needs relevant and affordable content, connectivity and 4G devices.

In addition to weather updates, facts and figures that were once the scribbled domain of old receipts and tattered pieces of paper are now organised on a smartphone. As more farmers get access to smartphones, text messages could be used to deliver information almost in real time. Smartphones, with camera and GPS features, are potentially strengthening small-scale farmers even further. Farmers are also using smartphones to simplify their lives by performing tasks such as starting or stopping centre pivot irrigation systems. Mobiles can help farmers improve agricultural productivity by giving them access to basic financial services, new agricultural techniques and new markets, in



turn helping them to secure better prices for crops and a better return on investments. As their income improves with

NABARD working on ways to boost funding for farmer producer organisations

In a bid to bolster the resources of farmer producer organisations (FPOs), the NABARD is looking to help them take the subordinated debt route. It is also working to facilitate guarantees so that banks are encouraged to lend to them.

Primary producers

FPOs are legal entities formed by primary producers such as farmers, milk producers and fishermen. Through aggregation under the aegis of FPOs, the producers can utilise economies of scale. They also have better bargaining power vis-à-vis

each harvest, they can invest in better seeds, fertiliser and chemicals.

bulk buyers of produce and bulk suppliers of inputs. As of March-end, NABARD had supported around 4,000 FPOs across the country, of which over 2,000 are registered entities actively into agricultural activities.

Pointing out that FPOs are typically less than three years old, Bhanwala said banks will finance them only when they stabilise their cash flows. NABARD has developed a portal where information on FPOs - membership details, registration, capacity formation and economic activity - is made available.

Jackfruit ice-cream using millet extracts - a big hit at AgriIntex

Jackfruit flavoured ice-cream made using millet extract turned out to be an instant hit at AgriIntex 2018. The four-day expo, now underway at the Codissia Trade Fair Grounds, has always been a crowd-puller. Developed by the students of Food and Dairy Technology, Tamil Nadu Veterinary and Animal Sciences University (TANUVAS), the ice-cream was prepared and marketed by members of Cuddalore District Value-added Food Producers' Society.

PP Manimozhi, a member of the Society, said he underwent training on the use of millet extract for making of ice-cream four months back. "The town Panruti is known for jackfruits. We decided to use the jackfruit pulp (not essence) in the making of the ice-cream and Agri-Intex as the launch pad for

commercialising the product. The response has been overwhelming," said this 60-year old entrepreneur.

D Bhaskaran, Dean, TANUVAS, said the institute developed such technologies for incorporation by farmers under the Healthy India project. It is a five-year project (2016-21) at an outlay of ₹275.60 lakh from the Department of Science and Technology - National Science and Technology Entrepreneurship Development Board. The institute has also come up with milk-protein enriched noodles for children, refined wheat-flour noodles and fibre-enriched noodles as well. "It took us close to eight years to develop noodles," said A Karthiayani, an assistant professor. Bhaskaran said Omega 3 enriched chocolate and more are on the offing.

IMF projects 7.3% growth for India in 2018

The International Monetary Fund (IMF) produced a growth rate of 7.3% for India in the 7.4% in 2019, against 6.7% in 2017, making it the fastest growing country among major economies. However, the latest growth rate projection for India is slightly less – 0.1% for 2018 and 0.3% for 2019 – than its April projections. "India's growth rate is expected to rise from 6.7% in 2017 to 7.3% in 2018 and 7.5% in 2019, as drags from the currency exchange initiative and the introduction of the goods and services tax fade", said IMF's latest World

Economic Outlook (WEO) update. "The projection is 0.1 and 0.3% points lower for 2018 and 2019, respectively, than in the April WEO, reflecting negative effects of higher oil prices on domestic demand and faster than anticipated monetary policy tightening due to higher expected inflation," it said. Despite this slight downgrade in its projection, India continues to outperform China, IMF's, WEO update figures reflect.

Cane fair and remunerative price hiked by ₹ 20/quintal

The Narendra Modi government has hiked the fair and remunerative price (FRP) of sugarcane for the ensuing 2018-19 crushing season (October-September) by ₹20 per quintal. The new FRP of ₹275 per quintal is linked to a higher basic sugar recovery of 10% of cane. This is against the FRP of ₹255 per quintal for the 2017-18 season, which is linked to a basic recovery of only 9.5%. ₹ 20 per quintal increase will be effective only in states where average sugar recovery is

below 10%: Tamil Nadu, Andhra Pradesh and Madhya Pradesh. Punjab, Bihar and Uttarakhand, too, have sub-10% recovery, but state governments there declare ("advice") prices above the Centre's FRP. On the other hand, mills in Maharashtra will not have to fork out the entire extra ₹ 20/quintal FRP.

The Centre's FRP formula entails a premium of ₹2.75 per quintal payable for every 0.1 percentage point increase



above the basic recovery of 10%. Assuming the average sugar recovery for the state in 2018-19 at 11.24% – the same as for this season – that premium works out to ₹ 34.1 (₹ 2.75

Centre approves spl package for Maha irrigation projects

The NDA government approved a special package of ₹3,412 crore for completing 91 irrigation projects in the suicide-prone 14 districts in Vidarbha and Marathwada. TOI had reported on the package announced by the Centre on July 19. Water resources minister Girish Mahajan confirmed that the centrally sponsored scheme of a special package for completion of irrigation projects to address agrarian distress in Vidarbha and Marathwada and the chronically drought-prone areas in the rest of Maharashtra has been approved. While the total cost of the 91 projects is ₹13,651 crore, the Centre will provide financial assistance of ₹3,412 crore.

Telangana farmers to get ₹ 5 lakh insurance cover

RythuBeema, life insurance scheme for farmers, has been kicked off in Telangana, with the Agriculture, Finance and Power Ministers organising meetings in different parts of the State to give away the policy bonds to the eligible farmers. Beginning August 15, farmers in the age group of 18 to 59 years will get an insurance cover of ₹5 lakh each. The premium per head has been pegged at ₹2,271. Farmers' unions, however, demand that the upper age limit of 59 years is too low as farmers much older than that practice

multiplied by 1.24 divided by 0.1). The effective price payable in 2018-19 will, then, be the basic FRP of ₹ 275 plus ₹ 34.1 or ₹ 309.10 per quintal.

"once completed the projects, an estimated 3.76 lakh hectares of land will come under irrigation. This will help tackle the agrarian crisis in Vidarbha and Marathwada," Mahajan said. While 66 projects are in the Vidarbha region which includes districts like Amravati, Akola, Washim, Yavatmal, Buldhana and Wardha, the remaining 17 are in Marathwada which has places such as Aurangabad, Jalna, Nanded, Latur and Beed. It has been proposed to provide an outlay of ₹2,758.35 crore in 2018-19, followed by ₹3,846.26 crore in 2019-20, ₹2,848.78 crore in 2020-21 and ₹1,729.24 crore in 2021-22.

Maharashtra govt to set up bamboo promotion body

The Maharashtra government has decided to form a Bamboo Promotion Foundation to promote bamboo products in the State with the help of Tata Trust.

The seed capital of ₹20 crore for the Foundation will be provided by the State government. Tata Trust has committed ₹5 crore to the foundation. Out of the total forest cover in Maharashtra, about 13% is covered by bamboo. A State government committee was also set up in 2017 for

agriculture in large numbers. The State Government has tied up with the LIC to roll out the scheme. The Government is spending ₹ 1,000 crore towards premium payment on behalf of the farmers. In case of death of the insured farmer, the kin will get the insured sum within ten days of the death. "the RythuBandhu scheme, which provides a financial assistance of ₹ 8,000 to every farmer, and RythuBeema would go a long way in protecting the interests of farmers," the Minister said.

Meghalaya bets on community ranches, desi breeds to boost dairy production

Meghalaya, which is dependent on other States for its milk requirements, wants to become self-sufficient in milk production by 2022. The State, which has launched a milk mission, is planning to develop community ranches at the village level and to induct indigenous cattle breeds such as Sahiwal, Gir, Rathi, Red Sindhi and Thaparkar to achieve its goal. Describing the State's initiatives over the phone and via email, KN Kumar, Agriculture Production Commissioner and Additional Chief Secretary of Meghalaya, told that the per capita availability of milk in the State is 83 gm a day, much below the national figure of 355 gm.

promoting bamboo, which had recommended the formation of the foundation. The foundation will help in strengthening the bamboo growing areas in the State, create a marketplace for bamboo trade and set up three clusters for creating bamboo products. It will also implement the bamboo based incense stick project. For promoting bamboo the Foundation will also create a knowledge and information centre, the statement said. In 2016, the State government formed Bamboo Research & Training Centre, Chichpalli, Chandrapur.

As per the Livestock Census of 2012, Meghalaya has about a million cattle. Of this, only around 30,000 are milch cows (cross-bred), and they are mostly reared within dairy farming co-operatives. These cows contribute to almost 60% of the total milk production in the State, he said. Recently, announcing the ₹215-crore Meghalaya Milk Mission 2018-22, Union Minister for Agriculture Radha Mohan Singh had stated that of the 6,449 villages in the State, only 97 had milk co-operatives. The mission stresses on developing indigenous breeds such as Sahiwal, Gir, Rathi, Red Sindhi and Thaparkar. The State wants to provide 10,000 cows to 2,000 farmers under the mission.



'Jack' of all fruit rules Western vegan market in raw form

The rising preference for vegan diets in the West is fuelling demand for the humble Indian raw jackfruit. Shipments of the tender or raw jackfruit in frozen, dried and ready-to-eat forms are on the rise to countries such as the United States and Europe, besides West Asia. Also, the seeds of the jackfruit, whose flour is used in bakery products, is finding great demand from countries such as the United Kingdom and Germany, among others. Due to its fibrous texture, raw jackfruit is considered as a vegetarian substitute for meat and chicken. In fact, tender jack is also being called as dummy meat, experts said.

Rising exports

"Our exports of tender jack fruit have risen to around 500

tonnes in the past four years," said Surya Shastry, Managing Director of Phalada Agro Research Foundations Pvt Ltd, a Bengaluru-based company that sells organic products under the Pure & Sure brand. "We expect the raw jackfruit exports to be around 750-800 tonnes in the current financial year," Shastry said. Phalada is exporting the tender jackfruit in ready-to-eat form, after processing it at its facility in Bengaluru. Phalada Agro, which sources raw jackfruit from its network of farmers in Karnataka, is now looking to tap the North-Eastern States to boost its supplies from the region. Similarly, Jack Fruit India, a Cochin-based firm, which started shipping the carpels in freeze dried form about seven months ago, has witnessed a major demand in markets such as the UK.

Farm incomes have surged: NABARD

The income of agricultural households, which account for nearly half of rural households in the country, surged to ₹1,07,172 in 2015-16, growing at a compounded annual growth rate (CAGR) of 12 per cent from 2012-13, according to a survey carried out by the NABARD. While the average annual income levels of non-agricultural households in 2015-16 were ₹87,228, all households (agricultural as well as non-agricultural) reported an average annual income of ₹96,708, it said. This was 39 per cent more than the ₹77,112 per annum reported during the National Sample Survey Organisation (NSSO) assessment in 2012-13.

For the first edition of the NABARD All India Rural Financial Farm incomes will increase further if the value chain is developed, says the NABARD survey Inclusion Survey, which is to be conducted every three years, data from as many as 40,327 rural households, with a total population of 1,87,518 members across in 245 districts in 29 States was used. The survey report was released by NITI Aayog Vice-Chairman Rajiv Kumar. The increase in income of agriculture households despite a decrease in average landholding is significant, as it underlines the decrease in absolute poverty, said Kumar. The farm income will further increase if the value chain is developed and marketing facilities are provided at the farm gate, he added. According to the survey, the average land parcel available to small and marginal farmers

came down to 1.1 hectares (ha) from 1.16 ha during the 2012-13 NSSO survey. The income levels of 19 of the 29 States are above the all-India average, and 15 States recorded a CAGR of 10.5% between 2012-13 and 2015-16, the survey indicated.

According to Dr. Bhanwala, Chairman, NABARD decided to carry out such surveys every three years as similar surveys like the NSSO Situation Assessment Survey of Agricultural Households are conducted only every 10 years. "This is because by the time such reports (such as NSSO surveys) come out, the situation would have dramatically changed," Bhanwala said.

According to the survey, 35% of income of agricultural households was from cultivation, 34% from wage labour, 16% from salaries and 8% from livestock. In the case of non-agricultural households 54% came from wages, followed by salaries (32%) and non-farm sector activities (12%). Agricultural households earned 23% more than non-agricultural households, it reported. Significantly, the income from agricultural activities came down substantially from 48 per cent recorded during the NSSO survey. On average, agricultural households had an outstanding debt of ₹1,04,602, and non-agricultural households ₹76,731. Incidence of indebtedness was 52.5% for agricultural households and 42.8% for non-agricultural households.

Southern states outshine rest of India in mobile banking

Southern States are outshining the rest of India in mobile banking adoption in savings accounts, according to a report by The Boston Consulting Group (BCG).

The report was prepared in association with FICCI and Indian Banks' Association.

Telangana tops the table with 10% of savings bank accounts having at least one mobile banking transaction in the last six months of FY18 followed by Andhra Pradesh (6.30%), Karnataka (5.50%), Puducherry (5.80%), Tamil Nadu (5%) and Kerala (4.70%). The all-India average is 3.40%. The report had a sample size of more than 2,600 respondents and BCG



factored in 34 banks across four segments - 15 medium PSU banks; six large PSU banks and five new private banks. BCG also said that eastern and southern States were leading the charge as India continued on the digital journey. More than

IFB Agro to invest ₹100 crore to set up processing unit, scale up shrimp exports

Kolkata-based IFB Agro Industries is planning to scale up shrimp exports by setting up a ₹100 crore marine product processing unit at Haldia, nearly 120 km from the city. The 10,000-tonne plant will be funded from internal accruals. The ₹1,500 crore company is primarily debt-free. It exports shrimp to Belgium, France, Germany, Russia, Italy, UAE, Thailand, Japan, Vietnam, Canada and the US, among others. As on March 31, 2018, the marine division, which includes

20% of the active savings banks accounts in Telangana, Manipur and Mizoram had at least one Internet banking financial transaction in the last six months of FY18 compared with the national average of 11.30%.

Boost to mechanised farming: Maharashtra Cabinet approves ₹ 50-crore financial aid for farmers

Maharashtra state Cabinet gave its nod to provide financial assistance to farmers to adopt mechanised farming, allocating ₹ 50 crore for it in the 2018-19 fiscal.

Chief Minister Devendra Fadnavis also announced a state-of-the-art agriculture technology hub in Maharashtra to boost mechanised and scientific farming. "The state government is committed to double farm production and farmers' incomes by 2022. The financial assistance to farmers to adopt technology is to help them cope with multiple challenges in

the agriculture sector. The thrust is to reduce investment cost and increase post-production income," Small and marginal farmers, those belonging to backward castes and communities and women would be provided financial assistance of up to 35 per cent and 50% to buy tractors. Other categories of farmers would get financial help of 25%. The financial aid for other farm equipment would be 40%. An agriculture equipment bank would be set up for which the state government will provide 40%.

New hybrids will help raise yields of silkworm farmers

Sericulture farmers could soon see higher yields of silkworm cocoons, with the Central Silk Board notifying some of the recently developed races of mulberry (which feeds on mulberry leaves) and vanya (forest-based) silkworm eggs. These races are now authorised for commercial production. The newly developed hybrid of mulberry silkworm (PM x FC2) can produce 60 kg of cocoons per 100 Disease Free Layings (silkworm eggs) and is said to be 'better than' the earlier race titled PM x CSR. The tropical tasar silkworm (BDR-10) has 21% more productivity than the traditional Daba breed and the Eri silkworm (C2) race is found to be 'better' than the

local breed, according to industry experts. It can produce 247 numbers of Ericocoons per 100 DFLs, says a press release. In the south, some tasar silk is produced in A.P. That apart, almost all the silk produced is the mulberry variety. Within this, production of bivoltine silkworm is high in T.N. and A.P. The new hybrid of mulberry silkworm is suitable for farmers across Tamil Nadu, Karnataka, Andhra Pradesh, Telangana, and Maharashtra. The national average of cocoon production for mulberry silkworm is 50-55 kg per 100 DFLs, said V. Sivaprasad, Director, Central Sericultural Research and Training Institute.

With dragon fruit, this woman sows the seeds of enterprise in North-East

Nagaland is not only known for its rich heritage culture and festivals but is also famous for horticultural and botanical diversity. The north-eastern State is a hub of nutritious organic fruits. Some fruits found here are rare to find in other parts of the country. One such fruit is the dragon fruit or 'Pitahaya'. The round giant kiwi-like fruit has a juicy fresh taste and has high medicinal values. In order to make the healthy fruit available to all, Lucy Ngullie Thomas, a woman entrepreneur has started its production in Nagaland on a big scale under her farm 'Dream Dragon Fruit Farm'. Besides many other exotic fruits, she has been growing red, white,

and yellow dragon fruits since 2013. The farm located at Shitovi village in Dimapur, which is about 25 km away from the commercial hub is well maintained and adopts all technical cultural practices. The five-hectare project is under the Nagaland Government. Many entrepreneurs are now looking to tap the potential of the agricultural sector of the region. Department of Horticulture and supported by the North Eastern Council (NEC), the Ministry of Development of North Eastern Region (DoNER). Recently, Nagaland Horticulture Department has also organised a two day training programme on dragon fruit farming for farmers at



the State Horticulture Nursery, Green Park, Dimapur. According to Lucy, dragon fruit cultivation is a huge task as it needs a lot of care and huge investment. Most of the dragon fruits, which are sold in Asian markets are reddish skinned with white flesh. The average yield per pillar (3-4 plants) per year is about 15 kg. Dream Dragon Fruit Farm is the only farm

PMFBY: Govt testing modern tech for assessment of crop damage

As many as nine pilot studies have been rolled out in 11 states to test the effectiveness of modern technologies in assessing the extent of yield loss for payment of crop insurance claims, the government said. The pilot studies are being carried out in Andhra Pradesh, Bihar, Chhattisgarh, Gujarat, Madhya Pradesh, Maharashtra, Odisha, Punjab, Rajasthan, Tamil Nadu and Telangana. Currently, the crop cutting experiment (CCE) -the traditional random survey

NABARD : Horses for Courses: The case for Bhavantar

In a first of its kind scheme in the country, the Madhya Pradesh government launched and implemented on a pilot basis a price differential scheme, popularly known Bhavantar Bhugtan Yojana (BBY), for eight kharif crops - soybean, groundnut, sesame, ramtil (all oilseeds), maize (cereal), moong, urad and tur (pulses - in 2017. The basic purpose of the scheme was to compensate farmers in the event of a price crash and to that extent hedge the price risk faced by them. One of the novelties of the scheme from the government's perspective was that it need not physically procure the commodities (as is the case with wheat and paddy) and can save on those costs and related leakages.

Revival of Cooperative Must For Improving Farm Sector: RBI Director

Making a strong case for revival of the cooperative sector in the country, RBI Director Satish Marathe said that increasing minimum support price of agriculture produce alone will not improve the plight of the farming community. The cooperative sector, he added, was essential to improve food processing industry and ensure that the farmers get due price of their produce. "We only process 20% of the farm produce, while in developed countries and in South East Asian nations as much as 80% of the agriculture produce are processed," he said, adding that "increasing in MSP alone will not improve the lot of farmers. We need to encourage cooperative sector reactivate rural cooperatives." Marathe said this while delivering the second Sopan Step Development Lecture on 'Reforms in cooperatives, imperative to spread rural prosperity'. Marathe further said that efforts were needed to persuade the Centre as well as state governments to amend all laws and rules in line with the 97th Constitutional Amendment, which, besides other things, made the right to form cooperative a fundamental

in the State that has healthy and well-maintained mother plants of red and white varieties. As the commercial cultivation of this fruit is picking up in Nagaland, the fruit is available at ₹350 per kg. Dragon fruit is famous in Thailand, Vietnam, Israel and Sri Lanka. Red dragon fruit with white flesh is the most popular and primarily comes from Asia.

method - is used to estimate crop yields of a location. Under the Pradhan Mantri Fasal Bhima Yojana (PMFBY), states are required to carry out at least four CCEs in every village panchayat for each crop and submit the yield data to insurance companies within one month of harvest. It has become a challenge to conduct CCEs in a short span considering 2.5 lakh gram panchayats in India.

NABARD : Horses for Courses: The case for Bhavantar

How does the scheme work? Farmers who register under the scheme are compensated only if their selling price (SP) is lower than the government set minimum support price (MSP). The actual amount of compensation or deficiency payment made to a farmer is determined by a modal price, which is a marker of average market price within the state and markets outside the state where the commodity is traded. So when a farmer's selling price is lower than MSP but higher than the modal price, then the difference between the MSP and actual price is paid to the farmer. If the SP is lower than both MSP and modal price, the payout is capped at the difference between MSP and modal price.

Revival of Cooperative Must For Improving Farm Sector: RBI Director

right.

The 97th Constitutional Amendment was aimed at freeing cooperatives from bureaucratic control and ensuring democratic and autonomous functioning through regular elections. One of the big problems being faced by the cooperative sector is lack of data, Marathe said, adding "one does not know the contribution of the cooperative sector to the GDP. This data is not there with Central Statistics Office (CSO)". The availability of data on contribution of cooperative sector to the economy will make the task of advocates of cooperative sector easier, he said, adding that "the cooperatives should be viewed as economic entities and not as business enterprises going all out to maximize profits". The cooperatives world over have helped in ensuring that essential commodities reach everyone at reasonable prices, he said, stressing in India it is "imperative to strengthen cooperative sector legally and financially".



Big part of import basket

Total output of nine oilseeds (groundnut, soyabean, sunflower, rapeseed & mustard, castorseed, sesamum, nigerseed and linseed) is pegged at 31 mt for 2017-18 according to the fourth advanced estimates. Edible oil is among the largest items in India's import basket after crude oil and gold.

Rising population and income levels are fuelling the demand for edible oil in India. Production of domestic edible oils has not kept pace with the growing demand, necessitating huge imports. India imports around 70% of its edible oil requirement - about 14 million tonnes, valued at over ₹73,048 crore in 2016-17.

The area under oilseeds has experienced a deceleration in general and this is due to their relatively lower profitability against competing crops such as maize, cotton and chickpea under the prevailing crop growing and marketing situations.

Besides, the majority of the oilseeds around 70% are

cultivated in the rainfed areas. The Agriculture Ministry believes that there is scope for introducing different oilseeds crops in different zones and non-traditional areas. These include sunflower and groundnut during the spring season in the Indo-Gangetic plains and Uttar Pradesh; safflower in Gujarat and Madhya Pradesh; mustard in Andhra Pradesh, Telangana and Karnataka; and soyabean in Telangana and Jharkhand, among others. It proposes to formulate a separate project 'Oilseeds in Non Traditional Areas' in consultation with States, targeting a production of 1.5 million tonnes from an area of 1 million hectares. Further, the Ministry also proposes to expand the scheme of 'Targeting Rice Fallow Areas' (TRFA) for cultivation of oilseeds such as soyabean and groundnut in States such as Andhra Pradesh, Tamil Nadu, Karnataka, Maharashtra, Gujarat, and the North East and Himalayan States, where large area of rice fallows are available. Presently, the TRFA is being implemented in about six eastern states.

Government clears ethanol-making directly from sugarcane juice, B-molasses

The government has notified a decision to allow sugar mills to manufacture ethanol directly from sugarcane juice or an intermediate product called B-molasses. The sugarcane control order of 1966 has been amended in this regard and the same has been notified by the Union Food Ministry. The move would help mills divert cane juice for ethanol manufacturing during surplus years.

"When a sugar factory produces ethanol directly from sugarcane juice or B-molasses, the recovery rate in case of such factory shall be determined by considering every 600 litres so produced as equivalent to one tonne of production of sugar," the notification said. So far, mills were allowed to

manufacture ethanol from by-product called C-molasses, after sugar was taken out while processing raw cane juice. The price of ethanol produced from C-molasses has been raised by ₹ 3 per litre to ₹ 43.70 per litre.

India, which is over 80% dependent on imports to meet its oil needs, has mandated blending of up to 10% ethanol in petrol but inadequate availability has restricted this to under 4%. OMCs procure ethanol from sugar mills for blending with petrol. Mills are expecting revenue realisation of over ₹5,000 crore from sale of ethanol to OMCs during the 2017-18 sugar season (October-September).

Bankers seek interest subvention on investment loans to farmers

Banks have sought from the government an interest subvention on loans given to farmers for investments, such as buying a piece of land or a tractor, in addition to the existing subvention on crop loans of up to ₹ 3 lakh. According to sources, bankers recently made a presentation to the parliamentary standing committee on agriculture, reiterating the long-held demand for subvention on loans for making investments in agriculture to bring down the incidence of defaults. Crop loans are extended for the duration of the relevant cropping cycle. In contrast, an

investment in land or machinery is likely to yield returns only over a period of five to seven years. Bankers say that in order to avail the benefit of the subvention, farmers sometimes do not disclose the purpose of the borrowing. The demand from banks gains relevance in the light of increased delinquencies in their agri-loan portfolios. In the last two years, demonetisation and a string of farm-loan waivers by some states have put pressure on repayments in this segment. In the June quarters of both FY18 and FY19, banks have reported a decline in the asset quality of their agri books.

State plans to hike cess on groundwater extraction

Fearing the rapid depletion of groundwater, the Maharashtra government will levy a cess on the use of deep wells for its extraction, either for agricultural or industrial use. The Maharashtra Water Resources Regulatory Authority (MWRRA) is already collecting a cess on extraction from deep

wells in notified and non-notified areas. "However, the new cess will be about two to four times the amount being collected. It will be collected by the State Revenue Department in consultation with the State groundwater authority,"



To boost priority sector lending, RBI allows banks to co-originate loans with NBFCs

In a bid to give a leg-up to priority sector lending, the RBI said all scheduled commercial banks will be allowed to co-originate loans with NBFCs for creating eligible priority sector assets. The RBI, however, has excluded RRBs and small finance banks from co-origination as most of the loans they originate are priority sector loans. Further, only NBFCs classified as Non-Deposit Taking- Systemically Important can get into co-origination arrangements with scheduled commercial banks.

The RBI said the co-origination arrangement should entail joint contribution of credit by both lenders at the facility-level. It should also involve sharing of risks and rewards between the banks and the NBFCs for ensuring appropriate alignment of respective business objectives as per their

mutual agreement.

In its 'Statement on Developmental and Regulatory Policies', issued along with the third bi-monthly monetary policy statement, the RBI said the guidelines on co-origination of priority sector loans would be issued by the end of September 2018.

For domestic scheduled commercial banks (excluding RRBs and SFBs) and foreign banks with 20 branches and above, the RBI has set priority sector lending target at 40 per cent of Adjusted Net Bank Credit, or Credit Equivalent Amount of Off-Balance Sheet Exposure, whichever is higher. Within priority sector lending, there are sub-targets for agriculture, micro-enterprises, and advances to weaker sections.

RBI to issue new ₹ 100 note in lavender colour

The RBI will soon issue new ₹ 100 notes in lavender colour having the motif of 'Rani kivav', an intricately constructed stepwell situated on the banks of Saraswati River in Gujarat. "All ₹100 banknotes issued earlier will also continue to be legal tender," the RBI said while announcing the issue of the new ₹ 100 notes. The base colour of the note is lavender. The

note has other designs, geometric patterns aligning with the overall colour scheme, both at the obverse and reverse. The dimension of the banknote will be 66 mm x 142 mm, making it smaller than the current ₹ 100 notes. The size of current ₹ 100 notes is 157 mm x 73 mm.

Agriculture Ministry seeks to boost oilseeds output

After giving a fillip to the production of pulses through various strategies, the Agriculture Ministry is focussing on boosting oilseeds production over the next four years. The Ministry has proposed various strategies, including promoting the cultivation of oilseeds in non-traditional areas and cropping seasons besides targeting rice fallows to boost the domestic output, which could help reduce import dependence for edible oils by 2022. The Ministry will be deliberating on these strategies with the States at the National Conference on Agriculture for Rabi Campaign 2018-19 in New Delhi.

The Ministry has pegged the country's total vegetable oil requirement at 33.2 million tonnes by 2022 as per the

agenda note circulated for the rabi conference. The current annual vegoil requirement is about 23 mt. The increase in the demand estimates by the Ministry assumes a per capita consumption of about 22 kg by 2022 from the level of 19 kg per person per annum during 2015-16. The production of nine annual oilseed crops (primary source) has been targeted at 45.65 mt from which availability of vegetable oils would be about 13.69 mt by 2022 as against the current annual output of 7.31 mt. similarly, vegetable oil availability from secondary sources such as coconut, cotton seed, rice bran, solvent extracted oil (SEO) of tree and forest origin has been estimated at 5.22 mt. by 2022 from the present level of 3.58 mt.

An ambitious target
(Estimated area, production and yield of nine oil seeds crop 2022)

	Area (Million hectares)	Production (Million tonnes)	Yield kg/ha
2017-18*	24.65	31.31	1,270
2018-19	28.50	38.00	1,335
2019-20	29.41	40.50	1,379
2020-21	30.30	43.10	1,423
2021-22	31.20	45.65	1,463

*4th Advance estimates





Panel for adopting latest genetically modified technology for important non-food crops

The Dalwai committee on doubling farmers' income has suggested India should adopt latest genetically modified (GM) technologies in important non-food crops since use of GM in food crops is an issue under debate. In a draft report, released for public comment, the committee said GM technology is an important aspect of long-term research. The committee, headed by Rainfed Area Authority CEO Ashok Dalwai, said since over 95% of the genetic diversity of the country has yet not been tapped, conventional breeding programme may be depended upon in case of food crops and the genetic diversity available outside India may also be accessed for this purpose.

Of the several GM technologies, Genome Editing may be

considered after diligent examination in case of food crops, when specific trait is not available to undertake conventional breeding, it said.

Terming the GM technology as a powerful tool for developing future crop varieties with in-built genetic resistance to various biotic and abiotic stresses for reducing crop losses and enhanced input use efficiency, yield potential and quality traits, the committee said using the technology "will be crucial for the food and nutritional security of the country, and therefore, research on them must be continued with the aim of developing safer, more productive and nutritious food crops."

India's genetically modified crop area fifth largest in world

India has the world's fifth largest cultivated area under genetically modified (GM) crops, at 11.4 million hectares (mh) in 2017. But unlike other big growers, its entire GM crop area is under a single crop - cotton - incorporating genes from the *Bacillus thuringiensis* or Bt soil bacterium coding for resistance against *Heliothis* bollworm insect pests. The country with the highest area under transgenic crops, at 75 mh, is the United States.

ISAAA's latest 'Global Status of Commercialized Biotech/GM Crops in 2017' report shows farmers across the world to have planted 189.8 mh under transgenic crops last year. This is as against 1.7 mh in 1996, the year when they were grown commercially for the first time. Total planted area grew particularly during the first decade of this century, while slowing down in the last five years.

In India, the GM crops that are under regulatory consideration - apart from the already commercialised Bt/insect-resistant cotton - include glyphosate-tolerant cotton and biotech hybrid mustard. Both the Bollgard II-Roundup Ready Flex (BGII-RRF) cotton event of Monsanto (incorporating Bt as well as glyphosate-tolerant genes) and transgenic mustard developed by Delhi University's Centre for Genetic Manipulation of Crop Plants (harbouring three alien genes that enable higher yields through hybridisation) have undergone all the mandated bio-safety research and open field trials. Their commercial release has, however,

been stuck due to opposition from environmental activists.

TOP GM CROP GROWING COUNTRIES : 2017 (million hectares)

US	75.0
BRAZIL	50.2
ARGENTINA	23.6
CANADA	13.1
INDIA	11.4
PARAGUAY	3.0
PAKISTAN	3.0
CHINA	2.8
SOUTH AFRICA	2.7
BOLIVIA	1.3
URUGUAY	1.1
TOTAL	189.8

*Includes other countries.

In the case of BG II-RRF cotton, the developer (Monsanto) itself has withdrawn its regulatory applications, following disputes with the government over intellectual property protection on GM technologies. But that has come even as a high-level expert panel constituted by the Prime Minister's Office has found 15% of cotton area planted across Andhra Pradesh, Telangana, Maharashtra and Gujarat in the 2017 season - and about five per cent in Punjab - to be under hybrids containing the "unapproved" BG II-RRF event. This is, of course, an indication of demand for GM technology among Indian farmers - whether or not the government and green NGOs like it.

Who is T. Vijay Kumar, and what is he doing to promote natural farming in Andhra Pradesh?

Like many other States, Andhra Pradesh is known for indiscriminate use of chemical fertilizers and pesticides to the extent that residues found their way into mothers' milk

in a few villages in Guntur. As Zero Budget Natural Farming (ZBNF) takes root in Andhra Pradesh, promising to move away from synthetic fertilizers and pesticides and

rejuvenate the degraded soil, a retired civil servant, T. Vijay Kumar, is leading the project.

What is the mission?

Mr. Kumar is seen as the prime mover of the ZBNF as Andhra Pradesh inches towards becoming India's first natural farming State, covering 60 lakh farmers and 12,294 gram panchayats by 2024, and 80 lakh hectares or 90% of the cultivable area by 2026.

For Mr. Kumar, a 1983-batch IAS officer, heralding a natural farming era is a dream and comes at the end of a long career, 28 years of which were spent on the Tribal, Rural and Agriculture Development Departments. After retiring in September 2016, he became adviser to the government on agriculture and vice-chairman of the Rythu Sadhikara Samstha, a not-for-profit company set up by the government to usher in natural farming. According to Mr. Kumar, "for both farmers and consumers, natural farming is a win-win situation. The ZBNF is a practice that believes in natural growth of crops without fertilizer and pesticide or any other "foreign" elements. The inputs used for seed treatments and other inoculations are cow dung and cow urine. Vidarbha farmer and Padma Shri awardee Subhash Palekar, the biggest champion of the ZBNF, pioneered a cow dung- and cow urine-based concept for seed treatment, inoculation, mulching and soil aeration.

How did he spread the word?

Mr. Kumar realised that to promote the ZBNF, he would have to speak to the farmer in a language he understands. He prompted the Agriculture Department to identify community resource persons or 'champion farmers' from

the villages who would motivate other farmers to achieve the ultimate goal of 'biovillages' (the entire village taking to natural farming) in phases. The initial committed group of 800, trained in natural farming, were used as CRPs to spread the concept. After preparatory work, this massive task began with Mr. Palekar's eight-day training for 5,000 farmers in the ZBNF in January 2016. By the end of 2017, 40,000 farmers in 704 villages were covered, 2017-18 saw 1,63,000 being roped in at 972 villages, and during the current year the target is 5,00,000 farmers in 3,015 villages.

What were the challenges?

For Mr. Kumar, one of the biggest challenges was that of mindset. Farmers had been brought up to believe that chemical-based farming, with external inputs, was necessary to increase yields. But when fellow farmers who had taken to natural farming briefed the others of the benefits, especially of cost, they took to it "like fish to water."

Having worked for rural welfare for years, Mr. Kumar found it easy to reach out to the community. In service, he had initiated the novel concept of Community Coordinators. Under it, young professionals from reputed institutes, like the IITs, would spend three years in a tribal village. Then as CEO of the Society for Elimination of Rural Poverty of the undivided Andhra Pradesh government from 2000 to 2010, he implemented a poverty eradication programme on an outlay of over ₹2,600 crore. The programme, covering all villages, was successful in organising 1.15 crore rural poor women in thrift and credit-based self-help groups. The key impact is that these groups mobilised bank credit to the tune of ₹65,000 crore in the undivided State as on March 2014.

Erode organic farmers set to take the sugarcane plunge

Going organic seems to be yielding rich dividends for the Erode Uyirlyyarkai Vivasagai Sangam (Erode Uyir Natural Farmers' Society). Its members are raring to go a step further and bring into their fold about 1,000 acres of land in Tamil Nadu for organic sugarcane cultivation.

The 64 members of the society have already undertaken organic farming on about 400 acres in the State. Formed two years ago, the agricultural society has secured group organic certification for most of its members and also runs a retail outlet in Erode to sell their organic produce including pulses, vegetables, turmeric, sugarcane, jaggery powder and processed food items. Most of the value-added products are made by the farmers with the resources available with them.

Asked about the scope of bringing in such a vast extent of

land under organic sugarcane cultivation at a time when large sugarmills in the State are hit by low cane production due to drought over the last four years, Mr. Ravichandran, president of the society said the number of farmers going organic was on the rise because of better awareness. Further, organic sugarcane jaggery powder has high demand.

Better returns

Under the initiative, Uyir plans to pay farmers ₹3,600 for a tonne of sugarcane. "We sell about two tonnes of sugarcane jaggery powder at our outlet for about ₹65 a kg. We plan to buy cane from farmers who register with us and start making sugarcane jaggery powder," he said.



Area under soybean up 10% this year

With the monsoon arriving at the right time, the area under soybean has gone up by 10% this year to 111.734 lakh hectare with farmers completing sowing operations in three-and-a-half weeks. Farmers commenced sowing operations on June 15 and completed them on July 10. A trend of farmers showing preference for soybean has been seen this season after cotton crop was attacked by Pink Bollworm last year. According to data gathered by the Soybean Processors Association of India (Sopa), the all-India area under acreage has increased by 10%. Last year, the total area under soybean was 101.561 lakh hectare.

During the period from August 3-12, 2018, two Sopa teams conducted a field survey of soybean crop in 23 districts of Madhya Pradesh, 12 districts of Maharashtra, and 6 districts of Rajasthan. DN Pathak, executive director, Sopa, said since the crop is at such a stage that it would be too premature to give any production estimates at this time except that the condition is good and there are no major pest or disease attacks." Overall, the soybean crop is in normal condition and farmers are spraying insecticide at the right time, maintaining a good control over insects and diseases," he said, adding that weeds are also under control by inter-cultural practices and chemical uses.

However, around 5-10% light soil areas of Madhya Pradesh, Maharashtra and Rajasthan have been affected due to moisture stress during the flowering and pod formation stage. This will affect the yields, Pathak pointed out. In

Maharashtra, inter-cropping with red gram has been seen in large tracts. During the survey, some water stress was seen in small areas in MP, Maharashtra and Rajasthan, causing poor vegetative growth. In Indore, Shajapur, Khandwa, Khargone, Barwani, Guna, Ashok Nagar, Sagar and Damoh districts of Madhya Pradesh, there was no rainfall for 15-20 days initially and the crop suffered due to moisture stress, affecting productivity.

In some parts of Jalna, Latur, Akola, Buldhana, Beed and Osmanabad districts of Maharashtra, there was no rainfall for 15-20 days initially and in 10-15% light soil area, the crop suffered due to moisture stress, affecting productivity. In Rajasthan as well, the overall crop was suffering from water stress at the flowering stage because of long dry spell. However, rains in August have minimised the loss of productivity, Pathak said. The area under soybean in Madhya Pradesh has risen to 54 lakh hectare from 50 lakh hectare, a rise of 7.98% over the previous year. In Maharashtra, the area under cultivation rose to 38.692 lakh hectare from 34.484 lakh hectare, a 12.20% rise over the previous year.

Last year, after cotton was infested by pink bollworm, sowing of soybean saw a substantial increase in Maharashtra. In Rajasthan as well, the area rose to 10,455 lakh hectare as against 9,245 lakh hectare, a 13% rise over last season. For this Kharif season, the central government has raised the Minimum Support Price (MSP) of the oilseed to ₹3,399 per quintal, from ₹3,050 a quintal last year.

Govt project boosts water supply Farmers switch from soyabean, cotton to sugarcane cultivation

A canal has given a new lease of life to the dry fields at Takalgaon village, which has a population of 1,869 people, in Pathri taluka of Parbhani district in Maharashtra.

With an assured supply of water, an outcome of the Jalyukt Shivar project, the farmers in the village are increasingly shifting to sugarcane cultivation.

Sarpanch Vaijanath Mahipal, said, "Of the total 1,500 hectares of agricultural land, almost 300 to 350 hectares will be under sugar cane cultivation.

Across all the eight districts of Aurangabad, Nanded,

Parbhani, Beed, Latur, Osmanabd, Hingoli and Jalna, covering the entire Marathawda region, the farmers have diverted partly to sugarcane cultivation. Secondly, being a cash crop, it is less prone to pest attack unlike cotton and soyabean.

In the state, sugarcane cultivation is confined to 9.5 to 10 lakh hectares of land. The maximum sugarcane cultivation is in western Maharashtra. At Takri-Kumbhakarna, farmers revealed a major water conservation work was underway. At the entrance of the village, adjoining a temple, is a bill board giving details of the project.

Sowing the seeds of a jackfruit ecosystem

Slowly, efforts are on to create an ecosystem to meet the requirements of jackfruit-based enterprises in the country.

Supply of quality jackfruits in good quantity is the major requirement for the creation of such an ecosystem. Though there are a good number of jackfruit plants in the country, the quality of value-added products depends on jackfruits of certain varieties. Some farmers and a few non-governmental

organisations are showing interest in setting up jackfruit orchards.

For instance, Gabriel Stanny Veigas (68), a former official of the Karnataka Forest Department has planted 650 jackfruit plants of different varieties on 10 acres at Tenka Mijar village near Moodbidri town in Karnataka's Dakshina Kannada district, and most of these varieties are well-suited for



vacuum-fried chips. At his farm, one of the reasons for planting particular varieties in bulk is that it ensures steady supply of the right quality. He plans to set up a vacuum-fried chips unit in the next two-three years.

Recalling his interactions with jackfruit-based industries, Shree Padre, Editor of farm magazine Adike Patrike and a jackfruit activist, told that non-availability of jack fruits of same variety in good quantity comes in the way of standardisation of value-added products. He then took up the initiative to plant a red-fleshed jackfruit variety in 2016.

Fourth Advance Estimates of Crop Production 2017-18

- As per the 4th advanced estimates, foodgrain production is estimated to increase by 3.53% in 2017-18 over previous year to 284.83 Million Tonnes (MT) (Table 1).
- Production of rice is expected to increase by 2.92% to 112.91 MT and production of wheat is estimated to increase marginally by 1.2% to 99.70 MT.
- Production of pulses is estimated to increase by 9.38% to 25.3 MT.

Table 1 - Production of Foodgrains (MT)

Crop	2015-16	2016-17	2017-18 (4 th AE)
Rice	104.41	109.70	112.91
Wheat	92.29	98.51	99.70
Coarse Cereals	38.52	43.77	46.99
Pulses	16.35	23.13	25.23
Total Foodgrains	251.57	275.11	284.83

Source: 4th AE, Department of Agriculture, Cooperation & Farmers' Welfare

- Production of sugarcane is estimated to increase by 22.8% to 3760.9 lakh tonnes (Table 2). Cotton production is estimated to increase by 7.1%.
- Production of Oilseeds is estimated to increase marginally by 0.1% to 313.1 lakh million tonnes.
- Production of Jute & Mesta is expected to decline by 7.4% to 101.4 lakh tonnes.

Table 2 - Production of Commercial Crops
(Lakh Tonnes)

Crop	2015-16	2016-17	2017-18 (4 th AE)
Oilseeds	252.51	312.76	313.10
Cotton \$	300.05	325.77	348.90
Jute & Mesta #	105.24	109.62	101.40
Sugarcane	3484.48	3060.69	3760.90

Note: \$ Lakh bales of 170 Kgs each, # Lakh bales of 180 Kgs each

Source: Department of Agriculture, Cooperation & Farmers' Welfare, Gol

More than 3,000 plants of this variety have been planted in four villages since.

He said the plan is to start a farmer-producer organisation for value-added items with material sourced from these plants. According to Padre, Kattakkode Service Cooperative Bank at Kattakkada near Thiruvananthapuram has initiated a project to plant 5,000 saplings in 11 wards of Kattakkada panchayat this year. The project was launched with the distribution of 500 saplings on the World Environment Day on June 5.

Third Advance Estimates of Horticulture Production 2017-18

- As per the 3rd advanced estimates of horticulture crops, horticulture production in the country is estimated to be 306.8 million tonnes during 2017-18, which is 2.05% higher than 2016-17 (Table 3)
- Production of fruits is estimated to increase by about 4.5% to 97 million tonnes.
- Production of vegetables is estimated to be about 179.7 million tonnes, which is about 0.9% higher than previous year.
- Onion production in the current year is likely to be around 22 million tonnes, as against 22.4 million tonnes in 2016-17.

Table 3 - Production of Horticulture Crops (MT)

Crop	2015-16	2016-17	2017-18 (4 th AE)
Fruits	90.00	93.00	97.00
Vegetables	169.00	178.00	179.70
Onion	20.90	22.40	22.00
Potato	43.40	48.60	48.50
Tomato	18.70	20.70	19.40
Total Horticulture Crops	286.00	300.60	306.80

Source: 3rd AE, Department of Agriculture, Cooperation & Farmers' Welfare

- Potato production is estimated at 48.5 million tonnes, as against 48.6 million tonnes in 2016-17 thereby declining by about 0.2%
- Tomato production in the current year is likely to be around 19.4 million tonnes, as against 20.7 million tonnes in 2016-17.

Bayer, IFC-led alliance to help chilli, tomato growers

Nearly 2,000 small-time chilli farmers around Varanasi in Uttar Pradesh and tomato cultivators in and around Ranchi in Jharkhand can look forward to a better future with a

consortium of Indian and global firms specialising in diverse aspects of agriculture value chain coming up with a novel initiative to help improve their returns from farming.

Called "Better Life Farming (BLF)" alliance, the initiative put together among others by Bayer and International Finance Corporation (IFC), a member of the World Bank Group, hopes to work with the subsistence farmers to help them with better agronomic practices so that their yield can improve substantially.

The project was formally launched and started in 2016, as a small pilot involving 20 chilli farmers from 20 villages around Varanasi. The farmers received guidance from experts associated with the project on the use of best agricultural practices and the latest technologies to grow green chillies. As a result, the farmers were able to double their yields and triple their farm incomes, said SrinathBala, Bayer's head of marketing for South Asia region. Unlike chilli farmers in Andhra Pradesh, their counterparts in UP have little access to technology and as a result, the productivity levels of their fields are very low, Bala said. According to him, the project officially launched in India was part of the global BLF alliance opened in April this year to help small holder farmers in developing countries. Other partners involved in the initiative are Netafim, a firm specialising in micro-irrigation, and Yara Fertilisers, which specialises in speciality nutrients.

Role of DeHaat

Last year, the project was commercially scaled up to include

Meghalaya on a mission mode to tap jackfruit's potential

The Meghalaya government has formulated an exclusive policy to explore the potential of the neglected poor man's fruit — the jackfruit. The draft policy of the 'Mission Jackfruit' aims to create livelihood opportunities for rural and urban people by exploring the potential of the fruit, which is going waste now. Apart from addressing food security and nutritional issues, the five-year mission plan is aimed at creating a value chain for jackfruit products and job opportunities for many. This mission hopes to improve the lives of around 82,000 farmers in the State.

Generating jobs

KN Kumar, Agricultural Production Commissioner of Meghalaya, and Additional Chief Secretary to the Governor of Meghalaya, told that Meghalaya could be the first State to plan an exclusive mission document for jackfruit. Jackfruit grows in the wild in Meghalaya, especially in the Garo Hills region. Inspite of this, nearly 75% of the production is wasted. The mission intends to generate economic activity and create employment opportunities around jackfruit. With nearly a million trees in the State, 'Mission Jackfruit' wants to

250 farmers. To help the farmers get better price for their produce the alliance roped in DeHaat, an agri-tech start-up specialising in procurement of agricultural produce and Bigbasket, an e-tailer. In 2018, the handholding will be extended to more than 2,000 farmers — 1570 chilli farmers in 122 villages in Varanasi, Mirzapur and Sonbhadra districts and 500 tomato farmers in Jharkhand. The alliance also has plans to support small and marginal farmers growing corn in the near future.

According to Shashank Kumar, founder and CEO of DeHaat, it procured 196 tonnes of green chillies in 2017, a substantial portion of which was exported to Middle East and Bangladesh, fetching the farmers better returns. "This year, we plan to procure 10,000 tonnes of green chillies," Kumar Said.

What does Netafim do?

The role of Netafim's in the alliance was to exactly address the issues associated with water availability. According to Randhir Chauhan, managing director of Netafim India, fertigation technologies, even in regions where water is abundantly available, reduce vulnerability to weather changes and bring about significant increase in yields, ensuring better returns.

Local varieties

The mission has set a target of reaching out and helping more than 82,000 farmers over the next five years. It wants to promote the formation of jackfruit collection, aggregation, and agro-processing clusters and farmer producer organisations. It will also focus on demand-driven research and development for product and processes; and design and development of equipment, improved storage and shelf-life facilities, packaging, etc.

It also aims at establishing techno-incubation centres at Garo, Khasi and Jaintia hills in the State to provide training, technical assistance and incubation to entrepreneurs and to act as a common processing facility for jackfruits. The mission envisages an outlay of around ₹79.18 crore, with assistance from both State and Central governments, over a period of five years.



Maharashtra to sign MoU with IISc to make drones for crop assessment

The Maharashtra government plans to soon sign a memorandum of understanding (MoU) with Bengaluru's Indian Institute of Science (IISc) to use drone technology developed by its aerospace engineers for estimating area, yield and health of soyabean and cotton. Maharashtra, the second largest producer of cotton, soyabean and sugarcane in the country, has often missed its production and yield estimates. Accurate data is also required to compensate farmers for crop losses caused by natural calamities and for settlement of insurance claims.

While the central government set up the Mahalanobis

National Crop Forecast Centre in 2012 to use state of the art technologies developed by the ISRO, accurate data continues to be elusive. The Maharashtra government has been experimenting with the use of drone technology to estimate crop damage for the past few years with the help of private agencies. Chief minister Devendra Fadnavis and Pasha Patel, chairman of Maharashtra State Commission of Agricultural Costs and Prices, held a meeting with KPJ Reddy and SN Omkar, professors of aerospace engineering at IISc, to set up centres in Maharashtra.

TNAU's high-yield cotton 'suited for machine picking'

The Tamil Nadu Agricultural University (TNAU)-Coimbatore has developed a new cotton culture – TCH 1819, which is now being tested for performance through Adaptive Research Trial (ART). It is a high-yielding, shorter-duration variety, suited for mechanised harvesting of cotton bolls.

This culture (as it is still at the experimental stage) was laid out for performance at Kumaraguru Institute of Agriculture (KIA), Sakthi Nagar on 3.5 acres. The crop is about to be harvested. The plant is compact and erect (90-100 cm) with

zero monopodial and short sympodial branches, with about 15-20 large-sized bolls (weighing more than 5 gm) per plant. The culture has been developed by crossing Khandwa 2 with LH 2220.

"It has given an average seed cotton yield of 2,140 kg/ha. The highest recorded was 2,587 kg/ha. Results from 52 locations out of the 200 ART conducted over the last two years are available," he said.

How a farmer in TN is reimagining agriculture?

After running an art gallery for years, bagging an award for his innovative works on 'tiles for ceiling', C Shanmugasundaram of Chittode decided to become a farm innovator. His model - dish pandal and vertical farming stand - at ICAR Krishi Vigyan Kendra – Myrada, at Gobichettipalayam near Erode catch the attention of every visitor.

Creeper vegetables such as ridgegourd, snake gourd and bottlegourd hang vertically from the dish-type pandal and brinjal, tomato, chilli peep out of small holes in grow bags. Though the vertical garden is usually the cynosure of all eyes, the design structure at Shanmugasundaram's 10th Planet Organic Farm is different.

Manifold benefits

His vertical farming design structure appears more suited for

small and marginal farmers with holdings of an acre or more, and not for growing plants on the walls of a balcony.

The vertical farming structural design comprises fiberacks with three rows, erected using laminated wooden poles. Coco-pith, vermi-compost, cow dung and 2 kg of red soil were mixed and filled in each grow bag and micro dripper used for water management.

"I've tried raising crops such as onion, tomato, cauliflower, capsicum, chilli, brinjal, beetroot and radish. Besides space management, we were able to save water up to 80 per cent, cultivate throughout the year, get better aeration, better management of pest and diseases and above all, get increased yield. The investment works out to ₹1.5 lakh, which can be recovered in one yield.",

Mango output in 2017-18 seen higher by 8 pc

The country's mango production is estimated to be up by 8 per cent to 21.02 million tonnes in the 2017-18 crop year according to an official data. Production of mango stood at 19.50 million tonnes in the previous crop year (July-June). There has been a focus on improving productivity of mangoes under the central sponsored scheme Mission for Integrated Development of Horticulture, the official said. According to the latest data, maximum mango production is

projected to be from Uttar Pradesh, Andhra Pradesh and Karnataka during the 2017-18. Mango output in Uttar Pradesh is pegged higher at 4.54 million tonnes in 2017-18 as against 4.34 million tonnes in the preceding year. The production in Andhra Pradesh is estimated at 4.48 million tonnes as against 4.04 million tonnes, while in Karnataka at 1.81 million tonnes as against 1.71 million tonnes in the period under review.



Milk production up 6.6% at 176.35 million tonne in 2017-18

India's milk production is estimated to have increased by 6.6 per cent to 176.35 million tonnes during the last financial year. "Milk production in the country is 165.4 million tonnes during 2016-17 and 176.35 million tonnes (provisional) during 2017-18," Minister of State for Agriculture Krishna Raj has said in a written reply to the Lok Sabha. She also informed that the projected milk production by 2021-22 is 254.5 million tonnes as per the vision 2022 document. India is the largest milk producer in the world.

To achieve this target, the minister said that the department has been implementing many dairy development schemes. These schemes are - Rashtriya Gokul Mission, National Programme for Dairy Development (NPDD), National Dairy

Plan Phase I, Dairy Entrepreneurship Development Scheme, Dairy Processing Infrastructure Development Fund (DIDF) and Supporting State Co-operative Dairy Federation.

To ensure supply of good quality and nutritious milk to consumers, she said the Food Safety and Standards Authority of India (FSSAI) has asked state food authorities to keep a strict vigil by regularly drawing food samples and take strict action against offenders. The FSSAI has distributed electronic milk adulteration testing machines to states and Indian Railways for detection of fat, SNF, protein, lactose, density and added water as well as adulterants like urea, detergent, ammonium sulphate, caustic soda, hydrogen peroxide, soda and salt in the raw milk.

Women rice farmers to be trained in the Philippines

Eight women farmers have been selected to visit the International Rice Research Institute (IRRI) in the Philippines to learn about new rice farming techniques, as part of an initiative by the Department of Biotechnology (DBT), a Science Ministry body, to raise the profile of women farmers.

The eight women farmers were whittled down from a set of 35 farmers who were selected for a workshop at the IRRI's centre in Bhubaneshwar, at the forthcoming workshop in the Philippines from 6-10 August, 2018. The women who will make it to the Philippines span five States: Uttarakhand,

Assam, Karnataka, Andhra Pradesh and West Bengal.

During the workshop in India, the women were taught about crop planning, stages of rice cultivation, pest and weed management, use of crop calendar, land selection, crop monitoring, post-harvest management and seed management. According to the Census 2011, 55% of women workers were agricultural labourers and 24% were cultivators. However, only 12.8% of the operational holdings were owned by women, and 25% this land belonged to the "marginal and small holdings categories."

Present Status of Renewable Energy in India

The total potential for renewable power generation in the country as on 31.03.17 was estimated at 10,01,132 MW. This included solar power potential of 64.9%, wind power potential of 30.2% at 100 m hub height, small-hydro power potential of 2%, Biomass power of 1.9%, 0.7% from bagasse-based cogeneration in sugar mills and 0.3% from waste to energy.

Renewable energy secured 2nd position in terms of share in installed capacity. Source-wise powered installed capacity is given below.

Source-wise Powered Installed Capacity

(on 31.12.2017)

Source	Installed Capacity (MW)	Share (%)
Thermal	218330	66.80
Renewable Energy	57244	17.51
Nuclear	6780	2.07
Hydro	44478	13.61
Total	326833	100

Source : Energy statistics (2018) CSO MOSPI, GOI, New Delhi.

- India attained global 4th & 6th position in global wind and solar power installed capacity.
- In 2016-17, India had largest ever Wind Power capacity

addition of 5502.39 MW exceeding target by 38%. During 2017-18, a total 467.11 MW capacity had been added till 30.11.2017.

- In 2016-17, India had biggest ever Solar Power capacity addition of 5525.98 MW. During 2017-18, a total 4323.1 MW (till 30.11.2017).
- 1.42 lakh Solar Pump had been installed in the Country as on 30.11.2017. Under Grid Connected Renewable Power, 0.59 GW had been added.
- Under Biomass power, cumulative achievement was 8181.70 MW.

Agri News Snippets

- Small holder farmers represent 80% of India's farming Community and India loses, as per Associated Chambers of Commerce of India, around ₹92,600 crore (\$14.3 billion) on account of post-harvest losses.
- National Collateral Management Services Ltd, estimated a reduction in food grain output in the ongoing kharif season to 136.75 million tonnes (mt) - nearly 2.83% lower than the 140.73 mt produced in 2017-18.



- Chhattisgarh is the best performer in Soil Health Card Scheme followed by Uttarakhand & Madhya Pradesh in the ranking of states by the Agriculture Ministry on the basis of parameters fixed by NITI Aayog.
- The Centre has decided to provide direct assistance worth ₹ 3000 – 5000 per hectare in the form of agricultural inputs to farmers who take up any oilseed crop as an inter cropping model similar to those given to pulses farmers in the last two years.

The State of Food and Agriculture: Migration, Agriculture and Rural Development (2018)

This report is released annually by the Food and Agriculture Organization of the UN. This year's report focuses on rural migration.

Rural migration is closely linked not only with agriculture and rural development, but also with the overall development of societies. It is a historically important phenomenon which has contributed to the transformation of societies from essentially rural to more urbanized. It has accompanied the gradual process whereby labour is transferred from agriculture to more productive sectors in manufacturing and services that are often located in urban areas, thus contributing to rising incomes and economic, social and human development.

Key Drivers of Rural Migration

The report tries to identify the key drivers of rural migration. Primarily, it is driven by differentials in employment opportunities and in access to public services. Productivity differences and corresponding income gaps between agriculture and other sectors of the economy, constitute another driver of rural–urban migration. Even environmental differentials can affect rural migration flows, *inter alia*, through their impacts on agricultural productivity. A study on migration in India shows that a 1% decline in rice (wheat) yields leads to an approximately 2% (1%) increase in the rate of internal migration between states in the country. In countries with large numbers of rural youth, unless adequate employment opportunities are created in or in proximity to rural areas, this lack and also the scarcity of farmland are likely to induce vast numbers of these youth to seek opportunities in cities.

Internal and International Migration

Most of the attention is on international migration, but this report highlights that migration within countries is much larger than the former. International migration is often preceded by internal migration, for example through a move

from a rural area to a city. Data suggest that people who have already undertaken internal migration are more likely to migrate internationally.

Another interesting fact is that migration between developing countries is just as important in terms of magnitude as migration from developing to developed countries. It may be surprising to note that the vast majority of international refugees – around 85% – are hosted by developing countries.

In developing regions with high urbanization rates, rural migration in all its forms accounts for at least 50% of all internal movements. In sub-Saharan Africa the share is greater than 75%.

Characteristics of Indian rural migration

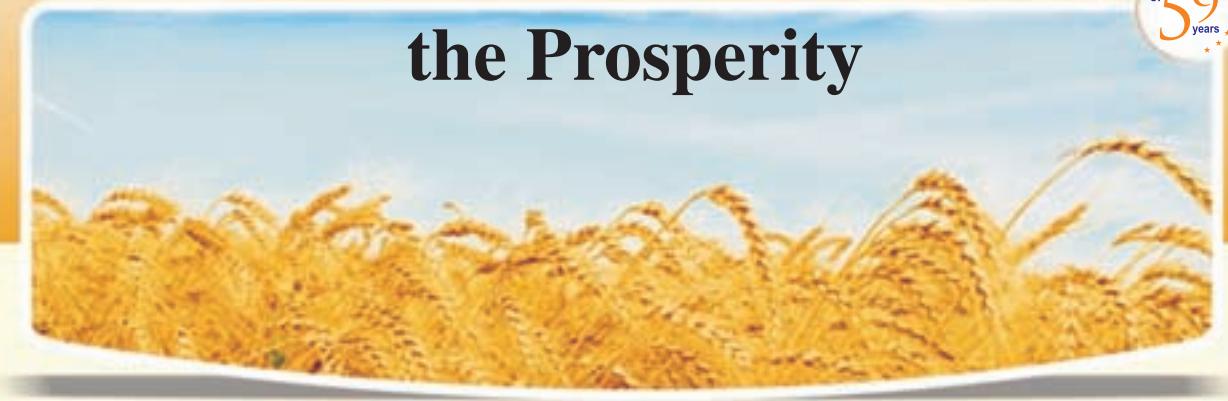
The number of short-term migrants (being away for a period of 15 days to 6 months) is larger than the number of individuals who move permanently during the year. An estimated 10 million households in rural India have at least one short-term migrant per year. Households with a short-term migrant have lower monthly per capita consumption expenditure than those without, suggesting that short-term migrants are from the bottom end of the consumption distribution.

- Rural–rural migration streams represented 55% of total migration flows (250 million people) for 2011. Rural-to-urban migration represented only 20% (90 million people). If only net rural–urban migration is considered, the share declines to 14% due to a flow of urban–rural migration equal to 6%. The shares of different migration flows have remained relatively stable over the three censuses for which data are currently available.
- There exist distinct gender differences. For female migrants, rural-to-rural migration flows are dominant, with a share of 64 percent, while rural–urban migration represented only 16% in 2011. For men, rural–rural migration represented only 34% of migration flows and rural–urban flows were 30%. The differences may be associated with different motivations for migration. Women's migratory movements are mostly motivated by marriage instead of work/employment like in the case of men.
- Remittances from international migrants improve the purchasing power of households and contribute positively to household food security.

The above trends may have implications for generating livelihoods in rural areas.

Let us
Welcome

the Prosperity



THE PUNJAB STATE COOPERATIVE AGRICULTURAL DEVELOPMENT BANK LIMITED AT YOUR SERVICE

The Punjab State Cooperative Agricultural Development Bank was established for the welfare of the farmers on 26.02.1958. Today the bank is extending all type of facilities in respect of advancement/loan/deposits etc.

ADVANCEMENT OF LOAN FOR NON FARM SECTOR ACTIVITIES

Restaurant/Dhabha, Marriage Palaces, Atta Chaki, Purchase of Trucks, Green Houses, STDs, Saloon & Beauty Parlour, Boutique, etc.

ADVANCEMENT OF LOAN FOR AGRICULTURE AND ITS ALLIED ACTIVITIES

Purchase of Tractor, Purchase of Land, Poultry Farm, Fishery, Piggery, Bee Keeping, Dairy Farming, Organic Inputs, Cattle sheds etc.

GENERAL LOANS

Rural Hosing, Education, Rural Godowns and many more schemes.

SPECIAL FACILITIES

Kisan Credit Cards, 0.50% rebate in interest to women borrowers, rebate of 0.50% to Good Pay Masters, No Loan Fee from Women Borrowers, Simple Rate of Interest charged by PADBs.



Rates of Interest for Advancement

Upto Rs. 50,000/-	: 11.65%
Above Rs. 50,001/-	: 12.85%
Commercial Dairy	: 12.35%

Nominal Loan Fee

FIXED DEPOSITS

Period	Rate of Interest
For one year upto two years	7.35%
Above two years upto three years	7.00%
Above three years	7.00%

Senior citizens will be paid interest of 0.50% more than the above described rates of interest.



For more information please contact your nearby PADB

THE PUNJAB STATE COOPERATIVE AGRICULTURAL DEVELOPMENT BANK LIMITED

S.C.O. 51-54, Bank Square, Sector 17-B, Chandigarh.

Phone : 0172 5011724, E-mail: sadbmd@gmail.com

Website: www.agribankpunjab.org

mahindra
Rise.

MAHINDRA TRACTORS
Technology se tarakki

MAHINDRA TRACTORS

Technology se tarakki karo.

Mahindra presents tractors with the most advanced technology
that opens doors to new possibilities in farming.

Mahindra
JIVO
24HP 4WD

Mahindra
YUVO
32HP | 35HP | 40HP | 42HP | 45HP

ARJUN
NOVO
49.9HP | 52HP | 57HP | 57HP 4WD



10761506

www.mahindratractor.com

 facebook.com/MahindraTractorsIndia

 twitter.com/TractorMahindra

 youtube.com/MahindraTractorsofficial

