

LAND BANK JOURNAL

VOLUME 57 • DEC. 2017 • ISSUE III



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LAND BANK JOURNAL (QUARTERLY)

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SUBSCRIPTION RATES

Annual

₹60/- (For Members)

₹200/- (For Others)

Price per copy

₹15/- (For Member)

₹50/- (For Others)

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
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Agriculture & Rural Development Banks' Federation.*

News compilation by Foundation of The Billion Press

Contents

**Role of Liquid Plant Growth Promoting
Rhizomicrobial Consortia for crop improvement** 03
Nandish M.S. and Suchitha, Y.*

**Problem Areas and Measures Needed for
Capacity Building of Agricultural Cooperatives** 09
Daman Prakash*

**PM Identifies Areas where Cooperatives
Need to Contribute** 17

**Invigorating Smart Dairying in India:
Some Reflections** 18
C.L. Dadhich*

सहकारिता आंदोलन के समक्ष चुनौतियां 26
श्री राधा मोहन सिंह

32 News
& Notes

43 Agricultural
News

Sustainable Development is defined by Brundtland Commission as development that meets the needs of the present without compromising the ability of future generations to meet their needs. Sustainable development seeks to achieve economic growth while protecting nature and life supporting systems. United Nations General Assembly adopted Agenda 2030 for sustainable development in September 2015. The UN Agenda for sustainable development consists of 17 Sustainable Development Goals (SDGs) and 169 targets, encompassing social, economic and environmental dimensions of sustainable development. Eradication of Poverty (Goal 1) is the most important of these goals which is critical to achieve other people related goals like ending Hunger (Goal 2), Health and Wellbeing (Goal 3), Education (Goal 4), Gender Equality (Goal 5), Access to Clean Water (Goal 6), Access to Affordable Energy (Goal 7), Reduction of Inequalities (Goal 10) and also in addressing constraints in urban services of transport, housing etc., as envisaged under Sustainable Cities and Communities (Goal 11). In fact, lack of access to food and nutrition, quality health care services, education, clean water and energy, housing and transport etc., are problems faced mainly by poor people and not by people who have resources to acquire limited supply of each of the above. People living in extreme poverty (less than 1.90 US \$ per day) declined by more than half during 1990-2015. Still, globally 84 crore people live in extreme poverty leading to hunger, malnutrition, limited access to education, health care and social discrimination. The UN Agenda envisages eradication of extreme poverty and reduction of poverty in all its dimensions by half and introducing social protection system for the remaining half by 2030. In India, people living in extreme poverty account for about 15% of the population which comes to more than 20 crores. About 70% of them are small and marginal farmers, landless labourers and artisans living in rural areas. Rural poverty and agrarian distress, therefore, are the main challenges in poverty eradication in India. The share of agriculture in the national GDP came down from 57.7% in 1950-51 to about 15% at present. However, this reduction in the share of agriculture in GDP is not accompanied by proportionate reduction in the percentage of population dependent on agriculture which is about 48% at present. Small and marginal farmers while accounting for only 44% of total area under cultivation, contribute to more than 2/3 of total agricultural production and contribute substantially to India's food security. It is an irony that majority of them have no food security for themselves due to poverty. Addressing this small holder farmer paradox involve making their farms and households viable on a sustainable basis. Apart from increasing productivity and production, markets and prices are also important factors to achieve farm viability.

However, achieving farm viability alone is not enough for them to move out of poverty because of small size of their farms and farm incomes. One of the important targets in UN Agenda for Sustainable Development is to double the incomes of bottom 40% of population by 2030. In India, Govt has embarked on an ambitious programme of doubling of incomes of farmers in 5 years from 2017 to 2022. The distance of farmers in the value chain to the ultimate consumer of their produce is a major factor deciding their income. Their incomes can be increased substantially by reducing this distance through an enterprise organised and owned by them for carrying out post harvest operations including procurement, storing, processing and marketing. Small holder farmer households also should be able to access opportunities for educating and skilling their next generation for decent work in other sectors in order to take their households out of poverty.

As value based and principle driven enterprises, cooperatives by nature are sustainable and are well placed to contribute to sustainable development's triple bottom line of economic, social and environmental objectives. In developing countries, cooperative sector is a powerful tool for social and economic empowerment of people with limited means who otherwise would be excluded from main stream social and economic life. The contributions of Cooperatives in Eradicating Poverty (Goal 1) and Hunger (Goal 2) are quite significant. Cooperatives in many countries also play a big role in Health Care (Goal 3), Education (Goal 4), Water (Goal 6), Energy (Goal 7), Gender Equality (Goal 5), creating Decent Jobs (Goal 8) and in practicing by themselves as well as promoting among their members the Goal of Responsible Production and Consumption (Goal 12) and in the promotion of Sustainable and Peaceful Societies (Goal 16). Cooperatives also provide collective response to crisis and has provided stability to a great extent in the midst of economic crises. Cooperatives with their focus on members and local needs, therefore, are central to the realisation of SDGs. However, they are found to be not active in the process of evolving sustainable development solutions and policies at national and international levels. Cooperatives need to increase their visibility and involvement at national and international levels to enhance their participation in achieving sustainable development goals.

K K. Ravindran
Managing Editor



Role of Liquid Plant Growth Promoting Rhizomicrobial Consortia for crop improvement

Nandish M.S. and Suchitha, Y.*

1. Introduction

Now a days, biological means for production of agricultural commodities is gaining lot of importance, among biological means; microorganisms being an integral component of soil ecosystem play a prestigious role by making the soil truly living. These organisms have evolved many mechanisms such as antibiosis, competition, parasitism, resistance induction in plants etc., to provide effective disease suppression, nutrient availability and plant growth promotion. The significance of plant growth promotion, rhizosphere competence and the suppression of diseases and pests on the plants is much considered research theme in present days. Multiple microbial interactions involving bacteria and fungi in the rhizosphere/phyllosphere are shown to provide enhanced biocontrol and plant growth promotional activities than when used singly. There is growing interest in the presence of certain naturally occurring, beneficial microorganisms in agricultural lands. The microbial consortium is a group of different species of microorganisms that acts together as a community. These consortia are mostly found in soil ecosystems, activated sludge basins, biofilms, etc., In a consortium, the organisms work together in a complex and synergistic way, where all benefit from the activities of others in the community. Microbial consortia are much more efficient than single strains of organisms with a diversity of metabolic capabilities.

Estimated demand and supply of Plant Growth Promoting Rhizomicroorganisms (PGPRs)

India is one of the important countries in plant growth promoting microorganism production and consumption. In order to encourage the organic agriculture by different PGPRs, five microbes namely Rhizobium, Azotobacter, Azospirillum, Phosphate solubilizing bacteria and mycorrhiza have been incorporated in the FCO, 1985. The average consumption in the country is about 45,000 tons per annum while the production being less than the half. At present in India there is a gap of about 10 million tones of plant nutrients between removal by crops and replenishment through fertilizers. It is evident that there is a tremendous gap between the annual demand and production of the microbial fertilizers globally especially in

India. Hence, the judicious combination of chemical fertilizers and microbial fertilizers is also encouraged considering economic and ecological concerns. It is estimated that the present level of PGPR use is quite low and there is a substantial potential to increase it to 50,000-60,000 tons by 2020. The maximum production capacity is in Agro Industries Corporation followed by State Agriculture Departments, National Biofertilizers Development Centers, State Agricultural universities and private sectors.

The concept of Liquid biofertilizers

"A preparation comprising requirements to preserve organisms and deliver them to the target regions to improve their biological activity (or) A consortium of microorganisms provided with suitable medium to keep up their viability for certain period which aids in enhancing the biological activity of the target site". Liquid formulation is a budding technology in India and has very specific characteristics and uniqueness in its production methods. Liquid PGPRs are the microbial preparations containing specific beneficial microorganisms which are capable of fixing or solubilizing or mobilizing plant nutrients by their biological activity and even some liquid PGPRs are also capable of suppression of plant diseases.

Why Liquid PGPRs?

In the carrier based (solid) PGPRs, the microorganisms have a shelf life of only six months. They are not tolerant to UV rays and temperatures more than 30 degrees. The population density of these microbes is only 10⁸ cfu/ml at the time of production. This count reduces day by day. In the fourth month it reduces to 10⁶ cfu/ml and at the end of 6 months the count is almost nil. That is why the carrier based microbial inoculants were not effective and did not become popular among the farmers. These defects are rectified and fulfilled in the case of liquid microbial inoculants. The shelf life of the microbes in these liquid microbial inoculants is two years. They are tolerant to high temperatures (55 degrees) and ultra violet radiations. The count is as high as 10⁹ cfu/ml, which is maintained constant up to two years.

Classification of Liquid Plant Growth Promoting Rhizomicroorganisms (PGPRs)

Plant Growth Promoting Rhizomicroorganisms includes all the beneficial microorganisms which directly or indirectly influence the plant growth and yield.

*Department of Agril. Microbiology, College of Agriculture, UAHS, Shivamogga



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I. N₂ – fixers

a) Symbiotic N₂ – fixers:

These are the group of microbes which fixes atmospheric nitrogen symbiotically in association with legume plants by forming specialized structure called nodules. The example of symbiotic N₂ – fixing microorganism is Rhizobium. Where as in certain forest species also the symbiotic nitrogen fixers exists like Frankia (Actinomycetes) in case of Casurina and Alnus.

b) Free living N₂ fixing bacteria: (Azotobacter)

This is free living nitrogen fixing bacteria, lives freely in soil and multiples by making use of the organic matter, as source of carbon (energy) for its growth and existence. Different free living nitrogen fixing bacteria includes Azotobacter chroococcum, Azotobacter agilis, Azotobacter vinelandii, Beijerinckia indica, Beijerinckia mobile, Derxia gummosa. There are free living anaerobic N₂ fixing bacterial groups are there and these fixes nitrogen anaerobically eg. Clostridium pasteurianum.

c) Associative nitrogen fixing bacteria: (Azospirillum and Acetobacter)

Azospirillum is an associative type of microorganism capable of colonizing root surface of plant. By establishing a symbiotic association, it helps plant in getting nutrient 'N' (Nitrogen) from the atmosphere in association with the cereals crops endosymbiotically. The Azospirillum do not form any structural changes in the plant but they will enter in to roots and fix nitrogen. Different species of associative nitrogen fixing Azospirillum are Azospirillum lipoferum, Azospirillum brasilense, Azospirillum amazonense and Azospirillum halopreference.

Acetobacter: This bacterium fixes nitrogen only in the roots of some sugary crops like sugarcane, sugar beet and sweet sorghum. Recently, it is also called as Gluconoacetobacter diazotrophicus.

II. Phosphorus solubilizer

Phosphorus is not an abundant component of the environment and long term cultivation without fertilization depletes soil phosphorus and also results in accumulation of fixed phosphorus by fixation. In soils the phosphorus is fixed as AlPO₄, FePO₄ and CaPO₄ which is unavailable to the crop plants.

The phosphorus solubilizing microorganisms are certain microbes which solubilize fixed form of phosphorus and release the phosphate ions to the soil and such microbial groups are called as phosphorous solubilizers.

Phosphate solubilizers/Phosphate solubilizing microorganism:

Phosphate solubilizing bacteria: Pseudomonas straita, Bacillus megaterium etc.

Phosphate solubilizing fungi: Aspergillus awomori and Penicillium digitatum etc.

III. Potash Mobilizing Bacteria (KMB)

In addition to the regular PGPRs like Rhizobium, Azospirillum, Azotobacter, Acetobacter and phosphate solubilizing/mobilizing microbes to meet N&P nutrition in plants, microbes responsible for potassium mobilization has been isolated and developed from banana rhizosphere which is having the ability to mobilize the elementary or mixture of potassium which can be easily absorbed by plants. It is estimated that 50 to 60% of potash chemical fertilizers usage can be reduced by using Frateuria aurentia. This potash mobilizing biofertilizers can be applied in combination with Rhizobium, Azospirillum, Azotobacter, Acetobacter, PSM etc. Potash mobilizing bacterial based product containing Frateuria aurentia producing plant growth promoting substances which offers plant a multifaceted benefits in terms of growth, by mobilizing potash and making it available to crops. It also enhances the efficiency of chemical fertilizer.

IV. Plant growth promoting substance producers:

These are the microbes which produces some plant growth promoting substances like IAA, GA etc., Ex: Pseudomonas, Bacillus, Azospirillum etc.

V. Compost cultures:

These are the microbial groups which are effective degraders of the polysaccharides (Cellulose, Hemicelluloses, pectin, lignin etc.,) in organic matter. If the decomposing cultures / compost cultures are used in decomposition process we can enhance the rate of decomposition so that the time taken for the decomposition can be reduced with good quality of the compost.

These compost cultures can be used for any type of organic wastes and also for any type of the composting methods. The effective organic matter decomposing cultures includes: a) Trichoderma b) Pleurotus c) Phanerochaete d) Aspergillus.

Physical features of liquid PGPRs:

Usually the liquid PGPR formulations are having high turbidity in the appearance of the solution. The color may be creamy mostly and it varies along with the strain and organisms. The odour may be pleasant but sometimes mild. The Ph is 4.5 or buffer, but buffer with 6.5-7.0 ensures more than 2 years viability.



Utility of liquid microbial inoculants to different crops

Sl. No.	Crops	Microbial inoculants
1	Paddy	Azospirillum, Azotobacter and Phosphate Solubilizing Microorganisms (PSM)
2	Maize	Azospirillum, Azotobacter and PSM
3	Areca nut	Azospirillum, Azotobacter and PSM
4	Sugarcane	Azospirillum, Acetobacter and PSM
5	Ginger	Azospirillum, Azotobacter and PSM
6	Coffee	Azotobacter and PSM
7	Cardamom and Pepper	Azotobacter, PSM, Trichoderma and Pseudomonas
8	Turmeric	Azospirillum, Azotobacter, PSM, Trichoderma and Pseudomonas
9	Pulses	Rhizobium, PSM, Trichoderma and Pseudomonas

Comparison between Liquid and Carrier based PGPRs

Liquid PGPRs formulation is the promising and updated technology of the conventional carrier based production technology which in spite of many advantages over the agrochemicals, left a considerable dispute among the farmer community in terms of several reasons major being the viability of the organism. Shelf life is the first and foremost problem of the carrier based PGPRs which is up to 3 months and it does not retain throughout the crop cycle, Liquid PGPR on the other hand facilitates the long survival of the organism by providing the suitable medium which is sufficient for the entire crop cycle. Carrier based PGPRs are not so tolerant to the temperature which is mostly unpredictable and uncertain in the crop fields while temperature tolerance is the other advantage of the liquid PGPR. The range of possible contamination is very high as bulk sterilization does not provide the desirable results in the case of carrier based PGPRs, whereas the contamination can be controlled constructively by means of proper sterilization techniques and maintenance of intensive hygiene conditions by appropriate quality control measures in the case of liquid PGPRs. Moisture retaining capacity of the carrier based PGPRs is very low which does not allow the organism viable for longer period and the liquid PGPRs facilitates the enhanced viability of the organism.

However, the administration of liquid PGPRs in the fields is comparatively easier than carrier based PGPRs. The other disadvantages of carrier based PGPRs like poor cell protection, labor intensity, and dosage controversy, limited scope of export, expensive package and transport, very slow adaptation by the farmer community are some of the strongest problems which are being solved by the liquid PGPRs very effectively. Therefore, liquid PGPRs are believed to be the best alternative for the conventional carrier based PGPR in the modern agriculture research community witnessing the enhanced crop yields, regaining soil health and sustainable global food production.

Factors affecting Liquid plant promoting microbial consortial formulation

a) Temperature

Temperature is important for the shelf life of microbial products and it can affect their activity pre or post microbial application. Temperature optima and limits vary with the microorganism. Colonization proceeds at field temperatures in the cropping season, but slows at lower temperature. Strains used in liquid formulation normally grow at 37°C and able to tolerate temperature up to 45°C for two years or more. Whereas, solid base shelf life is hardly up to 3 months as rise in temperature beyond 35°C and start rapid decline of organisms.

b) Acclimatization

Effect of environment on PGPR has been studied by many workers. It is reported that it has negative effect on different strains, but all the research was done on the carrier base biofertilizers. It is observed that the efficiency of liquid is almost same in all environments, but efficiency may reduce 20-25% in different climatic conditions in case of solid base. Normally in RCOF liquid formulation of an organism remain active for a long time after application, ideally throughout the period of the crop (2 years to the maximum), or in soil throughout the crop cycle. Temperature humidity, leaf surface exudates and competitors, etc. are the critical factors which inactivates the microbes. They may be lost physically from the target location by the action of wind, rain or leaching depending on the fact why and where the product is used.

c) Effect of humectants

The effect of moisture content on the storage, stability and activity is up to the greater extent. Some organisms may need moisture for their activity. In case of carrier based inoculums the organism gets stressed due to number of reasons when carrier become dry during transport and



storage. Bacteria needs wet plant surface in order to establish them and show its activity. These conditions can be fulfilled only by liquid formulation as they contain humectants. The level of direct effect of humidity on spore forming bacteria in liquid forms is relatively very low.

d) Sunlight intensity

Generally Microbes are sensitive to temperature. The most harmful UV rays reaching the earth's surface have direct effect on microbes. Of course some are less damaging where as some have the maximum effects. However, microbes are sensitive to the wave-lengths outside this range. To counter the harmful effects of high temperature sunscreens are added to a formulation. Sunscreens act by reflecting and scattering physically or by absorbing radiation selectively, converting short wavelengths to harmless longer ones. However, no such types of sunscreens are available in solid base to resist the effect of sunlight.

e) Effect of pH

The pH of a product plays a vital role in liquid inoculum preparation. It must be stabilized within certain ranges. The organisms are inactivated at the extreme high and low temperatures; therefore, a buffer is maintained by adding some additives which render the better shelf life in liquid. Maintenance of optimal pH improves shelf-life of some of microorganisms like Azospirillum, Azotobacter, phosphorus solubilizing bacteria (PSM), potash mobilizing bacteria (KMB), Frateuria aurentia.

Method of application of liquid plant growth promoting microbial consortia

1. Seed treatment:

This method of application is the easiest and effective method of PGPR application which is done before sowing. Here the seed treatment is done before 4 – 6 hours of sowing, in the first step we have to dissolve 70 grams of jaggery in 250 ml of water and we have to cool the solution. Then we have to apply the jaggery solution to the seeds required for one acre area and we have to mix gently so that all the seeds should become stick to each other. Further we have to apply the liquid PGPR required for one acre (250 to 500 ml depending on the size of the seeds) and apply over the sticky seeds and mix gently to get uniform spread of PGPRs over the seeds so that a thin layer/coat of PGPRs should absorb on to the surface of the seeds. Then we have to spread the seeds over the gunny bag and dry them under the shade for thirty minutes and further we can go for sowing either in nursery or in main field.

2. Seedling root dip treatment;

- This method of application is mainly done during

transplanting to main field from the nursery.

- Here 50 to 100 ml of liquid PGPR formulation is mixed in 5 litres of water to get the slurry of the PGPR formulation and then we have to uproot the seedlings and dip the seedling into PGPR formulation and leave it for thirty minutes and after thirty minutes go for the transplanting in the rows.

3. Soil application;

- This method of application is done during the crop stand for effective inoculation of the beneficial microbial consortia to the root zone of crops.
- Here 200 to 250 ml of PGPR formulation is required for one acre area and further the PGPR formulation is mixed in 100 kg of FYM and then broadcast to the field or apply in the rows followed by light irrigation.

4. PGPR formulation can also be applied in the form of sprays:

- The liquid biocontrol and biofertilizers can be effectively applied through sprays using PGPR formulation.
- Here we have to take 5 – 10 ml of PGPR formulation per litre of water and mix and spray the biofertilizers using the sprayers.

5. PGPR formulation application to the horticulture plantation crops

- This method of application of the PGPR formulation is done to the horticulture crops which are already established/orchards like Guava, Sapota, Arecanut, Pomegranate, Citrus etc.
- Here about 25 – 50 ml of PGPR formulation are mixed with 2 – 3 kg of the compost and open a small drench of 2 – 5 cm depth around the tree and apply the compost mixed with PGPR formulation followed by light irrigation.

Constraints

Even though there is a considerable refinement in the field of PGPRs for the past 3-4 decades, the PGPRs industry has been facing some technological constraints, some being resolvable the rest need strong research & development activities.

Crisis of efficient strains

Unavailability of potential regional strains is one of the major reasons. The specificity and competitive ability of the strain is the key point on which the efficacies of the organism relay with respect to the hosting soil and plant variety. The ability



to fix Nitrogen and survival capacity are the limiting factors of the Liquid as well as the carrier based biofertilizers.

Possible genotypic changes

During the production of the fertilizers the organism may get interacted with other organisms which may leads to change in basic character of the organisms. Apart from this during fermentation the strains may undergo mutations which may alter the efficacy and viability leading to the economic loss.

Lack of awareness

In spite of many ongoing projects on the development of PGPRs, proper attention towards the technology is still needed in order to manifest the results at field level. Communication gap and miscommunication of the farmers by some commercial producers also is a considerable constraint. Lack of storage and marketing facilities, consistent awareness in the farmers by conducting community programs is still welcome. As the production and distribution of PGPRs is seasonal, the commercial production units may suffer from lack of demand. Moreover the establishment of microorganisms resisting the antagonistic activity of the native microbes is always challenging. Soil nature, temperature, humidity, ph, local insect population, etc., are some other acclimatization problems.

Future Strategies



- Identification and characterization of potential organisms (unexplored) and their effective exploitation in the field of Agriculture is urgently needed.
- Selection and application of suitable bioinoculants with respect to soil nature, agro climatic condition,

crop variety under proper agriculture practices is needed.

- Genotypic study of the strains and molecular characterization of the plant parts is necessary to understand the plant mechanisms.
- Study of soil texture and compatible studies with respect to microbial interventions.
- Exploring the novel soil bacteria and maintaining the genomic libraries for future exploitation.
- Suitable combinations of microbial formulations (liquid microbial consortium) with optimized field results are preferable for the sustainable production.
- Development of new strains with enhanced capabilities by genetic engineering techniques and DNA technology is needed to maintain an eco-friendly & sustainable agriculture.
- Constructive awareness and technical support by microbiologists and agricultural professionals must be provided to the farmers.

Conclusion:

Appropriate technologies, which do not assault the nature, would have key role to play in ensuring food security, in improving human health, and in rehabilitating and conserving the environment to safeguard the wellbeing of the posterity. Instead of striving for more "green revolutions" with emphasis on miracle seeds, hard hitting, synthetic and engineered pesticides, and increased use of fertilizers, the future must look to natural ways and processes for augmenting agricultural productivity, in this view the utilization of the beneficial plant growth promoting microbial consortia in organic farming is must for high quality and yields and also maintain the soil health.

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PROBLEM AREAS AND MEASURES NEEDED FOR CAPACITY BUILDING OF AGRICULTURAL COOPERATIVES

Daman Prakash*

Background

Agriculture still continues to be the most important economic activity in almost all countries of the Asian and Pacific Region contributing to the highest percentage of labour force and the GNP. Agriculture is still the major source of livelihood for a majority of the population in the Region. However, agricultural productivity is subject to violent fluctuations caused by its heavy dependence on monsoon and damages caused by natural calamities. Measures taken for prevention of damages to agricultural crops are inadequate and systems for disaster compensations prevailing presently are generally inadequate and ad hoc.

Agricultural cooperatives are functioning, in one form or another, in almost all the countries of the Asia-Pacific Region. The cooperative activity started mostly with government assistance and initiatives or as a result of development projects sponsored by bilateral or multilateral agencies. Each country has evolved its own pattern for organisational structure and functioning of these cooperatives. One thing common to all, however, is the existence of small and marginal farmers depending entirely for their livelihood on the meagre incomes from their smallholdings. The present role of cooperatives in providing a suitable infra-structure which can help add value to primary produce, except in a few cases, where agro-processing has been undertaken with positive results is far from satisfactory.

Weaknesses and Problem Areas

Agricultural cooperatives are of immense importance to people. However, they suffer from a number of inherent weaknesses e.g., [a] the individual farmer cannot fight against the brute force of market and is unable to obtain the economies of large-scale production by his own efforts alone; [b] Majority of farmers are small and are often scattered. They are unable to influence the market on their own; [c] the yield from investment in agriculture is, on an average, much below that in industry or trade.

This is because of: [i] high inherent risk involved in production due to climatic factors and other contingencies; [ii] the high percentage of fixed costs and the long production cycle making agriculture less flexible for coping up with sudden changes in demand; [iii] a highly imperfect market, perishable nature of many agricultural products and the lack

of sufficient and suitable storage and processing facilities owing to which the farmer is compelled to sell his produce immediately; and [iv] difficulties in obtaining the required finances to meet his farm and household needs.

In cases where cooperatives are unable to respond to the marketing needs of the members, middlemen thrive and the farmer-members invariably get sucked into the vicious circle which the cooperatives are supposed to eliminate. In developing countries, marketing of agricultural produce is quite complicated. The size of the farm holdings being small, the storage facilities being inadequate, the means of transport and communication being backward, the farmer being illiterate and the government procedures being so difficult to follow, make things difficult. The process of marketing involves a number of activities e.g., collection of the produce at one place, storage, providing finances to the members till the produce is not sold, insurance against risks, standardisation of the product and transporting the produce to the market.

Middlemen also play their negative part to the disadvantage of the farmers. In such an event, agricultural cooperatives come to the rescue of the farmer-producers. They try to provide the farmers with an easy credit and other farm inputs and services. Cooperative marketing helps in providing efficient marketing service at places where they do not exist; in increasing the income of the farmers through better returns for their produce; in stabilising the prices; in keeping the margin of profit low and in exploring better markets and in offering agro-processing to add value to the basic produce.

The major reason for establishing cooperatives was to free the poor and indebted farmers from the clutches of the traditional moneylenders who provided credit at exorbitant interest rates. The primary cooperatives, therefore, started out as credit societies. Later on other types such as marketing cooperatives were introduced. These were designed not only to facilitate the production process but also to increase agricultural production. The main purpose was to provide some relief to the members and help them market their produce. Also the governments fostered these cooperatives to use them for building national food-stocks and to distribute food and other essential items among the people.

*Director RDMC



Success Spectrum

The success spectrum within the Cooperative Movements in the Region varies from country to country. While some cooperatives had achieved spectacular successes in enhancing the income of the farmers through better marketing strategies and innovations, others continued to undertake traditional marketing and serve government programmes. Member participation and active management are the two important factors for the success of any cooperative enterprise. There are still managerial problems interlaced with lack of membership participation in the business affairs of these cooperatives. There is a heavy participation and administrative influence of governments in the functioning of these cooperatives due to excessive pressure on these institutions to serve state policies and programmes.

As a result, cooperative institutions in many Asian countries are more akin to the policies of the government rather than catering to the needs and requirements of their basic constituents i.e., the members. It has also been observed that in a majority of cases cooperatives do not actually involve the members in decision-making. They tend to implement the decisions made by external agencies assuming that such decisions are well-considered and perhaps are in their best interest. Cooperatives are "cooperative-centred" rather than their being "member-centred".

Operational Systems Adopted

Most of the countries follow a three-tier system i.e., primary cooperatives at the village level, cooperative business federations at the secondary level and apex organisations at the national level. An exception is the Republic of Korea which has shifted to a two-tier system. Cooperatives are either single-purpose or multipurpose or specialised organisations. Agricultural cooperatives in Japan are also gradually moving towards a two-tier system.

The current emphasis there is on amalgamation and removing the intermediary secondary organisations at the prefectural levels. The number and size of cooperatives in the Region have generally grown. However, in recent times, there has been a tendency to amalgamate or merge small primary agricultural cooperatives into larger ones in order to take better advantage of economies of scale. The smallness of cooperatives has been claimed to contribute to poor performance. The larger one is supposed to be more economically viable and efficient.

Community-based organisations like agricultural cooperatives have considerable potential to fill the social

vacuum through provision of services which are needed by the community efficiently and in time and which are based on high principles of management and ethics of the Principles of Cooperation.

Agricultural cooperatives to be effective need to improve their efficiency in the following key areas:

- Responding to the needs of the members thereby encouraging member participation;
- Providing technical support in areas of marketing and supply;
- Enhancing higher economic returns to members through value-addition;
- Delivering adequate and timely credit facilities leading to higher productivity;
- Offering a high level of market information enabling better business decisions;
- Demonstrate a high level of managerial efficiency leading to a better 'good will';
- Adopting open attitudes towards joint ventures and collaborations.

Management Leadership in Agricultural Cooperatives

In spite of the drawbacks and difficulties faced by them, the cooperatives are the best-suited institutions for agricultural development in the Asia-Pacific Region. To a great extent they are indispensable for accelerating the development in general, and agriculture in particular. The remedy lies in streamlining their activities in a manner in which they could increase their own resources and improve their technical and managerial capabilities to safeguard the interests of their members.

Successful examples of cooperatives which have taken such initiatives are not lacking. Such streamlining would be possible only if the leadership responsible for cooperative promotion and development and for managing their day-to-day operations is responsive to the needs and aspirations of the farmers. Of special importance to cooperative functioning is the leadership provided by managerial and technical personnel competent to ensure maximum economic advantages to the producers and to ensure that the cooperatives are member-centred.

The staff and board members of cooperatives also lack managerial skills mainly due to inadequate training support available within the Movements. Many precious business opportunities are missed because there was lack of interaction between the board and the managers. Although the cooperatives were in good condition but due to inadequate training, the members could not exploit such advantages. Due to limited resources at the command of



primary and secondary level cooperatives, it has been difficult for them to sponsor their staff for training at higher level training institutions even within the country or abroad.

The management leaders have very little opportunities to interact with their counterparts in other countries. Their understanding and appreciation of cooperative operations remains limited to their home situations. The need is to expand their horizons of knowledge and understanding to improve the quality of management of their own co-operative institutions. Such opportunities and exposures are considered absolutely essential if the staff and board members are to play effective and fruitful roles in the business activities of their co-operatives and deliver a higher level of economic satisfaction to the members.

Capacity Building Efforts by Movements and Governments

The following capacity building measures are adopted by the government and Movement:

-Reforming the cooperative legislation and cooperative policy;

- Training, development of cooperative personnel;
- Enhancing the capacity of cooperative training institutions and others;
- Revamping the curriculum and training material to conform to the needs;
- Emphasise on technology transfer through experience sharing;
- Promotion of self-help group for capital formation;
- Promotion of IT and MIS within the Movement;
- Joint Venture programmes.

The principal agency for the promotion of cooperatives in Thailand is the Cooperatives Promotion Department [CPD] in the Ministry of Agriculture. Its main areas of concern are: Promotion and dissemination of cooperative ideology and information; Carry out research and development programmes; Advise on the establishment of business operations; Provide financial and technical support to cooperatives to make them self-reliant; consolidation and allocation of land to landless; and to observe guidelines on reporting and legal issues.

Some of the major projects of the CPD have been: Credit linkages for production and rice marketing services of cooperatives; Establishment of Tambun agricultural products central markets for cooperatives; Integrated farming promotion in small farm pond project areas; Hygienic vegetable production promotion project; cooperative women development programmes; and Savings promotion among cooperative members.

A Regional Assessment

All the countries in the Asia-Pacific Region have their own cooperative organisations which have been established under legal instruments and have the necessary infrastructure to cater to the needs of their constituents. In the wake of changed economic development pattern due to adoption of open market system, some of the cooperative systems have moved away from the erstwhile centrally-planned economies.

Some of cooperative organisations and governments have tried to establish and operate the needed cooperative education, training, development and extension programmes. It has also been found that there has been a slow reaction to the fast- changing open market systems, and in many countries, agro-processing activities have yet to be encouraged to bring added benefits to the basic members. It is also generally felt that the curricula and methods adopted at the cooperative training institutions are not yet properly keyed to produce more of professional, efficient and effective managers.

Enhancing Marketing Efficiency

A large majority of agricultural cooperatives are engaged in the production and distribution of food, foodstuff and horticulture items. The food marketing sector transforms the raw agricultural commodities produced by farmers into the foods purchased and consumed by consumers. The food marketing system is the arena for two important tasks: [i] the physical marketing functions required to transform the commodity in time, space and form; and [ii] the communication of signals to producers and consumers about the cost of buying something or the benefits of selling it.

Marketing efficiency is determined by the technical efficiency and the price efficiency of the marketing system. Technical efficiency deals with all aspects of raising productivity in all marketing functions such as storage, transportation and processing and thus determines marketing costs.

The aspect of reforms of the Cooperative Movement in many developing countries is all the more important as the world moves to an era of globalisation. Cooperative marketing system must adjust to increased competition for the cooperatives to prosper or they will stagnate and die. To be competitive cooperatives must be efficient – both price-efficient and technical-efficient. Farmer cooperatives should:

- [i] Upgrade technology, build capacity, and increase investments, in agribusiness and marketing through joint ventures and other suitable alternatives;



- [ii] Increase competition by facilitating entry and exit in the business and removing territorial, timing and other restrictions on trade within the Movement;
- [iii] Improve support services to cooperative marketing activities including credit, research, extension, market information, grading, standardisation, market regulations and others;
- [iv] Build network of cooperative assembly, wholesale and retail markets as has been done in the Republic of Korea; and
- [v] Reformulate the training programmes to give high priority to agribusiness and marketing know-how in a liberalised and privatised trading environment.

Marketing of Inputs and Outputs

In all the developing countries of Asia there is a tremendous opportunity for cooperatives to increase their share in marketing of inputs and outputs. Marketing activities by the cooperatives help the small farmers in three ways: [01] Linking of credit and input supplies with marketing of produce; [02] Better price for farmers' produce; and [03] Extra earning to members due to sharing of profit earned in marketing business.

The Integrated Approach

An integrated cooperative aligns its activities and operations with the members' needs and requirements. Instead of merely providing services at the input and output ends, an integrated cooperative directly helps members to increase their production and productivity, by providing an integrated package of services including extension, credit, inputs, guidance and supervision, getting higher prices for their output and other marketing functions. In integrated agricultural cooperatives, member-farmers' income is expected to increase by the following factors:

- [i] Production enhancement activities [better seeds, chemical, practices etc.];
- [ii] Cost-saving activities [bundle volume purchases of inputs etc.];
- [iii] Loss prevention activities [better packaging, storage, transport/marketing; and
- [iv] Value-adding conversion into other products through industrial interventions and gains due to various welfare activities.

Cooperatives in most developing countries have not come up to expectations primarily because of the lack of integrated production orientation. To be successful, various opportunities, especially production-oriented ones, have to be exploited in an integrated manner and not in isolation as in the past.

Failures of Integration - Some Lessons from the Past

The lessons learnt from the past experience are:

- 01 The process of building an integrated system must start at the grassroots level. There should be no pre-conceived notions of activities and structure. The structure must evolve itself from the local needs of the members and their activities;
- 02 Farm produce [output] must be the basis for seeking group action;
- 03 Production and productivity enhancement is as important as improvement in marketing opportunities for the small farmers. It is to be recognised that many activities if not integrated will be either left out completely or their effectiveness will be considerably reduced;
- 04 Integration should lead to greater capital formation with the farmers' organisations and with the farmers. Under integrated system, value-addition would be considerable, and part of this value-addition should be capitalised through retention and pricing mechanisms in accordance with the Cooperative Principles;
- 05 Integration should lead to not only maximisation through value-adding by unified control over the entire system, but also should lead to optimising farmers' welfare through minimisation of costs, especially in distribution of inputs and services. If distribution of inputs and services is not integrated, these get organised as profit centres and, therefore, result in much higher costs;
- 06 Additional employment generated through integrated system must be qualitatively different and quantitatively larger. The integrated system must provide opportunities for the rural youth to improve their skills and employment opportunities within the region commensurate with new skills; and
- 07 Experiences of various countries indicate that for survival and continuous success, a cooperative has to provide monetary, welfare and social benefits to its members. Such benefits develop a sense of identification with the cooperative and help to retain the members and their interests within the cooperative fold.

Vibrancy and Capacity Building needed

Agricultural cooperative marketing cooperatives have to be activated and made vibrant by visualising and establishing perspective business plans. The productivity has to be revolutionised by extending high standard of marketing services and sophisticated technology. The traditional business operations have to be revised to fit into the existing global market scenario. The capacity building exercise



should be enhanced to undertake value-addition by processing of produce. Weaker cooperatives need to be assisted to become self-reliant through appropriate network support. The human capital must be viewed as assets by changing their mind-set; and greater faith has to be reposed in the ingenuity of its members.

Marketing cooperatives can substantially enhance value-addition by undertaking processing activities. Managing agro-based processing projects, in fact, is a double-edged weapon: it not only strengthens agricultural credit and marketing system but also widens scope for rural industrialisation. It is the uniqueness of each project that makes special demands on project managers and simultaneously makes project management a nearly universal and exciting discipline.

Factors Enhancing the Impact of Agricultural Cooperatives

The following factors enhance the impact of agricultural cooperatives:

Internal Factors:

- Viable and integrated cooperative – single commodity or multi-commodity – but providing input supplies with extension and output marketing, and social and cultural services;
 - Strong vertical structural support;
 - Trained professional and motivated staff;
 - Enlightened, dedicated, and selfless leadership;
 - Well-honed means to encourage members' involvement and participation;
 - Comprehensive programmes for members' education and information;
 - Value-added activities through the use of advanced technologies;
 - Provision for reasonable coverage of risk for loss of crops and deposits.

External Factors:

- Positive support and helpful role of the government;
- Market reforms;
- Reasonable rate of growth in agriculture/economy;
- Availability of basic infrastructure;
- Healthy linkages with regulatory and development agencies and institutions.

Conditions Necessary for the Success of Agricultural Cooperatives

Experiences of agricultural cooperatives and the results of various studies have identified several factors which are

responsible for the success of agricultural cooperatives. These are:

- Cooperatives are member-driven, member-controlled and member-responsive organisations; design of the cooperatives imparts high drive level and a cohesive governance structure;
- Cooperatives are efficiently managed by trained and professionally-qualified staff under the supervision and control of democratically-elected boards of directors;
- Cooperatives have integrated their operations with the needs of their member-household i.e., the latter derive economic benefits from their membership of the cooperatives – single or multipurpose; and these benefits tend to be higher than from any other competing system;
- Well-integrated vertical structures of cooperatives exist and these provide support in order to enable the base level cooperatives to effectively and efficiently service their individual members; the federal cooperatives provide advisory services, technical know-how and back-up support services, be it of input supply, crop/animal care, marketing of output, extension, supply of equipment and machinery, sale of consumer articles, or of social or cultural nature;
- Cooperatives undertake comprehensive programmes for member education in order to facilitate the process of members' participation, members' involvement and empowerment; and for training of staff and members of boards of directors;
- Cooperatives undertake value-added operations; choose, assess and employ appropriate but advanced technologies; and forge forward integration in order to gain competitive advantage in the market-place;
- Cooperatives establish viable and strong linkages with external research and development/extension agencies in the field of agriculture and technology. These are appropriate to the needs of cooperatives and their members;
- Cooperatives strive to become self-reliance, accumulate capital and develop other resources in order to remain free from all external controls and directions; and
- Cooperatives are open, ethical, caring, and socially aware institutions. These display social concern in their business operations and in their relations with customers, employees and members, and the community at large.

Agro-Processing Cooperatives – The Advantages of "Value-Addition"

The term agro-processing means establishing processing activities to handle the local produce of the basic farmers



with a view to generate additional or higher economic returns to them. It means to reduce post-harvest losses, check outflow of rural population to urban centres, offer remunerative prices to basic producers, help transfer improved/advanced technology to rural areas, industrialise the rural areas, generate employment opportunities, help improve productivity, help develop specific commodities through greater soil treatment and appropriate application of fertiliser, bring recognition to the progressive and innovative initiatives of the farmers etc.

Value-addition is achieved through an efficient marketing strategy. This means that the basic products need to be transformed into other products which are in high demand in the market. Simple value-addition can be achieved through a careful and systematic handling of the product, its grading, packaging and transportation. Value-addition is also achieved through attractive, informative, branding and its contents and pricing clearly described on labels. Value-addition is also achieved through a better marketing coordination. Another aspect of value-addition is the creation of goodwill for the product to sustain its presence in the market.

Application of sophisticated technology for undertaking value-added activities has ensured the following for the integrated cooperatives and their members:

For Cooperatives:

- Broader membership base;
- Ability to generate higher surplus;
- Enhanced surplus to cover costs on extension staff, and to offer extension services and create facilities for technology transfer at the farm level;
- Surplus resources to undertake rural development, including social and cultural activities;
- Optimum utilisation of members' crops/products and consequently higher returns.

For Membership:

- Higher income levels;
- Higher productivity and production;
- Crops/produce/animal protection through integrated crop/animal-care delivery systems;
- Opportunity for participation in the social and cultural development processes;
- Sound all-round development and maintenance of infrastructure – road, banks, transport services, schools etc.
- Exposure to modern technologies and opportunities to participate in, and manage the working of larger complex social organisations, thus leading to development of rural entrepreneurs/leadership.

Capacity Building Measures

The organisational structure of the agricultural cooperatives is well-spread throughout the Region. Such structures are based on a well-established legal framework which has, in the light of changes in economic and social environment, also undergone some changes and these changes have been constantly pursued as has been evident from various studies carried out by the International Cooperative Alliance [ICA] e.g., the discussions held at the Cooperative Ministers' Conference and the recommendations of the Critical Studies carried out, and other international organisations.

There has been a strong pressure on the agricultural cooperative sector to align its activities with the needs and requirements of the open market systems, WTO agricultural agreements, structural adjustments etc. If the agricultural cooperatives have to exist and continue to sustain there is a strong need for improving managerial efficiency and business performance. There has to be a break from the traditional methods of management and production.

The following two principal approaches can be adopted to enhance capacities of any organisation:

- Economic and Infrastructural Development approach;
- HRD and Professionalisation approach

Under the economic and infrastructural development approach money, machines, markets, management and legal and policy facilitation come into play. Under the HRD and Professionalisation approach it is the key players of the organisation which need to be qualified and improved in skills, methods and techniques to perform the business operations efficiently and with advantage to the owners and users of the organisation.

According to the experience of the sector in various countries of the Region the following are the core areas in which capacities and capabilities need to be enhanced:

- [a] Enhancing the managerial efficiency by incorporating better management methods and techniques through a process of continuous training and development. This involves: development of appropriate methodology for the training of managers; development of training infrastructure and utilisation of existing training infrastructure through appropriate changes and modifications; development of a cadre of well-informed trainers; development of suitable and practical training materials; incorporation of on-the-job learning opportunities for managers; providing exposure to managers to learn from experiences of other countries e.g., India, Japan, Korea etc. where value-addition is achieved with some degree of success



through agro-processing; and training of managers in a project approach method;

- [b] Enhancing management leadership capacities and capabilities through a process of intensive training and extension work at the level of committee members, leadership functionaries and key members. This involves: development of appropriate methods and training resources; utilisation of existing training infrastructure; and exchange of experiences with a view to take well-considered business decisions and developing a fruitful relationship with the members and managers;
- [c] Enhancing physical capacities of agricultural cooperatives to produce and market safe and fresh farm products with a view to generate earning capacities of the local farmers by making use of the local products. This involves: adoption, adaptation and pursuing other methods of enhancing business capacities of agricultural cooperatives e.g., exploitation of local materials and resources, application of local processing technology with improvements, tie up with market operators, extensive consumer contacts, institution of direct sale methods, use of local institutions e.g., cooperatives, retailers, kiosks etc. The "One Village-One Product" concept of Japan is a case in point;
- [d] Enhancing the level of participation of sectoral business federations in promoting the production capacities of their affiliates and supporting them in marketing of their products. This involves: Extensive use of forward, backward and horizontal integration to ensure continuous supply of inputs and marketing of outputs, an assessment of existing markets and local demands; entering into joint ventures with private enterprises to rope in new technology and capital requirements; development of an effective management information system.
- [e] Review and reformulation of existing government policies and procedures which are regarded as restrictive. This involves: intensive dialogue with concerned government authorities, market operators and business relations with members. It also involves a better understanding of open market systems, 'cooperative advantage' in view of the inherent and ever-present group activity and members' support. This also calls for introduction of reliable market information systems and Internet etc.

The basic management tasks for any activity are: [i] Planning, [ii] Organising, [iii] Staffing, [iv] Supervision and control, and [v] Evaluation. In contrast to a manager in the private sector, the cooperative sector manager has to play two principal roles e.g., in relation to members of the cooperative; and in

relation to subordinate staff. He is a link between the organisation management and the members, and between the organisation itself and the open market. He is an authentic source of information enabling the management to take appropriate decisions – economic and non-economic.

The ultimate mission of a small agricultural cooperatives is to improve the standard and quality of life of small farmers by improving their income through various activities such as increasing productivity, improving the marketing and processing of their produce and creating off-farm activities.

Capacity Building: Methodology to be Adopted

Agricultural cooperatives in a majority of the countries in the Region generally perform the basic functions which include provision of input supplies, credit requirements, assistance in the marketing of farm produce and some extension activities. With the opening of markets, agricultural cooperatives have been facing some problems e.g., high level of competition, lack of professional and qualified managers, shortage of credit and restricted market places. Other problems faced by them also include warehousing, transportation and lack of communication. In several countries, the national level federations have been found to be competing with their own constituents thus depriving them of market potentials.

From the foregoing, the following have been identified as the main problems faced by the agricultural cooperatives:

- Lack of professional and qualified managers;
- Lack of communication and interaction between the managers and committees;
- Lack of communication with the basic members;
- Lack of interaction with and support of the national/sectoral federations;
- Lack of business linkages;
- Inconsistent/restrictive government policies and rigid regulations;
- Lack of training infrastructure including trainers and training material;
- Very low level of flow of market intelligence;
- Low level of appreciation of value-addition through agro-processing.

Capacities need to be enhanced on two main counts.

- [i] Infrastructural and capital intensive methods; and
- [ii] Human resources development and professionalisation methods.



With a view to enhance the capacities and capabilities of agricultural cooperatives, the following steps need to be taken:

[A] Institutions engaged in the promotion of agricultural cooperatives, including governmental organizations, may organize/institute a series of specialised [one month duration/or as may be feasible] programmes for the key personnel of agricultural cooperatives of all levels [preferably state and national level]. Such programmes be organized in collaboration with well-known management institutes and universities. Consider the following outline:

Title: A high-pitched and extensive training and development programme for managers, management leaders and key members under the title “**Capacity Building in Agricultural Cooperatives for the Management of Agri Business**”.

Aim: The programme is aimed at creating a strong cadre of well-informed managers who are adequately trained to undertake cooperative business operations to generate surplus and services for the cooperatives and their members without compromising on the Principles, Values and Ethics of Cooperation.

The managers will not only generate additional income and employment but also strengthen the management of the cooperative and create a better channel of communication between themselves and committee members on one hand and between the cooperative and its members on the other. In doing so, the managers will be able to create goodwill for the cooperative in the market and deliver high income levels for the members.

Components: Training needs analysis; Case studies on a select number of cooperatives in different countries of the Region; Identification of training locations and trainers; Development of initial training material including identification of existing training material and information in topical issues e.g., WTO implications, environment etc.; Field testing of the material; Implementation of one or two short-term training programmes [of about 4-weeks duration] for at least 15 selected managers; Identification of financial resources; Incorporating evaluation and assessment components for improvement of future training programmes; Identification of a few managers who could serve as trainers for future programmes.

[B] A similar programme of about one week/two weeks duration with some slight modifications is suggested for the top leaders of agricultural cooperatives e.g.,

Chairman and Board Members and some selected key members.

[C] A ‘chain-reaction programme’ [mirror programme] to be considered for implementation by national level agricultural cooperatives for their personnel and cooperative leaders. Already trained managers could function as trainers. The training material could be redesigned to suit local conditions and needs.

[D] Efforts be made to convince the existing national level cooperative training centres and in-house HRD units to institutionalise such programmes aimed specifically at their own products and managers with a view to make a bigger entry in the local and external markets.

[E] A regional study may be undertaken [on a cooperative basis with the assistance and support of relevant international organisations e.g., the ICA, and well-known institutions of higher learning e.g., the IRMA of India, IDACA-Japan, NACF-Korea, ACFSMC-China etc., which are associated with the agricultural cooperatives] to document problem areas of agricultural cooperatives and the problems faced by them vis-à-vis their own federations and governments, and institute a ‘roundtable’ to discuss such problems and help identify possible solutions.

[F] In all the capacity building endeavours efforts are to be made to ensure appropriate governance leading to a responsible civil society which is based on self-esteem, honesty, ethical business operations and members’ satisfaction, environment concerns, conservation of energy and concern for the community.

[G] A continuous monitoring system be instituted within the national level apex or marketing organisations to continue to take note of the work done on Capacity Building and Human Resources Development programmes, and to undertake training and development programmes on a regular basis.

Conclusions and Recommendations

Agricultural cooperatives in the Region exist in almost all the countries. They have a fixed organisational structures with adequate number of management leaders and employees. Their general tasks have been: provision of inputs and credit, support in the marketing of basic products and provision of extension activities. Most of the managers are not qualified and they hardly are professional. In view of the open market they are not able to compete with the private business and therefore have been losing ground. However, they have the support and cooperation of their members, and because of the open market and competition not many cooperatives have collapsed because they have the faith and support of their members.



A number of agricultural cooperatives in India, Japan, Korea etc. have made tremendous progress in 'value-addition through agro processing' and many countries have learnt from each other e.g., the Japanese concept of 'one village-one product' and 'Joint Use' as prevalent in agricultural cooperatives. Because of low level of market information, and managerial competence of the managers and management leaders, agricultural cooperatives have not been able to strengthen their business operations. Most of their income is derived from commissions earned through the distribution of fertilisers, farm chemicals and credit disbursement. Also it has been found that the existing training infrastructure is inadequate to meet the demands of the agricultural cooperatives. Some of the sector business federations have also been found to be competing with their own affiliates.

In order to improve their business and management

efficiency it is necessary that some well-structured training and development programmes are instituted to improve their capacities and capabilities. It has, therefore, been felt that short-term training programmes for managers and management leaders are instituted after carrying out some field studies and negotiations with the respective governments, Cooperative Movements and training institutions.

After the performance of the short-term training programmes, long-term programmes be institutionalised at training institutions and also incorporated in the in-house HRD programme in respective countries [to be undertaken by national level agricultural marketing unions/federations]. The trained managers could then serve as the trainers of the future.

PM Identifies Areas where Cooperatives Need to Contribute

The birth centenary celebrations of Shri Laxmanrao Inamdar was organised by the Ministry of Agriculture and Farmers' Welfare in collaboration with Sahakar Bharati on 21 September, 2017 at Vigyan Bhavan, New Delhi. Around 2000 delegates from cooperative institutions across the country attended the event besides various cabinet ministers, representatives of Niti Ayog, high officials of the Government of India from various ministries and cooperative ministers of the states of Chattisgarh, Madhya Pradesh, Rajasthan, Haryana and Manipur.

The Prime Minister, Shri Narendra Modi, who inaugurated the conference as the chief guest, said our country is a "Bahuratna Vasundhara" where many people have made great contributions across regions and time periods. While some of them become well known and are talked about by the media, there are many others who make valuable contributions, even though they remain largely unknown, he said. The Prime Minister referred to Laxmanrao Inamdar, popularly called Vakil Saheb, as one such person.

The Prime Minister emphasized that the first principle of the cooperative movement is to unite everyone, even while remaining anonymous. He said, Shri Inamdar had imbibed this principle, and his life is a source of inspiration. The Prime Minister spoke of the goals such as doubling farmers' income by 2022, and balanced development in rural and urban areas. He said the cooperative movement can play a key role in achieving these objectives. The Prime Minister also highlighted the importance of preserving the "spirit" in the cooperative movement, which he said, is still largely intact in the rural areas. He reiterated Shri Inamdar's mantra of "Bina Sanskar, Nahin Sahkar."

The Prime Minister went on to say that today the farmer buys in retail but sells in wholesale; this process needs to be

reversed to eliminate middlemen and help raise incomes of farmers. Giving example of dairy cooperatives, he said the cooperative movement has the capacity to solve people's problems. He added that the cooperative movement is in sync with the nature of Indian society. The Prime Minister mentioned neem coating of urea, bee keeping, and seaweed cultivation, as areas where the cooperative movement could contribute significantly.

On this occasion, the Prime Minister released two books: one on Shri Laxmanrao Inamdar, and one titled "Nine Gems of Indian Cooperative Movement", written by Shri Ashok Sharma, Consultant, NCUI, who has served in the past as Director of NCDC. The Prime Minister also gave away awards for cooperative excellence.

Addressing the event, Union Agriculture Minister Shri Radha Mohan Singh said cooperative movement has contributed in developing rural economy, reducing regional imbalances, and helping the farmers in marketing of their produce. He informed that cooperatives are significant players particularly in sectors like dairy, fertiliser, poultry, fishery and food processing besides banking, and plays a significant role in the economic development of marginal and weaker sections of the society. He highlighted the contribution of NCUI and NCCT through their wide-ranging programmes for cooperative officials which have strengthened the professional working of cooperatives. He further informed that NCDC has extended financial assistance worth ` 28,771 crore to cooperative societies in the last three years (2014 to 2017) for computerisation of PACS. The government of India has contributed ₹ 1,900 crore and more than 63000 PACS have been benefitted through this scheme, he added.

(Source: The Cooperator Oct. 2017)



Invigorating Smart Dairying in India: Some Reflections

C.L. Dadhich*

Introduction

Dairy sector plays very important role in Indian Economy in general and agricultural economy in particular. It is second largest employment and income provider in rural areas next to crop sector. Milk is a major output of dairy sector and is an important source of nutrition. The higher consumption milk promoted the nutritional security. The availability of milk particularly to the poor in the remote part of the country is imperative for the nutritional security. The main objective of this paper is to capture the strengths and weaknesses of Indian dairy sector. The paper also suggests measures to improve the situation. The paper is divided into four sections while main strengths are discussed in Section I, weak spots are covered in Section II. Important suggestions to improve the situation are mentioned in Section III and summary of the discussions is delineated in the last section.

I. MAIN STRENGTH

1.1. Robust Growth Trajectory of Milk Production

Though dairying was a subsidiary occupation in rural India, for centuries, it gained importance as cash earner only after the success of Amul in Gujarat with the establishment of National Dairy Development Board in 1965. Milk production made rapid strides in terms of quantum and per capita availability of milk.

1.2 Milk Production and Availability

Since 1968-69 milk output and per capita availability increased from 21.2 million tonnes (per capita availability 112 gram/day) to 155.5 million tonnes (per capita availability of 337 gram/day). Despite sharp rise in population from 518 million persons in 1968-69 to 1260 persons in 2015-16, the increase in per capita availability suggests that milk production growth was remarkable. The growth tempo is still robust. It grew at 6.3% in 2015-16 as against world milk increase of 3.1% during the year. The robust growth of milk production in India is attributed to linking of rural milk supplies to urban demand. Concerted efforts were made by NDDB to organise and develop dairy co-operatives under Anand pattern (NDDB 2006). These efforts are popularly known as operation flood programme.

1.3 Low Volatility of Milk Production

It may be observed from data on value of output for crop livestock and milk sub-sectors as presented in Table 1 that value of output for crop sector is highly volatile as compared to that of livestock in general and milk in particular.

Apart from augmenting per capita availability, the Indian dairy sector has ensured a stable availability of milk. The stability in dairy income is far stronger as compared to income deduced from agricultural activities.

Table 1 : Value of Output: Agriculture, Livestock & Milk

(₹ Crore at 2004-05 prices)

Item	Agriculture		Livestock		Milk	
	Value	Year on year growth in percent	Value	Year on year growth in percent	Value	Year on year growth in percent
2004-05	458,496		180,034		123,907	
2005-06	484,588	5.7	187,779	4.3	129,729	4.7
2006-07	503,122	3.8	195,850	4.3	133,900	3.2
2007-08	532,555	5.9	204,454	4.4	138,643	3.5
2008-09	524,972	-1.4	217,641	6.4	147,832	6.6
2009-10	524,119	-0.2	226,676	4.2	153,280	3.7
2010-11	579,233	10.5	240,166	6.0	160,530	4.7
2011-12	609,352	5.2	251,831	4.9	168,431	4.9
2012-13	609,126	0.0	261,771	3.9	174,198	3.4

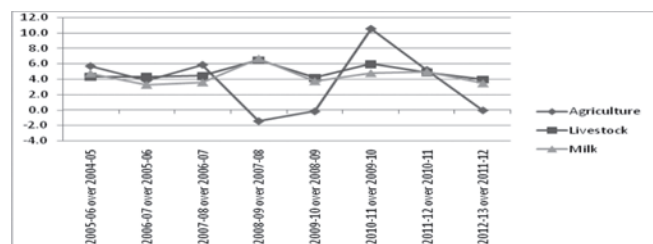
Source: National Accounts Statistics.

*Hon. Secretary, Indian Society of Agricultural Economics, Mumbai



The analysis of national accounts statistics reveals that the agricultural growth has been fluctuating; the growth in value of milk has remained steady over the years (Chart I). This is a unique characteristic of the dairy sector. It is empirically found that the economic reliance of dairy sector increases during periods of environmental adversities to ensure not only food security but stable nutritional security.

Chart 1: Year on year change in value of agricultural, livestock and milk output (%)



1.4 Contribution in Gross Domestic Products

In 2014-15 livestock sector generated output worth ₹ 7331 billion at current prices, of which milk and milk products was ₹ 4922 billion (67.2%), meat group ₹ 1507 billion (20.3%) and eggs was ₹ 239 billion. In physical terms livestock sector produced among others 146.3 million tonnes of milk, 3.2 million tonnes of meat and 66.4 million eggs in 2014-15. The share of livestock sector in gross domestic product (GDP) was 4.0%. However, its share in agricultural GDP was as high as 26.7% (Basic Livestock Statistics, 2016) while share of agricultural GDP in total GDP is declining, the share of livestock GDP in agriculture GDP is going up indicating that livestock GDP is growing faster than agricultural GDP. It is worth mentioning here that growth rate of livestock sector was 1.5 times higher than growth in crop sector. Livestock sector in general and dairy sector in particular provides cushion to overall agricultural growth (Planning Commission,

2012). It is indeed driver of growth in agricultural sector.

II. SOME WEAK SPOTS IN INDIAN DAIRY SECTOR

Amidst promising growth and production record of milk, there are quite a few weak spots in Indian Dairying.

2.1 Low Milk Yield

Number of milch cattle, milk produced and yield per cattle relating to top five milk producers of the world is presented in Table 2. It may be observed there from that yield per milch cattle in India is a low as 3.8 kg/day as compared with 27.6 kg/day in U.S.A. and 6.0 kg/day in China. However India ranked third among the top five cow milk producers of the world.

Table 2: No. of milch cattle, milk production and yield in top 5 milk producing countries - 2016

Country	Milch cattle (millions)	Milk production (MMT)	Yield (Kg/per day)	Percentage share in World Milk Production
India	116	160.4	3.8	19.6
U.S.A.	95	96.3	27.6	11.8
Pakistan	63	42	1.8	5.1
China	19	43.1	6.0	5.3
Brazil	28	33.4	3.3	4.1

Source: Food Outlook 2016

An analysis of state-wise milk yield of cow for the top five cow milk producing states in India (Table 3) reveals that there were wide variations in milk yield ranging from 6.1 kg/day in Tamil Nadu to 3.1 kg/day in Madhya Pradesh. Similarly in case of buffalo yield, variation in yield were quite striking ranging from 8.2 kg/day in Haryana to 4.3 kg/day in Uttar Pradesh (Table 4). It is interesting to note that there is enough scope for enhancement in milk yield in India. We can easily achieve the top yield level of India if not that of U.S.A.

Table 3: No. of milk animals, milk production and yield in top 5 cow milk producing States - 2015-16

State	Milch cow (in 000's nos.)	Milk production (000's tonnes)	Yield (Kg/per day)	Percentage share in India
Uttar Pradesh	5949.4	8242.9	3.8	11.2
Rajasthan	3065.5	6868.4	6.1	9.3
Punjab	3823.6	6629.6	4.8	9.0
Andhra Pradesh	3206.1	6062.0	5.2	8.2
Haryana	5300.4	5930.1	3.1	8.1

Source: DAHDF, Gol.

Table 4: No. of milk animals, milk production and yield in top 5 Buffalo milk producing States - 2015-16

State	Milch buffalo (in 000's nos.)	Milk production (000's tonnes)	Yield (Kg/per day)	Percentage share in India
Uttar Pradesh	10636.2	16864.5	4.3	22.1
Rajasthan	4585.3	9937.2	5.9	13.0
Punjab	2684.5	7814.0	8.0	10.2
Andhra Pradesh	3693.1	7444.8	5.5	9.7
Haryana	2259.3	6772.4	8.2	8.9

Source: DAHDF, Gol.



2.2 Increasing Milk Production by Adding Milch Animals

An analysis of herd composition in India reveals that the number of livestock increased by 0.8 % per annum from 350 millions in 1966 to 512 millions in 2012. At disaggregate level highest growth of 1.9% was noticed in case of female buffalo, closely followed by 1.6% in case of goat, cow 1.0 % and 0.9% in each of the male buffalo and sheep. Contrastingly decline at the growth rate of 0.8% per annum was noticed in the case of each bullock and other animals. In short, as against the highest number of bullock (97 million) followed by cow (80 million) goat (65 million) and sheep (42 million) in 1966 highest number of goat (135 million) followed

by cow (123 million), buffalo (93 million), bullock (68 million) and sheep (65 million) was registered in 2012 (Table 5). In short, number of dairy animals increased from 118 million in 1966 to 216 million in 2012. Similarly number of goats also increased from 65 million to 135 million during the period under review plausibly. Since the establishment of NDDB in 1965 the composition of livestock herd has undergone a significant change in general and dairy herd in particular, while number and proportion of buffalo in livestock herd have increased substantially, number and proportion of bullocks declined drastically. Goats, the poor man cow have also assumed importance.

Table 5: Species-wise livestock: 1966 and 2012

Particulars	No. in millions		Percentage to total		CAGR %
	1966	2012	1966	2012	2012 over 1966
		Workstock			
Cattle (male)	96.7	68	27.6	13.3	-0.8
Buffalo (Male)	10.6	16	3.0	3.1	0.9
Sub-total	107.3	84	30.7	16.4	-0.5
		Dairy Stock			
Cattle (Female)	79.5	123	22.7	24.0	1.0
Of which Crossbred (Female)	-	34	-	6.6	NA
Buffalo (Female)	38.7	93	11.1	18.1	1.9
Sub-total	118.2	216	33.8	42.1	1.3
		Small Ruminants			
Goats	64.6	135	18.5	26.4	1.6
Sheep	42.4	65	12.1	12.7	0.9
Sub-total	107.00	200	30.6	39.1	1.4
Others (Horses, Mules, Pigs, Donkeys & Camels and Yaks & Muthuns)	17.9	12	5.1	2.4	-0.8
ALL	350	512	100.0	100.0	0.8

Source: Livestock census 1966 - 2012

Further the composition of in milk animals during 2014-15 (Table 6) indicate that out of total 85.7 million in milk animals as many as 31.8 million constituting about 37.1% of the total in milk animals were non descriptive indigenous cows. These are very poor yielders with milk yield of only 2.54 kg/day as

compared to 7.15 kg/day crossbred cow and 5.15 kg/day of buffalo. As a result of poor yield, these animals contributed only 20.9% of total milk. Incidentally this category of milch herd has very long dry period causing low wet ratio (Dadhich and Meena, 2012).

Table 6: Composition of in Milk Animals Milk Production and yield 2014-15

Type of animals	Number of Animals (in 000s)	Production (in 000s tonnes)	Yield (kg/ Day)
Exotic/Crossbred Cows	14147.22 (16.5)	36938.92 (26.2)	7.15
Non-Descript/Igenous Cows	31801.94 (37.1)	29484.53 (20.9)	2.54
Buffaloes	39725.23 (46.4)	74709.9 (52.9)	5.15
TOTAL	85674.39 (100.0)	141133.35 (100.0)	4.51

Figures in bracket are percentage to total.
Source: DAHDF Gol.

A disaggregated analysis of milk production by indigenous cow (Table 7) indicates growth in the milk production was achieved mainly by increasing the number of animals rather than yield improvement. In 2014-15 the contribution of yield in overall growth rate of 3.99% in milk production was only 1.58% as against increase in number of milch animals at

2.41%. Speaking in terms of share in basic percentage points growth, yield contributed only 40% as against 60% by increase in number of animals. Evidently role of yield in growth of milk production was secondary. Needless to say the country cannot afford luxury of adding of animals year after year to increase milk production.



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(₹ in crores)

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1	Paid - up Share Capital	109.27	120.48	10.26
2	Reserves	417.50	432.47	3.59
3	Owned Funds	52.677	552.97	4.97
4	Deposits	3252.41	3424.38	5.29
5	Borrowings	3055.37	3202.04	4.80
6	Investments including call & Short Term deposits	2865.34	2813.49	-1.81
7	Loans & Advances	4080.28	4457.90	9.25
8	Net Profit (after tax)	16.97	26.55	56.45



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Table 7: No. of Non-Descriptive/Indigenous Cows milk production and yield 2007-08 to 2014-2015

YEAR	No. of Milk Animals (in 000s)	Yield (kg/ day)	Milk Production (in 000s tonnes)	Percentage change over previous year		
				Animals	Yield	Production
2007-08	29587	2.11	22809	-	-	-
2008-09	29842	2.17	23650	0.855	2.77	3.56
2009-10	30199	2.2	24238	1.18	1.36	2.43
2010-11	30948	2.24	25348	2.42	1.79	4.38
2011-12	31882	2.3	26695	2.93	2.61	5.05
2012-13	31871	2.36	27421	-0.033	2.54	2.65
2013-14	31035	2.5	28306	-2.69	5.6	3.13
2014-15	31802	2.54	29485	2.41	1.58	3.99

Source: DAHDF Gol.

There is no such evidence, in the case of crossbred cow and buffalo. Interesting, almost three times difference between the yield if indigenous cow and crossbreed cow improved native breed like Rathi, Sahawal etc. suggests that upgrading of non-descriptive indigenous breed through selective breeding programme would result in three times increase in the milk yield and milk production, as well. Alternatively same level of milk production would be obtained even by reducing the number of non-descriptive indigenous milch animals by one third.

2.3 Unwanted Side Effects of Increase in Number of Milch Animals

Addition of large number of low yielding animals in the herd has caused few side effects. It has caused higher pressure on land for production of feed and fodder leading to greater competition between man and animals. Besides increase in number of milch animals may further accentuate global warming. This apart, it has caused higher pressure on scarce natural resources including water. According to an interesting study in semi-arid zone area in Gujarat for producing one litre of milk about 1900-4600 litres of water is consumed (Singh et al, 2004). The study further pointed out that dairying based rural livelihood systems are now threatening the limited water resources of arid and semi-arid areas and that future, in turn is threatening by depletion of these resources. Furthermore attending growing number of animals in general and milch animal in particular is not an easy and interesting task. It involves a lot of drudgery. As a result, in recent years a large number of neo rich and educated people do not have any preference for rearing milch animals.

Eventually the market demand driven first white revolution of late sixties has pushed up milk production largely by increase in number of milch animals (Shah and Dave 2010). The contribution of the yield has been secondary in the case of indigenous cattle. Unlike green revolution (which was technology driven) first white revolution was largely market or demand driven. In this context the importance of technology driven second white revolution based on the components of the smart dairying cannot be over

emphasised for augmenting productivity on the one hand and combating side effects of unbridled expansion of number of dairy animals on other.

III. SMART DAIRYING: A WAY FORWARD

In this context, FAO also recommended use of the science and technology to address these issues (FAO, 2013). Dairy farmers can increase yield and reduce wastage by combining scientific knowledge relating to genetics, breeding and feeding animal disease, management and artificial insemination etc. with sensors and information technology. Smart farming (dairying) is primarily based on sensor technology. In this context special sensors with data base on animals have been developed for monitoring the location and health of dairy animals. Sensors are placed within the animal and an alert is sent wirelessly to the tag mounted on the ear of the animal. The data is then sent to the farm management information system which can be made available on farmers mobile system. There are number of applications in this area that allow farmers to know the precise time when animal will be neat and ready for insemination. Similarly a sensor mounted on the collar worn can detect ailments. Applications are in place to monitor acidity levels and temperature within the animals. The data so collected is forwarded to IT System for further analysis and finally sent to end users for taking appropriate decision. Information on supply chain and agribusiness activities also is collected and analysed. The entire process is known as smart dairying.

Broadly speaking smart dairying is transformation of dairy through the application of scientific knowledge technology and IT solutions. Important information technologies include sensing technologies, tele-matic technology, software solutions, communication system, hardware and software system. Smart dairying ensures six 'E', viz., (i) efficient use of resources, (ii) economic viability, (iii) energy savings, (iv) employment generation (v) environment friendly and (vi) equity and social justice (Dadhich 2017).

A typical example of smart dairying intervention relates to National Dairy Plan (NDP) sponsored by NDDB. Under the NDP producer companies are encouraged to arrange village



based milk procurement system that is equipped with electronic weighing and testing system to ensure transparency at all levels, with quality assurance and members payment in their respective bank account (member is informed through SMS). This intervention also ensured higher milk productivity through better feeding and breeding, i.e., ration balancing and quality A1 services at the door step of producers using top genetic available in the country for producing superior calves with higher productivity. Advance technology is being used for milk payment processing, milk pricing and milk data transfer through general Pocket Radio Service route information with mobile technology. Call centre is in place to support field engineering services for better management of equipment and to control breakdown loss (Paayas 2015-16).

Interestingly enough in some of the states particularly in Haryana and Punjab at times, milch animals are not kept only for producing milk, these are kept also for raising quality female calf. There are a large number of sellers spread over number of villages in these two states and there are equally large number of buyers from other states. Some private portals have been developed to act as livestock exchanges. Incidentally such livestock exchanges are in place in some of the developed countries to provide real time service through IT technology. Introduction of digital payment system has further facilitated these innovations.

Needless to say smart dairying will usher in second white revolution in the country that will include both market and technology driven white revolution. Moreover without smart dairying even smart cities cannot exist. And finally everything else can wait but not the smart dairying.

IV. SUMMING UP

Dairy sector plays very important role in Indian economy in general and agricultural economy in particular. It is a major employment and income provider in rural areas particularly to women. Milk is an important output of dairy sector. It ensures nutritional security in the country. India is largest producer of milk with 155.5 million tonnes in 2014-15. Per capita availability of milk at 337 grams/day is higher than world average of 294 gram/day. The value of milk output is more stable than that of crop sector. Economic reliance on dairy sector increases during the environmental adversities to ensure not only food security but to provide stable nutritional security. In India growth of milk output was 6.3 % in 2014-15 as against the world's growth of 3.1%. Despite promising record of dairy sector, it suffers from few weaknesses. Milk productivity is very low. We have sizeable, burden of non-productive animals. Over the years' record, milk output has been achieved by enlarging the size of milch herd. This has caused a number of problems like excessive use of natural resources particularly water, accentuating competition between men and animal for food and fodder, causing adverse impact on environment etc. In this context,

importance of application of science and technology along with information technology in dairy sector popularly known as smart dairying cannot be over emphasized. Smart dairying will not only enhance milk productivity and income of the farmers but will go a long way in making dairy as an interesting and pleasant profession free from drudgeries. Smart farming will be an important component for augmenting farmer's income significantly and making an important contribution towards our mission to double farmer's income by 2022.

References:

1. Dadhich, C.L. (2014), Role of Dairying in Diversification of Indian Agriculture in Eastern India edited by Ghosh Madhusudan and others – Springer Publications.
2. Dadhich, C.L. (2017), Time to push Smart Farming, Business Line, March 25.
3. Dadhich, C.L., Meena P.C. (2011), Dairy Animal Sector Retrospects of Prospects, Indian Dairyman, November 2011.
4. Datta, T.N. and Dadhich, C.L. (2007), "Operational Land Holding and Ownership of Dairy Animals in India", Sarvekshana, 92nd Issue, Vol. XXVII No. 3 and 4, Journal of National Sample Survey Organisation, Ministry of Statistics and Programme Implementation, Government of India, New Delhi.
5. FAO (2013a), Climate-Smart Agriculture: Sourcebook, Rome, Italy: Food and Agriculture Organisation of the United Nations.
6. Government of India (2012), Report of the Working Group on 12th Five Year Plan (2012-17).
7. Government of India, Basic Animal Husbandry Statistics (various years).
8. Government of India, Economic Survey (various years).
9. Government of India, Land and Livestock Surveys (1991-92, 2002-03), Livestock Ownership Across Operational Land Holding Classes in India, NSS 59th Round, Ministry of Statistics and Programme Implementation, New Delhi.
10. Government of India, Livestock Census (various years).
11. Lipper L, Thornton P, Campbell B.M., Torquebiau E.F. (2014), Climate-Smart Agriculture for Food Security, Nature Climate Change Vol.4, pp.1068-1072.
12. National Dairy Development Board (2006), Out of Home Milk Demand Estimation and Milk Marketing Strategies for a New Entrant, (mimeo.).
13. Paayas Milk Producer Company (2015-16), Annual Report.
14. Papuso I., Faraby J.A. (2013), Climate Smart Agriculture, Seminar on Climate Change and Risk Management, May 6.
15. Planning Commission (2012), Report of the Working Group on Animal Husbandry and Dairying, 12th Five Year Plan (2012-17)
16. Shah, Jignesh and Dave, Darshana (2010), "A Shift from Crop-Mixed Traditional Dairying to Market-Oriented Organised Dairy Farming- Plausible Factors Responsible for Structural Transformation in Indian Dairy Sector", Indian Journal of Agricultural Economics, Vol. 65, No.2. April-June.
17. Singh O.P. et al. (2004), Virtual Water Trade in Dairy Economy: Irrigation Water Productivity in Gujarat, Economic and Political Weekly, July 31, 2004.



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सहकारिता आंदोलन के समक्ष चुनौतियां

श्री राधा मोहन सिंह

अमरेली जिला दुग्ध उत्पादक संघ द्वारा 9५ जुलाई, २०१७ को अमरेली, गुजरात में आयोजित सहकारिता सम्मेलन के उद्घाटन समारोह के अवसर पर सम्बोधन के कुछ अंश

जब मैं यह कहता हूँ कि गुजरात राज्य सहकारिता की मातृभूमि है, तब मेरा आशय यह है कि पहली बार भारत में सहकारी स्वरूप की स्थापना गुजरात के तत्कालीन बड़ोदा प्रांत में अंत्योदय सहकारी समिति के रूप में वर्ष १८८९ में प्रारंभ हुई। तत्पश्चात्, अंग्रेजी शासन में किसानों ने आजादी के साथ ही सहकारिता को संस्थागत रूप देने तथा सही कीमत दिलवाने हेतु काफी संघर्ष किया जिसके परिणामस्वरूप वर्ष १९०४ में कोआपरेटिव केन्द्रीय सोसायटी एक्ट बनाया गया।

गुजरात के सहकारी दुग्ध आंदोलन के परिपेक्ष्य में मैं यह बताना चाहूंगा कि पहली बार त्रिभुवन दास पटेल जी के नेतृत्व में गुजरात के खेडा जिले में दुग्ध की सहकारी समिति वर्ष १९४६ में आरंभ की गई जो बाद में अमूल माडल के रूप में विश्वविख्यात हुआ जिसने राज्य की ग्रामीण जनता, दुग्ध किसान एवं विशेषकर महिलाओं को सामाजिक एवं आर्थिक आजादी दी और भारत में अमूल ने श्वेत क्रांति की नींव रखी। सहकारी क्षेत्र के मूर्धन्य नेताओं में गुजरात के लौह पुरुष स्व. बल्लभ भाई पटेल, मुरारजी भाई देसाई, त्रिभुवन दास पटेल एवं बैकुण्ठ भाई मेहता सबसे प्रमुख हैं। इनके बाद ही देश में किसी और नेतृत्व का नाम सुनने को मिलता है। इस अवसर पर मैं सहकारिता की इन महान विभूतियों को हृदय से श्रद्धांजलि देता हूँ और देश के सहकारी आंदोलन से आग्रह करता हूँ कि उनके आदर्शों एवं विचारों, जो कि संस्कारवान थे, पर आंदोलन की गति को अग्रसर करें क्योंकि इसकी महती आवश्यकता है।

आज भारतीय सहकारी आंदोलन विश्व के सबसे बड़े सहकारी आंदोलन के रूप में स्थापित है। भारत वर्ष में सहकारिता की पहुंच गांव से लेकर राष्ट्रीय स्तर तक है। भारत में ७ लाख से अधिक सहकारी समितियां हैं, जो ग्रामीण स्तरीय समितियों से लेकर राष्ट्रीय स्तर के सहकारी संगठनों तक फैली हुई हैं। देश की सहकारी समितियों की कुल सदस्यता ४० करोड़ से भी अधिक है। इसमें लगभग ९७ प्रतिशत गांव तथा लगभग ७१ प्रतिशत कुल ग्रामीण परिवार शामिल हैं। आज भारतीय अर्थव्यवस्था में कृषि सहकारी साख द्वारा १६.९ प्रतिशत, उर्वरक उत्पादन का २९ प्रतिशत, चीनी उत्पादन का २९ प्रतिशत, सहकारिताओं का ५४ प्रतिशत आदि का योगदान दिया जा रहा है।

भारतीय सहकारिताओं ने अर्थव्यवस्था के कई क्षेत्रों में अपने

को मजबूती से स्थापित किया है जैसे डेयरी, बैंकिंग, चीनी, उर्वरक, विपणन, हैण्डलूम, मत्स्य, गृह निर्माण। सहकारी समितियों ने ऋण, उर्वरक, बीज जैसे इनपुट मुहैया कराकर किसानों की राह आसान की है। आज डेयरी सहकारिता ने तो देश-विदेश में अपनी अलग पहचान बनाई है। गुजरात व महाराष्ट्र में डेयरी के साथ-साथ चीनी मिल एवं ऋण समितियों का विकास हुआ तो दक्षिण भारतीय राज्यों में मछली और वन आधारित समितियों का।

राष्ट्रीय सहकारी विकास निगम सहकारिता के समग्र विकास हेतु सहकारी संस्थाओं को सहायता प्रदान करता है जिसमें सरकार से प्राप्त अनुदान एवं ऋण शामिल हैं। गुजरात में डेयरी, भंडारण एवं शीत भंडारण सहकारी समितियों के कम्प्यूटरीकरण, चीनी कपड़ा एवं उपभोक्ता सहकारिताओं को वित्तीय सहायता प्रदान की है। इन योजनाओं के तहत वर्ष २०१४-२०१५, २०१५-१६ एवं २०१६-१७ के दौरान क्रमशः रु.६६३.२३ करोड़ स्वीकृत किए गए तथा क्रमशः रु. १३३.४५ करोड़ रु.२७२.९७ करोड़ एवं रु. ४२४.०४ करोड़ दिए गए।

राष्ट्रीय सहकारी विकास निगम द्वारा यू.पी.ए. सरकार के ३ वर्षों में (वर्ष २०११-१४) में १५१४३.७६ करोड़ राशि निर्गत की गई थी। वहीं एन.डी.ए. सरकार के ३ वर्षों में (वर्ष २०१४-१७) में यह ८९.९८ प्रतिशत बढ़कर २८७७१.३१ करोड़ निर्गत की गयी। मेरा आप सभी समितियों के प्रतिनिधियों से आग्रह है कि समितियों के आर्थिक सुधार एवं क्षेत्रीय असंतुलन को हटाने के लिए एनसीडीसी के विभिन्न विकासात्मक कार्यक्रमों से सहयोग लें।

सहकारी शिक्षा और प्रशिक्षण कार्यक्रम सहकारिता विकास का अहम अंग है। सहकारी समितियों को सक्षम बनाने के लिए यह एक सतत प्रक्रिया है। प्रशिक्षण इसलिए जरूरी है कि समितियों को योग्य एवं व्यावसायिक नेतृत्व मिले। कुशल मानव संसाधन जब तक नहीं मिलेगा तब तक सहकारिताओं के विस्तार में कमी आयेगी। इसलिए सहकारी शिक्षण एवं प्रशिक्षण तंत्र को मजबूत बनाना होगा। भारतीय राष्ट्रीय सहकारी संघ देश में सहकारी आन्दोलन को विकसित करने के लिए कठिन प्रयास कर रहा है, तथा सहकारी क्षेत्र के सुदृढीकरण हेतु सदस्य संगठनों को शिक्षित करने, मार्गदर्शन देने और सहायता प्रदान करने में अहम भूमिका निभा रहा है।

पूरे देश में सहकारी प्रशिक्षण कार्यक्रम राष्ट्रीय सहकारी प्रशिक्षण परिषद द्वारा अपने ५ क्षेत्रीय सहकारी प्रबंध संस्थानों एवं १४ सहकारी प्रबंध संस्थानों एवं पुणे स्थित



राष्ट्रीय स्तर सहकारी प्रबंध संस्थान के माध्यम से सहकारी प्रशिक्षण कार्यक्रम चलाये जा रहे हैं ताकि देश की सहकारी समितियों में कार्यरत कर्मियों को पेशेवर एवं व्यावसायिक बनाया जा सके। परिषद के गुजरात राज्य में क्षेत्रीय स्तर के संस्थान उद्यमान सिंहजी क्षेत्रीय सहकारी प्रबंध संस्थान गांधीनगर द्वारा पिछले तीन वर्षों के कार्यकाल वर्ष २०१४-१५, २०१५-१६ एवं २०१६-१७ में क्रमशः २०८, ६३, एवं ७४ प्रशिक्षण कार्यक्रमों का आयोजन करते हुए क्रमशः ११६४४, २७१३ एवं ३४७१ प्रतिभागियों को प्रशिक्षित किया गया है। यह संस्थान गुजरात के सहकारी क्षेत्र के मध्यम एवं वरिष्ठ स्तर के अधिकारियों एवं गैर पदधारियों को प्रशिक्षण प्रदान करने वाले प्रमुख सहकारी संस्थान हैं। आज गुजरात में ७६८४० सहकारी समितियां हैं जिसमें ८८०० पैक्स, २२५ नागरिक सहकारी बैंक, लगभग १३००० दूध सहकारिताएं, १७५४० गृह सहकारिताएं और ३४१६ श्रमिक सहकारिताओं के साथ ३६७१ सिंचाई समितियां भी शामिल हैं जो अपने आप में एक मिसाल है। नई सहकारिताओं में आप पाएंगे की गुजरात में सौर ऊर्जा चलाने वाली सहकारी समितियां भी तेजी से प्रवेश कर रही हैं।

डाकोर के निकट धुनदी गाँव में ऐसी ही एक सहकारी समिति है जिसका अध्ययन करने देश विदेश के शिक्षार्थी आते रहते हैं। वलसाड के पास अमलसद गाँव की सहकारी समिति चीकु का जूस निकाल कर उसे पैक कर देश विदेश भेजने का काम कर रही है। सबसे अलग तरह की सहकारी समितियों में सौराष्ट्र के तेल उत्पादक सहकारिताओं की भूमिका प्रशंसनीय है। कम शब्दों में कहा जाये तो जिस तरह से गुजरात विभिन्न क्षेत्रों में देश के आर्थिक विकास को गति प्रदान कर रहा है, और अग्रणी है, उसी तरह गुजरात की सहकारिताओं ने भी देश विदेश में अपने परचम को शान से लहराया है। भारत सरकार का नाबार्ड के जरिये प्रारंभिक सहकारी समितियों (पैक्स) को कम्प्यूटरीकृत करने का व्यापक प्रयास जारी है। नाबार्ड द्वारा सहकारिता के क्षेत्र में कार्य कर रही ६३,००० पैक्सों को कम्प्यूटराइज की जाने की कार्यवाही की जा रही है। यह कार्य १६०० करोड़ रुपये की राशि से ३ वर्ष के भीतर कर लिया जाएगा तथा इस कार्य के लिए केन्द्र सरकार द्वारा ६० प्रतिशत एवं राज्य सरकारों द्वारा ४० प्रतिशत दिया गया है। वर्ष २०१७-१८ में गुजरात राज्य ने ७००० पैक्स का कम्प्यूटरीकरण करने का निर्णय लिया है तथा लगभग ७० करोड़ रु. राज्य सरकार ने इस पावन कार्य के लिए आवंटित करने का निर्णय लिया है।

इस कम्प्यूटरीकरण एवं टेक्नोलॉजी की मदद से फहमारे विकास को गति मिलेगी एवं पारदर्शी तरीके से शीघ्र निर्णय हो पायेंगे क्योंकि पूरे भारत में नाबार्ड द्वारा किए गये सामान्य लेखा प्रणाली और प्रबंधन सूचना प्रणाली सॉफ्टवेयर के उपयोग से इन प्रारंभिक सहकारी समितियों

की कार्यशैली और अधिक व्यवसायिक, पारदर्शी एवं प्रभावी लागत पर हो जायेगी।

आज देश की प्रारंभिक कृषि सहकारी समितियां (पैक्स) कृषि एवं सहकारिता विकास के लिए मुख्य आधार है। इन पैक्सों को गाँवों के स्तर पर सुसंगठित किया जाता है तथा इसके सदस्य हमारे किसान भाई होते हैं। आज गुजरात राज्य में लगभग ८८०० प्राथमिक सहकारी साख समितियां कार्य कर रही है। पैक्सों के माध्यम से समाज के कमजोर वर्गों, अनुसूचित जाति, जनजाति, पिछड़े एवं अति पिछड़े वर्गों एवं महिलाओं की भागीदारी सुनिश्चित करने के उद्देश्य से पैक्सों में आरक्षण की भी व्यवस्था होनी चाहिए। इन पैक्सों को ग्रामीण अर्थव्यवस्था के विकास केन्द्र के रूप में विकसित करने हेतु संस्थागत सूधार भी किए जाने की आवश्यकता है। इन पैक्सों के माध्यम से कृषकों को अल्पकालीन ऋण के साथ-साथ बीज खाद, कृषि यंत्र आदि प्रदान किया जाता है। पैक्सों के माध्यम से धान एवं गेहूँ की अधिप्राप्ति पूरी तरह सुनिश्चित करने की आवश्यकता है जिससे कृषकों को उनके उत्पादक का सरकार द्वारा घोषित उचित समर्थन मूल्य प्राप्त हो।

भंडारण के क्षेत्र में आज गुजरात के पैक्सों की स्थिति अन्य राज्यों के मुकाबले बहुत सुदृढ़ है और मुझे यह भी बताया गया है कि कुछ पैक्स अपने सदस्य कृषकों की भंडारण की व्यवस्था निःशुल्क करती हैं। यह हर्ष का विषय है कि गुजरात राज्य में किसानों को ७ प्रतिशत ब्याज की दर से फसल ऋण प्रदान किया जाता है जिसमें से उन्हें ३ प्रतिशत की सब्सिडी केन्द्र सरकार द्वारा और ३ प्रतिशत की सब्सिडी राज्य सरकार द्वारा मुहैया कराई जाती है जिसके फलस्वरूप इन किसानों को मात्र १ प्रतिशत की दर से भुगतान करना होता है। इसके अतिरिक्त राजकोट और अमरेली में किसानों को शून्य प्रतिशत की दर से यह लाभ दिया जाता है, इसके लिए आप सभी बंधुगण बधाई के पात्र हैं।

मेरा मानना है कि कृषि विकास को परंपरागत कृषि पद्धतियों से बदलना पड़ेगा और इसके लिए वैज्ञानिक तौर तरीकों को अपनाना पड़ेगा। मुझे पूर्ण विश्वास है कि केन्द्र सरकार की कृषि संबंधित विभिन्न योजनाओं का लाभ लेकर गुजरात राज्य आने वाले वर्षों में कृषि क्षेत्र में और अधिक क्रांति लाएगा, विभिन्न सिंचाई की योजनाओं को आधुनिक बनाएगा, किसान एवं फसल को आधुनिक शिक्षा पद्धति से जोड़कर विकास करेगा और अन्य राज्यों की तुलना में कृषि के क्षेत्र में आगे रहेगा।

आज हमारी सरकार ने स्वस्थ धरा, खेत हरा का नारा दिया है और पूरे देश में स्वाईल हेल्थ कार्ड की योजना आरंभ कर दी है। यदि खेत की भूमि स्वस्थ नहीं होगी तो खेत हरे नहीं हो सकते। किसान को पता होना चाहिए कि जिस मिट्टी पर वे मेहनत कर रहा है उसका हेल्थ कार्ड रिपोर्ट क्या कहता है



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

Date of Establishment : 1st November 1966
Number of Affiliated Banks : 19 District Co-op. Agri. & Rural Dev. Banks

Performance and Target

Sr. No.	Sector/Schematic	Projected Target for year 2015-16	Advancement 2015-16	Projected Target for year 2016-17	Advancement 2016-17
1	Minor Irrigation	56.25	67.47	75.00	38.34
2	Farm Mechanisation	15.62	6.68	25.00	3.08
3	Land Development	25.00	23.63	33.00	13.81
4	Dairy Development incl. Cattle Shed	15.62	11.21	25.00	6.42
5	Hort./Farm Forestry	15.63	18.37	23.00	11.44
6	Rural Housing	21.88	8.92	29.00	5.10
7	Non Farm Sector	25.00	22.28	32.00	13.88
8	Purchase of Land	15.63	3.42	23.00	2.37
9	Rural Godowns	3.12	0.06	5.00	0.41
10	Others	56.25	6.38	80.00	3.49
	TOTAL	250.00	168.42	350.00	98.34

Loan Schemes

1. Rural Housing Scheme;
2. Combine Harvester;
3. Strawberry Cultivation;
4. Scheme for setting up of Agri-clinics & Agri-business Centres for Agri. Graduates;
5. Cattle Shed Scheme;
6. Financing of Community Hall;
7. Rural Educational Infrastructure
8. Marriage Palace, all kinds of IT activities and other services;
9. The Bank has opened the window of credit for replacement of defunct tubewells with new Submersible tube wells.
10. Purchase of Agri. Land
11. Straw-Reaper;
12. Commercial Dairy for Self Employment
13. Financing of Medicinal & Aromatic Plants;
14. Financing of 2-Wheelers to Farmers;
15. Rural Godown;
16. Organic Inputs;

Incentive Schemes for Loan Repayment

- 5% interest rebate scheme of Govt. of Haryana for prompt repayment extended upto 31.03.2018.
- Bank extended benefit of Rs.114.33 crs. to loanees under the Recovery linked OTS scheme implemented by the Govt. of Haryana from 10.11.2013 to 31.07.2016.

DHANESH ADALAKHA
Chairman
HSCARDB PANCHKULA

NARESH GOYAL
Managing Director
HSCARDB PANCHKULA



ताकि कृषि संसाधनों की बर्बादी न हो और इसकी उत्पादकता में बढ़ोतरी हो। अतः मेरा आप सभी सहकार बंधुओं से निवेदन है कि प्रारंभिक कृषि सहकारी समितियां अपने-अपने क्षेत्र के सभी किसान सदस्यों को इस योजना के बारे में बताएं और खेती की मिट्टी को बचाएं, रक्षा करें।

हमें कृषि को आगे बढ़ाने के लिए पानी का अभाव और पानी के प्रभाव (अधिकतम) दोनों से बचना होगा तभी अच्छी खेती एवं खुशहाल गांव का निर्माण हो पायेगा। तथा पैक्स अपने सदस्यों को यह बताये कि इसके कुप्रभाव से बचने के लिए हमें ड्रिप इरीगेशन, माइक्रो इरीगेशन पर चलना पड़ेगा तभी खेती की मिट्टी को बर्बाद होने से रोक पाएंगे। इसलिए बूंद-बूंद पानी से ही अच्छी फसल होगी और मैं इस मंच के जरिए आप सभी प्राथमिक सहकारी समितियों के किसान सदस्यों से यह आग्रह करता हूं कि यदि कृषि को राज्य में आगे बढ़ाना है तो हमें पानी बचाना पड़ेगा।

मैं पुनः इस मंच से अपनी बात दोहराता हूं कि देश को अगर आगे बढ़ाना है, तो किसान, कृषि एवं गांवों को आगे बढ़ाना पड़ेगा। किसानों की आय में वृद्धि करनी पड़ेगी और इसके लिये कृषि क्षेत्र में पुनःहरित क्रांति लानी पड़ेगी। सहकारी

समितियां किसान सदस्यों को आर्थिक रूप से सबल करती है और हमारा प्रयास होना चाहिये कि जहां भी सहकारी समितियां जर्जर अवस्था में है उन्हें आर्थिक सहायता एवं तकनीकी रूप से सक्षम करें और सदस्यगण इसके लिये समितियों एवं मण्डलियां के द्वारा हमारे सभी कार्यक्रमों एवं योजना का लाभ लें। साथ ही साथ ग्रामीण क्षेत्रों की कुक्कुट, मछलीपालन, डेयरी आदि की सहकारिताओं का निर्माण करें तभी गांव एवं किसान की अर्थव्यवस्था बदलेगी। चूंकि सहकारिता हमारी प्राथमिकता में है, हमारी सरकार की प्राथमिकता में भी और हमारे प्रधानमंत्री का यह सपना भी है कि देश के लोगों को सहकारी आंदोलन से जोड़ा जाए, तभी सबका साथ सबका विकास हो पाएगा। इसलिये मैं आप सभी से आग्रह करुंगा कि अब समय आ गया है कि हम आधुनिक तरीके से कृषि को आगे बढ़ाने की दिशा में काम करें।

मुझे आशा है कि सहकारितायें आने वाले समय में देश की आर्थिक व्यवस्था को मजबूती प्रदान करेगी और देश की आर्थिक-सामाजिक चुनौतियों का डटकर सामना कर अपनी एक विशिष्ट छवि बनायेंगी।



Rural scheme collects ₹ 41.7 cr. from firms

The village transformation programme, aided by leading industrialists and the Maharashtra State government, has successfully put together nearly 178 Development Plans (DP) and accumulated ₹ 41.7 crore in funds from corporates. The Village Social Transformation Foundation (VSTF) is supported by 10 industrial houses: Mahindra Group, Reliance Foundation, Tata Trusts, JSW Foundation, Swedes Foundation, Hindustan Unilever, Syska LED, HT Parekh and Axis Bank, was launched on October 2 last year. It promises to transform 1,000 villages in the State by enhancing development indicators like drinking water access, infant mortality, education index, agriculture income to match the highest national levels. It seeks to bring about wide scale behavioural change to empower villages through self-sustainable development. Based on the results, a development model scalable across the State will be made

by 2019.

The Chief Minister's Office (CMO) claims 300 grants of ₹ 4 lakh each have been given to villages, and 150 training programmes were organised for the gram parivartaks, a group of engineers and MBA degree holders hired to connect villages to VSTF. Corporates involved have already committed to another ₹ 93.21 crore over the next two years, and the government will match this contribution. The government will spend ₹ 1 crore each on 200 farming groups in 2018. With help from government schemes, VSTF is expected to support 16,884 families and households residing in kutchha homes, pull 15,854 families out of poverty and double farm incomes. When fully implemented, 16,598 households will get access to clean water and 9,268 will get toilets.

States asked to record crop cutting data on smartphones

A few weeks ahead of the commencement of the harvesting of kharif crops, the Centre has asked states to ensure the use of smartphones and agri app to capture crop cutting experiments (CCEs) data on a real-time basis. The move is aimed at expediting the payment of insurance claims to farmers under the Pradhan Mantri Fasal Bima Yojana (PMFBY). CCEs from this season should be captured on smartphones or agri app for the transmission of yield data on a real-time basis to national crop insurance portal. This data must thereafter be validated by the concerned state nodal authority within a week. It stated that for states to be eligible for the Central share of premium subsidy in kharif 2017-18, it is required to be ensured that 100% of CCEs are essentially captured on smartphones.

Under the PMFBY launched by Prime Minister Narendra Modi in January 2016, farmers need to pay a uniform premium of just 2% for the more rain-dependent kharif crops and 1.5% for all rabi crops. The premium for annual commercial and horticultural crops has been capped at 5%. The remaining share of the premium will be borne equally by the Centre and respective state government. The agriculture ministry has also asked states to use technologies such as remote sensing, satellites and drones to deal with frequent

reports of discrepancies; such as the area insured was more than the area sown for a particular crop in many states. According to official data, out of the total claims of ₹15,200 crore (including both kharif and rabi seasons 2016-17) made by the farmers, ₹10,739 crore has been approved and ₹ 8,038 crore has already been paid to around 93 lakh farmers. Around 404 lakh farmers (390 lakh ha. insured) and 157 lakh farmers (175 lakh ha. insured) took up crop insurance under PMFBY and restructured weather based crop insurance scheme, respectively. The PMFBY presently covered 30% of the gross cropped area, while for 2017-18, the target is to cover 40% of the cultivable area.

While the total area under various kharif crops has almost kept pace with last year's, area under oilseeds saw a fall of almost 10% and pulses 4%. Arhar area declined by 18% as central Indian farmers abandoned the crop due to glut-induced price crash since late last year. However, Union agriculture secretary Shobhana K Pattanayak had recently told that the country's foodgrain production is likely to match last year's figure of a record 276 million tonne and the ministry would release the first advance estimate of crop production for the 2017-18 crop year (July-June).

Banks in Gujarat have enrolled 10.67 lakh farmers under PMFBY

Despite certain difficulties faced by bankers in the implementation of Pradhan Mantri Fasal Bima Yojana (PMFBY), banks in the Gujarat have so far enrolled 10.67 lakh farmers under this scheme. "As on August 31, 2017 23 lakh hectares and 10.67 lakh farmers have been covered under the PMFBY," said Vikramaditya Singh Khichi, convenor of SLBC-Gujarat. This is about one-fourth of the total cultivable area of 99 lakh hectares. A premium of ₹ 365 crore have so far

been collected from farmers enrolled under PMFBY and the sum insured is ₹ 11,000 crore.

The notified crops under PMFBY for Kharif season are paddy, cotton, jowar, ragi, tur, moong, math, urad, groundnut, sesame, maize, castor, banana and bajra, while those for Rabi season are wheat, rapeseed, gram, fennel, mustard, isagbol, onion, garlic, potato, groundnut and bajra.



According to the SLBC report, the banks in Gujarat are also facing difficulties in the implementation of PMFBY due to “inordinate delay” in finalisation of implementing agency by

the state government for Kharif season 2017 and undue pressure created on the bankers.

ITC division eyes fruits, vegetables for growth

ITC’s agri business division, is planning to foray into fresh fruits, vegetables and upgraded series of e-choupal which it sees as potential areas for non-linear growth. The division’s growth is partly aligned with the company’s FMCG business. It would also unveil variants of potatoes soon followed by dehydrated onions. The fruits and vegetables are likely to be introduced under a single brand. On the dairy front, while ghee and dairy whitener are already in the market, other value added products are under various stages of development.

On ITC e-choupal, Mr. Sivakumar said, there are now 6,100 e-choupals covering about 40,000 villages benefiting four million farmers. With rapid penetration of smart phones and gradual reduction in bandwidth cost, the e-Choupal model will soon be digital economy-ready. In its fourth generation, called e-Choupal 4.0, the model will focus on creating a market ecosystem to provide agricultural services based on digital platforms and a lot more app-based integration. E-choupal 4.0 series is all set to be rolled out fully by late 2018,

he said. The 4.0 series will be an aggregator of service providers on the digital platform, which will be integrated with initiatives on the ground of ITC’s agri business across 70,000 villages. Two prototypes of e-choupal 4.0 are on the trial. One is about building a community of seed producers and consumers, also bringing together seed processors, certifiers, financiers, etc.

Climate change

To help farmers face the challenges of climate change, ITC is working with the Consultative Group of International Agricultural Research to develop a climate-smart village model, improve the climate literacy of farmers and develop climate-resilient agricultural systems. In the first phase, that started last year and will go on till 2019, about 600 villages in three States will be covered. By the end of 2019, it will be ready for wider roll out. The project has started off at Rajasthan and will commence during the current Rabi season in two places in Madhya Pradesh.

M&M’s driverless tractors to hit market

Mahindra & Mahindra Ltd., (M&M), a part of the \$19-billion Mahindra group, displayed its maiden driverless tractor, which would be commercially rolled out by February 2018. “We will deploy the technology on all three platforms - Novo, Jivo and Vuvo,” said Pawan Goenka, managing director, M&M. “Over a period, the new feature will be offered across M&M’s range of tractors from 20HP to 100 HP.” “This technology is designed to enable tractors to perform a variety of farming applications and operate varied implements. It is set to make farming more productive and profitable, reduce health hazards for farmer and change the future of food production,” he said. The driverless tractor technology would be implemented in phases. In the first phase, the technology would be driver assisted, followed by quasi-driverless and fully-driverless models by 2018-19, he said. Developed at Mahindra Research Valley near Chennai, M&M plans to increase the localisation level to 75% to 80% to

offer products at a competitive price. “Our primary objective is to serve below 150 HP and those having under 50 hectares so that we can roll it out at a price which the farmers can pay,” he said. The driverless tractor can be programmed to carry out specific tasks through a mobile app and can also be programmed remotely to perform in the field, he said.

The tractor comes with unique features such as GPS based technology to travel along a straight line. The vehicle is able to orient itself along adjacent rows for continuous operation without any steering input from the farmer; automatically lifts the work tool from the ground at the end of a row; lowers itself for operations in the next row; and, steers to the next row without any intervention. It has safety features such as a geofence lock, remote engine start-stop and controls via a tablet.

PM Modi sets up advisory council under Debroy to monitor economic growth

To keep a closer eye on economic developments and seek advisory on addressing macroeconomic and other important issues, Prime Minister announced the constitution of a five-member Economic Advisory Council to the Prime Minister (EAC-PM) under the chairmanship of Bibek Debroy, member Niti Aayog. The EAC-PM is an independent body to give advice on economic and related issues to the Government of India, specifically to the prime minister. The terms of reference of EAC includes, “To analyse any issue, economic or otherwise, referred to it by the prime minister

and advising him thereon; to address issues of macroeconomic importance and presenting views thereon to the prime minister. This could be either suo-motu or on reference from the prime minister or anyone else; to attend to any other task as may be desired by the prime minister from time to time;”. The other four members in the committee include part-time members - Surjit Bhalla, Rathin Roy and Ashima Goyal along with Ratan Watal, principal advisor, Niti Aayog as the member secretary.



A rooftop farmer rises with rice

A flourishing paddy crop in 200 grow bags has turned the terrace garden of a government employee in Manguluru into an attraction. Krishnappa Gowda Paddambail, who works at the Government College of Teacher Education here, has been cultivating 30-50 kilos of paddy on the roof of his home in the Maroli area for five years. He does not sell his produce. Childhood memories of paddy cultivation at his family's ancestral farmland near Sullia, and the memory of waiting for hours at a place of worship to procure stalks of paddy for a ritual, made him plant paddy in ten grow bags in 2014. The number of bags increased as his home-made bio-manure gave him bountiful harvests, free from paddy blast fungus and other diseases. Unlike traditional cultivation, Mr. Paddambail uses water minimally, and his bags of soil

mixture, sand and cow dung last four years with careful maintenance. He turns coconut husk into hanging planter after de-husking, he fills soil and ties up the husk to hang it around the house.

Crop rotation

The 120-day paddy cultivation cycle begins in April-May and he grows only one crop, distributing the harvest among friends and relatives. He then uses the same bags to grow radish, a three-month crop. "Last year, I harvested 10 kilos of radish," Mr. Paddambail says. He also grows fruits, vegetables and turmeric on his 1,200 sq. ft. terrace. Last year, he got eight kilos of turmeric.

NCDEX starts warehouse e-repository services

NCDEX Group has entered into a new venture National E-Repository Ltd (NERL) to provide repositories services for electronic negotiable warehouse receipts, which farmers can use to avail bank loan. The electronic Negotiable Warehousing Receipt (eNWR) was launched by union minister of consumer affairs, food & public distribution Ram Vilas Paswan. The first ever eNWR generated under NERL will provide a regulated institutional framework for creation of electronic warehouse receipt lending to meet the financial needs and inventory financing of those involved in the commodities business, such as farmers, traders, processors and aggregators. With the first eNWR, NERL too was launched formally which would work under the aegis of the Warehousing Development and Regulatory Authority (WDRA).

NERL, one of the major participants providing services towards e-repository, has been promoted by leading agri commodity exchange National Commodity and Derivatives Exchange (NCDEX), National Bank for Agriculture and Rural Development (NABARD), ICICI Bank and SBI. Its purpose is to help warehouse receipts become credible and marketable lending instruments for banks and thus improve the flow of capital to the commodity value-chain through electronic

negotiable warehouse receipts. NERL will act as a catalyst to boost warehouse based commodity business transactions. "NERL will be responsible for creation, storage, security, authenticity and transfer of all electronic negotiable warehouse receipts (eNWR), within a regulated framework, between users of the repository such as warehouse service providers, banks, financial institutions, farmers, traders and value-chain participants," said Kedar Deshpande, CEO, NERL. NERL systems will introduce a lot of visibility, traceability and off-market transfers to commodity trading outside the Exchange ecosystem. It will accommodate all types of warehouse service providers, including private and state owned, small and medium. "Banks have started funding against pledge of warehouse receipts in a big way. The current size of the warehouse receipts market is estimated at about ₹40,000 crore and negotiable warehouse receipts at ₹ 5,000 crore. The potential for finance against collateral of major agricultural commodities and fertilisers is ₹1,66,234 crore," he said. Real time traceability and visibility of stocks would enable warehouse service providers with better commodity risk management capabilities and help them increase occupancy and business volume.

WDRA goes digital, paves way for paperless agri marketing

The Union Food and Public Distribution Minister Ram Vilas Paswan paved way for paperless marketing of agricultural commodities by issuing the country's first electronic negotiable warehouse receipt (eNWR) to a farmer from Rajasthan. These e-receipts issued against agricultural produce that farmers have stored in warehouses registered with the Warehousing Development and Regulatory Authority (WDRA) offer multiple benefits to farmers. Apart from making it possible for farmers to sell their produce in

mandis of their choice across the country, they can pledge the eNWRs in part or full to raise loans to meet their requirements. Paswan expressed that only 900 warehouses have been registered with the authority even though there are around 64,000 warehouses of varying capacity exist in the country. The WDRA also issued registration certificates to two entities that have been elected to create repositories for eNWR.

Dairy farmers' income rose 14% in 3 yrs: Minister

Union Minister for agriculture and farmers' welfare Radha Mohan Singh said in past three years, dairy farmers' income

increased by 14% and to meet the target of doubling the farm income, farmers need to look at agriculture allied sectors to



boost the income. The minister was at Anand in Gujarat to attend Dairy Excellence Award by National Dairy Development Board (NDDB). "We have taken several steps for the development of the dairy sector in India and income of dairy farmers has increased by 13.79% in the year 2014-17 compared to the year-ago period. India is number one in milk production and contributes 19% of the world's total milk production," said Singh. Agriculture allied sector can help to increase the income of farmers by 2022. For this, recently, a seven-point strategy has been unveiled. Ministry of agriculture is working in this direction through various schemes in the dairy sector," he added.

Maharashtra sugar mills may have to pay interest on delayed cane payment

Sugar mills in Maharashtra may now have to pay interest on delayed cane payment from the 2017-18 crushing season. The sugar commissioner of Maharashtra has sought details for the calculation and payment of interest to cane growers in case the payments are delayed by miller. As per the Cane Control Order 1966, it is mandatory for sugar millers to pay to farmers within 14 days of cane supply as per the stipulated Fair and Remunerative Price (FRP). The order provides for payment of interest by the millers to farmers at 15% per annum if they do not make cane payment within 15 days of buying the cane. However, this was not implemented by any state.

Fix deadline for PMJDY insurance claims: PM Modi to FM Jaitley

Prime Minister asked the finance ministry to fix a time limit for payment of insurance claims of ₹30,000 to the family of the deceased who opened a bank account under the Pradhan Mantri Jan Dhan Yojana (PMJDY) in 2014-15. Under the PMJDY, any person who opened his first bank account between August 15, 2014, and January 26, 2015, along with a RuPay card, is eligible for a life cover of ₹ 30,000 on death due to any cause. The idea is to provide security to poor families in both urban and rural areas who cannot afford direct insurance and are not covered under any social security scheme. accounts were opened in 2014-15 after the PM launched the scheme. Reviewing the scheme last week, the PM directed that in case of death of a PMJDY holder, the Department of Financial Services should fix a time limit for

Farm loan waivers, stimulus could push up fiscal deficit by 100 bps: RBI

The RBI cautioned that farm loan waivers and fiscal stimulus could push up the the combined (Centre plus States) fiscal deficit to GDP ratio by around 100 basis points in 2017-18. "The general government fiscal deficit (of Centre and States combined) is already in the region of 6 per cent of GDP.

Staggering waivers - According to the RBI, five States - Maharashtra, Uttar Pradesh, Punjab, Karnataka and Rajasthan - have announced farm loan waivers in 2017-18 so far. Two of these States - Uttar Pradesh and Punjab - have

The government has planned to increase milk production to 200 million tonnes by 2019-20 which was 155.49 million tonnes in 2015-16. Currently, NDDB is in the leading role for the implementation of the National Dairy Plan (NDP) and the recently announced Dairy Infrastructure Development Fund (DIDF). The government has established DIDF at the cost of ₹10,881 crore for the period from 2017-18 to 2028-29. The purpose of all these schemes is to help increase the productivity of milch animals and thereby increase the milk production to meet the growing demand of milk and to provide more assistance to rural milk producers for more market access, including organised milk processing sector.

The country's largest sugar producer, Uttar Pradesh, implemented this provision in 2016-17. Till September 27, cooperative sugar mills have paid ₹32.50 crore as interest to farmers, while private sugar mills have paid ₹309.82 crore as interest on cane arrear.

Maharashtra is likely to commence crushing from November 1, 2017. In the 2016-17 season, sugarcane was grown over a substantially low acreage of around 6.3 lakh hectares, around 37% less than Maharashtra's average sugarcane cultivation of 10 lakh hectares.

disposal of the insurance claim.

Although most claims so far have been given out expeditiously, officials said the idea is to fix a time limit so that the poor do not have to wait without any certainty of time for getting the insurance amount after the death of their dear ones. The scheme itself does not prescribe any time limit for disposing of the ₹ 30,000 claim. So far the government has received 4,912 claims for ₹ 30,000 each and of these 4,305 claims have been cleared, while 601 claims were rejected for not fulfilling the eligibility criteria. Only six claims are still being processed, according to the government's figures.

made provisions for the likely increase in expenditure in their budgets for 2017-18.

During 2014-2016, three States - Andhra Pradesh, Telangana, and Tamil Nadu - had announced farm loan waivers aggregating ₹47,000 crore, but staggered over five years. Furthermore, against the backdrop of the growth slowdown, there are reports that the Centre might undertake policy actions to provide a boost to growth.



Soil Health Card Scheme 'progressing well'

Soil Health Card Scheme is progressing well despite challenges such as inadequate staff, lack of power supply and internet connectivity among others, a government-commissioned study has said. Under the scheme launched in February 2015, soil health cards have been distributed to nearly ten crore farmers so far, against the target of 12 crore. The card, which will be issued every three years, provides information to farmers on the nutrient status of soil along with recommendations on appropriate dosage of soil nutrients to be applied for improving soil health and its fertility.

'Positive impact'

"The overall impact of the scheme has been positive, leading to maximisation and sustainable growth at farm level by cost minimisation and through efficient utilisation of resources," said the study done by National Productivity Council (NPC). The study, however, noted gaps in manpower, both technical and non-technical staff, for collecting soil samples and thereafter testing them in labs. The NPC suggested that the field staff be provided the honorarium for collection of soil samples and distribution of cards in time. The honorarium for collection of soil samples may be increased from ₹10 to ₹25 per sample.

Recommendations

For the benefit of farmers, the soil testing for all individual

farm fields should be undertaken in a phased manner and crop specific recommendation about the use of fertiliser and micro nutrients should be provided, it added. At present, samples are collected on a grid of 2.5 hectares in irrigated areas and 10 hectares in unirrigated areas. On availability of testing equipment, the NPC suggested renovation and strengthening of old soil testing labs with appropriate power back-up besides providing the Atomic Absorption Spectrophotometer (AAS) at taluk level labs for testing micro-nutrients.

Revenue records

The revenue records should be updated so that correct information about the names of farmers is available and also the government should provide more funds for printing cards, which at present is ₹ 190 per card and needs to be raised to ₹325 per card. That apart, the NPC suggested convergence of similar state schemes that support strengthening of the soil testing infrastructure for efficient use of resources. The study, conducted in 19 States covering 76 districts and a total of 170 soil testing labs, assessed the status of soil testing infrastructure and identify areas where facilities can be augmented on a regular basis for issuing soil health cards every three year.

Banks to provide funds at 7% to women SHGs under DAY-NRLM

The RBI advised banks to provide funds to women SHGs (Self Help Groups) in rural areas at 7 per cent under the Deendayal Antyodaya Yojana - National Rural Livelihoods Mission (DAY-NRLM) in the current fiscal. The RBI has issued the revised guidelines on interest subvention scheme under DAY-NRLM, as received from the Ministry of Rural Development for implementation by 21 public sector banks and 19 private banks.

"All women SHGs will be eligible for interest subvention on credit upto ₹ 3 lakh at 7% per annum... Banks will lend to all the women SHGs in rural areas at the rate of 7," it said. Banks will be subvented to the extent of difference between

the Weighted Average Interest Charged and 7% subject to the maximum limit of 5.5% for the year 2017-18. "This subvention will be available to banks on the condition that they make SHG credit available at 7% per annum," the notification said. The Ministry of Rural Development in consultation with state governments will harmonise State specific interest subvention schemes, if any, in line with the central scheme. The interest subvention scheme on credit to women SHG during 2017-18 is applicable in 250 districts across the country. Aajeevika - National Rural Livelihoods Mission (NRLM) was launched by the Ministry of Rural Development in June 2011.

CDFI lines up apps for farmers

The Centre for Digital Financial Inclusion (CDFI) has come out with a slew of mobile-based digital applications to help farmers conduct their transactions in a seamless manner and use farm equipment through Farmer Produce Organisations (FPOs)," told Krishnan Dharmarajan, Executive Director, CDFI.

Similarly, an application is also being developed for the purchase of inputs by farmer. "Our aim is to provide end-to-

end digital modules to cover a range of activities/ requirements for farmers, including e-marketing," said Dharmarajan. CDFI, established in 2014 at the Institute for Financial Management and Research (IFMR), Chennai, has already been piloting an integrated cashless digital platform to bring the farming community to the centrestage in Kanchipuram, Tamil Nadu, while supporting a technology solution to fund and track rural projects.



Apiculture: KVIC plans to create 50,000 jobs for farmers, tribals

The Khadi and Village Industries Commission (KVIC) plans to create 50,000 new jobs for farmers, tribals and others and supplement their incomes by promoting honey beekeeping across India in the next one year. After distributing 500 bee-boxes among 100 tribal families in a village in Arawali district of Gujarat, KVIC Chairman Vinai Kumar Saxena said professional beekeeping by trained beneficiaries is expected to supplement their family's annual income by up to ₹50,000. The beneficiaries mainly include low-income groups of farmers and those from the Scheduled Tribes and Scheduled Castes. These boxes were given mostly to the tribal women on completion of their five-day-training in apiculture in the sleepy hamlet of Kumhera, which has an abundant flora and fauna. It would create a "positive" impact through pollination on the yield of crops like cotton and maize – grown by the tribals there. He also distributed protection gear, including caps, hand-gloves and nets. Besides, beekeeping also helps in social forestry goals, environmental protection and local flora and fauna, he told. This year, KVIC plans to distribute 75,000 new bee-boxes to the beneficiaries - 5 to 10 per family, preferably women, across India, mainly in the North-Eastern states where pollen nectar is of superior quality, Uttar Pradesh, Uttarakhand, Jammu and Kashmir, the Narmada Valley in Madhya Pradesh, Bharatpur district in Rajasthan, and the southern states. "Each bee-box generates 30 kg of honey per annum, besides other by-products. KVIC provides the beneficiaries access to infrastructure, training, collection, processing and marketing network through its 12,000 outlets across India."

KVIC realised the potential of honey collection when, in

2016-17, India exported 45,138 tons of honey. India is currently placed at the 15th spot in the world in this sector. "China collects honey from over one crore bee boxes while we have so far only 12 lakh bee boxes. Now, we are targeting distribution of 1.25 lakh boxes next year and aim to reach an overall target of one crore boxes over the next few year. In order to promote bee keeping, the Union Ministry of MSMEs sanctioned a special fund of ₹49 crore this year. In the last one year, KVIC has set up apiaries with around 1,000 bee boxes at different institutions across India, including 155 bee boxes at Rashtrapati Bhavan in New Delhi. The Commission plans to set up over 10,000 bee boxes in the North-Eastern states and another 75,000 across other states.

While raw honey collected in Jammu and Kashmir, due to its saffron flavour, is the most expensive with a price tag of ₹300-350 per kg, other areas' raw honey comes at ₹100-150 per kg. After processing and packaging, their prices generally double or treble. But it is not just honey that bee-boxes generate. Its by-product wax is of high quality, and comes at around ₹500 per kg. Pollen, used in anti-ageing treatment, is sold at ₹1,200 per kg and royal jelly at ₹20,000-25,000 per kg. But it is the bee venom, used in medicines, which is exported at a whopping price of ₹1.25 crore per kg, Saxena said. Beekeeping is virtually a self-expanding activity. The Queen Bee produces 2,000 eggs per day and the beneficiary can quadruple the number of bee-boxes in a year, thus enhancing his/her income correspondingly. KVIC's Central Bee Research Institute, Pune, is the hub of its training, research and related activities, he added.

Sovereign Gold Bond: Finance Ministry fixes rate at ₹2,971 per gram

The government has fixed the purchase price of Sovereign Gold Bond (SGB) at ₹ 2,971 per gram for the next tranche of the third series of the scheme. The subscription period is from October 23-25 and the settlement on October 30. The finance ministry and the RBI had launched the series III of the sovereign gold bond scheme on October 9, coinciding with the festival season. The next tranche beginning October 23 is part of the scheme's calendar announced till December 27, with subscription period from Monday to Wednesday of every succeeding week.

The settlement will be made on the first business day of the next week for the applications received during a given week. A discount of ₹ 50 per gram is being offered if the subscribers make digital payments. For such investors, the issue price of gold bond will be ₹ 2,921 per gram.

Under the scheme, the bonds are denominated in units of one gram of gold and multiples thereof. Minimum investment in the bonds is one gram with a maximum limit of subscription of 500 grams per person per fiscal year (April-

March). In the first tranche of the third series of the scheme, the price of gold had been fixed at ₹ 2,956 a gram. Under the gold bond scheme, individuals have a maximum limit of 4 kg for subscription, while Hindu Undivided Families and trusts have a maximum limit of 20 kg. The annual ceiling will include bonds subscribed under different tranches during initial issuance by the government and those purchase from the secondary market. Investors in these bonds have been provided with the option of holding them in physical or dematerialised form. The Bonds bear interest at the rate of 2.50% (fixed rate) per annum on the amount of initial investment. Interest will be credited semi-annually to the bank account of the investor and the last interest will be payable on maturity along with the principal. Interest on the bonds will be taxable as per the provisions of the Income-tax Act, 1961 (43 of 1961). The capital gains tax arising on redemption of SGB to an individual has been exempted. The indexation benefits will be provided to long terms capital gains arising to any person on transfer of bond.



Maharashtra govt to revive dairy units with PPP model

The state government has decided to revive its dairy units and milk chilling plants through the public private partnership (PPP) model with an aim to promote dairy farming and alternative source of livelihood for farmers across the drought-hit and backward regions of Vidarbha and Marathwada. Accordingly, a decision was taken to promote the Aarey Milk Brand, which is under the state dairy development board, and support it through marketing. The Aarey brand will be provided outlets in malls and other places.

Of the total 13,985 acres of land under dairy units, 3,599 acres have been given to various government offices and

organisations. So, total land available with the dairy development board is 10,386 acres. In all, 12 government-owned dairies and 45 milk chilling plants across Maharashtra have shut down. Whereas, 20 dairy and 28 milk chilling plants across Mumbai, Pune, Nanded and Ahmednagar are also headed towards closure. To revive the units which are defunct and running in losses, the government is banking on the PPP model. The revival of the dairy units will also generate revenue for the government. According to estimates, reviving the units structures will require ₹ 250-300 crore.

Fix deadline for PMJDY insurance claims: PM Modi to FM Jaitley

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disposal of the insurance claim.

Although most claims so far have been given out expeditiously, officials said the idea is to fix a time limit so that the poor do not have to wait without any certainty of time for getting the insurance amount after the death of their dear ones. The scheme itself does not prescribe any time limit for disposing of the ₹ 30,000 claim. So far the government has received 4,912 claims for ₹ 30,000 each and of these 4,305 claims have been cleared, while 601 claims were rejected for not fulfilling the eligibility criteria. Only six claims are still being processed, according to the government's figures.

Centre plans to intensify horti-crop cultivation

The Central government has identified 185 districts across the country for intensification of horticulture cultivation using remote sensing and geo-spatial technologies. The government has identified three fruit crops — banana, mango and citrus — and vegetable and spice crops, such as potato, onion, tomato and chilli, under the programme. The initiative is being undertaken as part of a project launched three years ago, called Chaman or Coordinated Horticulture Assessment and Management using Geoinformatics, Agriculture Minister Radha Mohan Singh said.

As part of the project, experts associated with the Mahalanobis National Crop Forecast Centre under the Ministry will use remote sensing and GIS tools to identify areas suitable for growing the crops, rank them according to suitability, and make yield projections and early disease

assessments. The technologies would also be used to assess the area under cultivation and forecasting yield, Ministry officials told media persons. Horticulture production in the country for the first time touched 300 million tonnes this year and there is potential to increase it further. They are grown in small plots, have multiple cropping seasons and sometimes have multiple pickings in same season.

North-East launch - The project is to be implemented first in the North-East and an interim report of site suitability study for the region is expected to be ready by January next year. The Centre has chosen at least one district in all the North-Eastern States under the project for augmenting horticulture production. The areas will be either in wasteland or those under slash and burn cultivation.

With 20% of agriculture output value, milk overtakes foodgrains

Which is India's No. 1 farm crop by value? Rice (paddy) or wheat? Wrong. The answer is milk. According to the Central Statistics Office's (CSO) detailed crop-wise estimates of the value of output from agriculture and allied sectors, the country's farmers produced milk worth ₹ 4,95,841 crore in 2014-15. For the first time, the value of milk produced exceeded the total value of foodgrains (cereals plus pulses), which stood at ₹4,86,846 crore, and was way above paddy at

₹2,26,481 crore or wheat at ₹1,28,998 crore, according to latest figures released this month.

In 1999-2000, the value of milk production, at ₹88,092 crore, was not even two-thirds of cereals at ₹1,34,096 crore, although it was more than that of paddy at ₹70,416 crore and wheat at ₹46,224 crore. Today, not only does the White Revolution's contribution to farm incomes surpass that of the Green Revolution, but every fifth rupee generated in the



farm sector - which includes the total output value of crops livestock produce and fisheries - comes from milk.

There are three broad reasons why milk's place in Indian agriculture, has gone relatively unrecognised or unnoticed. First is the inability to see milk as a "crop", since it is harvested not from the fields, but from animals. Second, milk - unlike paddy, wheat or sugarcane - is harvested and marketed not in quintals, but litres. Also, farmers sell milk round the year, which isn't the case with normal field crops. Their harvesting and marketing is a conspicuous one-time annual event, even commemorated through festivals such as Makar Sankranti, Thai Pongal and Baisakhi. Third, policymakers have always viewed dairying as an activity "subsidiary" to regular agriculture. This may partly have to do with the animals mostly being fed on the by-products of crop agriculture: wheat and paddy straw, sugarcane tops, and the protein-rich cake left after extraction of oil from mustard, groundnut or cottonseed.

The CSO data reveals the value of fruits and vegetables production, too, crossing that of cereals; this again happened for the first time in 2014-15. Between 1999-2000 and 2014-15, the value of horticultural produce has gone up more than

five times. It has risen even more – by six times and seven times, respectively – for fish (nearly 60% of which is now coming from inland, as opposed to marine waters) and meat (from poultry, goat and sheep, buffalo and cattle, and pig). Fifteen years ago, the individual output values of meat and fish were lower than that of sugarcane and gur. But that has since reversed (see chart).

	2014-15	'99-2000		2014-15	'99-2000
Milk	4,95,840.52	88,092.23	Sugarcane & Gur	96,671.82	24,493.68
Fruits & Vegetables	4,51,902.9	86,334.96	Spices & Condiments	73,256.49	15,446.86
Cereals	4,13,903.11	1,34,096.44	Pulses	72,942.76	18,153.27
Meat	1,54,148.02	21,938.87	Cotton	70,713.63	11,752.06
Fish	1,36,253.29	22,292.85	TOTAL*	24,62,459.31	5,34,689.2
Oilseeds	1,26,752.66	28,625.44	<i>*Includes all crops, livestock produce and fisheries. All figures in Rs crore</i>		

All these trends are ultimately a reflection of dietary diversification. If farmers are producing more of milk, fruits and vegetables, egg, fish and meat, they are only responding to signals from consumers who are increasingly demanding food richer in proteins and nutrients.

Farmers look to harvest the fruits of AI

Come December, tur growers in Karnataka can look forward to the prospect of having a better visibility on the price trend of the red gram at least for the next six months, which could help them take an informed marketing decision. A multi-variant price forecasting model for tur crop, being developed by Microsoft for the Karnataka government using artificial intelligence (AI) and machine learning algorithms, is expected to help grower. Thanks to AI and a host of digital tools such as cognitive computing, image processing and advanced analytics by technology majors IBM and Microsoft, precision agriculture is set to get a major boost as innovative solutions take root in the Indian agrarian landscape. While Microsoft has partnered with Karnataka to develop price-forecasting model, IBM Research Labs is making its tools

available to entrepreneurs/start-ups to develop solutions which focusses on the agri-business vertical in India, is working with a couple of Indian firms and running pilots on precision agriculture using technologies such as geo-spatial analytics, the Internet of Things and forecasting technologies, Raghavan said. Microsoft proposed a multi-variant agricultural commodity price-forecasting model using historical sowing area, production, yield and weather data sets on its Cortana platform. "We plan to develop such a model for 10 crops; for this season, a model is being developed for tur. We expect these solutions will help farmers take informed decisions when they harvest crops this year," said Prakash Kammaradi, Chairman of the Karnataka Agricultural Prices Commission.

Gujarat : A largely small farmer state

8% State agri-GDP growth* 2002-03 to 2013-14	-1% State agri-GDP growth* 2014-15
50 lakh-plus Total number of farmers	66% Small & marginal farmers (holding 2 hectares or less)

8% RBI's target for credit to small & marginal farmers	5.44% Credit extended (as of Sept 2016)
210 Total APMCS in the State	40 Number of APMCS linked via eNAM

Source: CSO, RBI, Agricultural Statistics 2016, Gujarat Agriculture Department, Census 2011, State level Bankers' Committee- Gujarat *in constant prices



Government tweaks RKVY scheme to make farming remunerative

To make farming a remunerative profession, the government approved changes to ongoing central scheme Rashtriya Krishi Vikas Yojana (RKVY) with a focus on value chain, post-harvest infrastructure and agri-entrepreneur development, among others. Now, the scheme has been rebranded as RKVY-Remunerative Approaches for Agriculture and Allied sector Rejuvenation (RAFTAAR) to be implemented for three years till 2019-20 with a budget allocation of ₹ 15,722 crore. The objective of the scheme is to make farming a remunerative economic activity through strengthening the farmer's effort, risk mitigation and promoting agri-business entrepreneurship. The RKVY-RAFTAAR funds would be provided in the ratio of 60:40 to the states except for north east and Himalayan states which will get 90:10 grant. Under

the revamped scheme, the government said about 50% of the annual outlay will be provided for setting up infrastructure and assets, 30% for value-addition linked production projects and 20% of the outlay will be flexi-funds for supporting any project as per the local needs. That apart, about 20% of the annual outlay would be provided for implementing special sub-schemes of national priorities under RKVY-RAFTAAR. Also, 10% of the annual outlay would be provided for innovation and agri-entrepreneur development through creating end-to-end solution, skill development and financial support for setting up the agri-enterprise.

This will further promote agri-entrepreneurship and support business models that maximise returns to farmers.

MoUs worth ₹68,000 crore inked on day one at World Food India

Major deals signed		(in ₹ cr)	
Britannia	India	1,500	Manufacturing of a) Bakery products like biscuits, cakes, rusk, croissants b) Dairy products like Cheese, dairy whitener, ghee etc
Hains Celestial	India	1,440	Manufacturing facility for healthy snacks and sourcing agri commodities from India
CP Wholesale India	India	1,200	Cash & Carry Stores
RP SG Group	India	1,200	Manufacturing of packaged food and snacks
Agrivera	Germany	385	A zero-emission eco and cow-friendly stable for 2,000 cows with attached dairy procession unit and bio gas plant
Hershey's	USA	325	-
Blue star	India	200	Capacity expansion, technology upgradation, R&D, Indigenisation, market development, and after-market support
Kalaxy rice	India	5	Rice powder
Brahmin foods	India	5.5	Breakfast food unit
SMV agro products	India	25	Rice milling

The Ministry of Food Processing said that on the inaugural day of World Food India 2017 witnessed the signing of 13 MoUs worth ₹68,000 crore. FMCG major ITC has signed a MoU with the ministry to invest about ₹10,000 crore in the food-processing sector in India. The company said that a part of these investments will be used to set up 20 state-of-the-art integrated consumer good manufacturing and logistics facilities in 12 States. These investments in total are designed to accelerate our transformation journey towards a healthier portfolio." Other MoUs signed included Amazon in food-retail business, Sharaf Group of UAE for farm produce, collection, processing and export; and YES Bank for financing about 100 food-processing projects in the country with an average ticket size of ₹10-crore each.

India ripe for contract farming: PM tells world

Extolling India's diverse strengths in agriculture - the country has the world's second-largest arable land area and 127 diverse agro climatic zones - Prime Minister Narendra Modi called for greater private investment in contract farming and sourcing of raw materials.

Inaugurating World Food India, a global event organised by the Ministry of Food Processing Industries, in partnership with the Confederation of Indian Industry, the Prime Minister called upon global supermarket chains to take advantage of the "great opportunity" that awaits them "as doing business in India had become easier than ever before". "Private sector participation has been increasing in many segments of the value chain. However, more investment is required in contract farming, raw material sourcing and to create agri linkages. Many international companies in India have taken a lead in contract farming initiatives. This is a clear opportunity for global supermarket chains to consider India as a major outsourcing hub," he said. To cater to Indian taste buds, Modi also suggested that aerated drink majors blend 5% of fruit

juice in their products. "In order to be successful in Indian markets, understanding Indian food habits and tastes is a key requirement," he said, citing milk-based products and fruit juice-based drinks that are an "intrinsic part of Indian food habits". Modi said farmers are "central to our efforts in food processing", adding that to achieve the doubling of farm income within five years, the Pradhan Mantri Kisan Sampada Yojana must "leverage investments of \$5 billion, benefit two million farmers and generate more than half-a-million jobs over the next three years".

Harsimrat Kaur Badal, Minister for Food Processing Industries, said the three-day mega event is likely to see the signing of MoUs worth \$11 billion. World Food India is being attended by around 2,000 people, over 200 companies from 30 countries, 18 ministerial and business delegations, nearly 50 global CEOs of companies such as Nestle, Unilever, Metro Cash & Carry, along with 100 CEOs of domestic food-processing firms and representatives of 28 States.



Sweet, blue revolutions

Pointing out that India exports fish and fisheries products to about 95 countries, he said, "We aim to make a big leap in the ocean economy through the 'blue revolution'. Our focus is on development of untapped areas, such as ornamental fisheries and trout farming. We also wish to explore new areas, like pearl farming." India's commitment to sustainable development is at the heart of the government's thrust to organic farming, he said, adding that the entire north-east offers opportunities to create functional infrastructure for organic produce.

Referring to an increase in lifestyle diseases, he said, "The combination of traditional Indian food, with modern technology, processing and packaging, can help the world rediscover the health benefits, and refreshing taste of Indian

food ingredients such as turmeric, ginger, and tulsi, to name just a few. "The perfect blend of hygienic, nutritious and tasty processed food, with the added benefits of preventive healthcare, can be produced economically, here in India."

On the government's stated target of doubling farm incomes within five years, he said the Pradhan Mantri Kisan Sampada Yojana, which aims to create world-class food processing infrastructure, is expected to leverage investment of \$5 billion, benefit two million farmers and generate more than half a million jobs over the next three years." The creation of Mega Food Parks is a key component of this scheme, he said, adding, "Nine such parks are already operational, and more than thirty others are in the process of coming up across the country."

Post noteban, savings took the equity/MF route: paper by RBI staff

The demonetisation exercise of November 8 last year has induced households to shift toward formal channels of savings. There has also been a noticeable downward shift in the currency demand of public, concluded an article, 'Impact of Demonetisation in the Financial Sector', published in the RBI's latest bulletin. Also, during demonetisation, there was a distinct increase in saving flows into equity/debt oriented mutual funds and life insurance policies. Apart from this, nonbanking financial companies seem to have recorded improvement in collections and disbursements. The article highlights that the demonetisation led increase in CASA (current and savings accounts) deposits also led to significant improvement in transmission to bank lending rates during post demonetisation period. The challenge, going forward, would be to channel these funds into productive segments of the economy and expand the footprints of the digital economy, which has undergone a sharp increase another important consequence of demonetisation. There has also been a sharp increase in the number of accounts under the Pradhan Mantri Jan Dhan Yojana and the deposits in such accounts have also surged, which has given a boost to financial inclusion efforts.

Reduce crop wastage, urges Kovind

President Ram Nath Kovind called for a time-bound plan to reduce, if not eliminate, crop wastage in India. Terming the crop wastage in the country "unacceptably high," the President said, "... some of the numbers [on crop wastage] are truly startling." Speaking at the concluding function of the World Food India (WFI) 2017, Mr. Kovind said, "... close to 16% of India's guava crop is wasted, as are 10% of our mango and apple crops... the deliberations at this conference will take us closer to preventing such regrettable wastage." Mr. Kovind called the event "the Kumbh Mela of Indian food," as it "helped showcase the vast and near limitless opportunities in the food industry and in food processing in India."

India's food industry could be a huge employer, especially to its large youth population and women, the President said,

Financial inclusion

Since demonetisation, 50 million new accounts were opened under Pradhan Mantri Jan Dhan Yojana by October 2017.

Suspicious transactions - The amount of unusual cash deposits in special types of accounts (such as the basic savings bank deposit, PMJDY, Kisan Credit Card, loan accounts and the like) is estimated in the range of ₹1.6-1.7 trillion.

Mutual funds

The Assets under Management by mutual funds increased from about ₹16 trillion to ₹21 trillion between end-October 2016 and end October 2017.

Retail payments

There has been accelerated digitization of retail payments. The latest data reveal that pre-paid payment instrument volumes increased by 54% between November 2016 and August 2017.

adding that "in our rural areas, there is great potential for women to emerge as micro-entrepreneur". He said women could set up small enterprises to make jams and pickles by processing fruits and vegetables gathered from farms in the village.

Congratulating the winners of Start-up Awards and Hackathon Awards at the function, Mr. Kovind said the winners should go on to shape India's food processing sector and improve quality and safety standards. "... one of the startups selected has adapted Raman Spectroscopy, the discovery of India's very own Nobel Prize winning scientist Dr. C.V. Raman, into a low-cost hand-held device that can instantly detect food adulteration. This technology can save billions in food fraud," he noted.



Banganapalle mangoes, six others get GI tag this year

Famous Banganapalle mangoes of Andhra Pradesh and Tulapanji rice of West Bengal are among the seven commodities that have been granted Geographical Indications this fiscal year by the Indian patent office. A Geographical Indication (GI) is primarily an agricultural, natural or a manufactured product (handicrafts and industrial goods) originating from a definite geographical territory. Typically, such a name conveys an assurance of quality and distinctiveness, which is essentially attributable to the place of its origin.

Darjeeling Tea, Tirupathi Laddu, Kangra Paintings, Nagpur Orange and Kashmir Pashmina are among the registered GIs in India.

Other products

The other five products which have received this tag this

Farm experts favour super straw management system

With many parts of the northern States fighting a smog crisis, agriculture experts and officials are optimistic about effectively managing paddy-residue burning in the next season with the help of super straw management system.

At a recent meeting at the Ludhiana based Punjab Agricultural University, agriculture experts, progressive farmers and officials deliberated to devise a strategy to manage stubble burning next year in an environment-friendly manner.

It was pointed out during the meeting, conducted at the instance of Punjab Pollution Control Board (PPCB), that the super straw management system on combine harvesters must be made compulsory so that farmers could easily manage the harvested straw.

Dr. H.S. Sidhu of the Borlaugh Institute for South Asia stressed

Bank branches may not survive e-wave deluge

Indian banks are increasingly pruning their physical branches with a good number of them shifting to digital-only formats. SBI, Kotak Mahindra Bank, Axis Bank, and Bank of Baroda, which are seeing a growing proactivity among their clients to opt for digital banking at their pilot branches, are raising the number of digital-only branches or e-lobbies which meet nearly half the functions of manned branches.

Most banks have plans to automate over 90% of their banking transactions at branches and divert their staff towards a more retail-centric approach which involves more customer engagement.

India's largest lender, the State Bank of India (SBI), had taken the lead among public sector banks to experiment with digital branches through its offering SBI InTouch. The bank now has over 250 such branches which facilitate instant opening of accounts, printing and issue of personalised debit

year include Pochampally Ikat of Telangana; Gobindobhog Rice of West Bengal; Durgi Stone Carvings and Etikoppaka Toys of Andhra Pradesh; and Chakshesang Shawl of Nagaland, according to the Indian patent office website. In 2016-17, as many as 33 items got GI registration. Experts said that award of GI tag gives protection to the producer of those genuine products, which commands premium pricing in the domestic and international markets.

"Once the GI protection is granted, no other producer can misuse the name to market similar products. It also provides comfort to customers about the authenticity of that product," National Intellectual Property Organisation (NIPO) President TC James said.

the need for incorporation of paddy straw in the field rather than its removal by way of bales as the latter may create other ecological issues. "Happy seeder was found to be very effective tool this season for direct sowing of wheat after paddy harvesting by combining harvesters fitted with super straw management system," he said. Besides, it was observed that existing machines such as cutter-cum-spreaders (mulchers), reversible plough and happy seeders effectively managed paddy straw for wheat sowing.

PAU developed super straw management system (Super SMS) in 2016.

Dr. N.S. Bains, Director Research at the PAU, said the adoption of early maturing varieties of rice developed by the university is another option for farmers as it will not only provide more window for effective management of paddy straw but also save water.

cards, and also offers expert advice on investments through videoconference. Another state-run lender, Bank of Baroda, is currently experimenting on a similar format.

Private sector lender Kotak Mahindra Bank has so far opened half a dozen e-lobbies and more than eight digital branches. "The format of these digital branches is and allows customers to access banking services even after branch hours," said Virat Diwanji, head, branch banking and acquisition, Kotak Mahindra Bank.

"Today, every mobile is a digital branch, every kiosk is a digital branch ... as banks, we have to digitise all our processes. So we, as a bank, are focused on that," said Anup Bagchi, head of retail banking at ICICI Bank. "Eventually, we are shifting all customers to mobile (phones) which they carry 24x7. Most of our branches have digital kiosks and customers prefer to carry out transactions on them if they feel comfortable."



Bihar may emerge as harbinger of next green revolution: Kovind

President Ram Nath Kovind lauded the progress made by Bihar in the field of agriculture and said the State could become the harbinger of the next green revolution with better water management and advanced facilities.

The State has won the Krishi Karman Award a number of times because of its fine performance in the field of agriculture, he observed.

"The per-hectare yield of paddy in the State has risen over the past decade by nearly 90 % from 1.3 tonne to 2.5 tonne. This is tremendous, considering the fact that paddy is cultivated on nearly 35 lakh hectares in the State," Mr. Kovind said here while launching the State government's "third agricultural roadmap" for 2017-2022. Better management of

resources and effective implementation of development projects such as the Namami Gange can work wonders for Bihar, he claimed. "I think that with improved water management, Bihar may emerge as the harbinger of the next 'green revolution'.

The President expressed satisfaction that the new road map laid emphasis on food processing, water management, organic farming and a modernised system for land records to ensure farmers get better prices for their produce.

Chief Minister Nitish Kumar said the State would give a boost to organic farming by forming a "corridor" along both sides of the Ganga.

Maharashtra plans to bring 44 lakh farmers under group farming

Laxman Chaundi, a farmer in Akoladev village in Jalna district of Marathwada, had adopted the group farming model to beat the higher investments and low returns. He is a relieved man now, with his chilli cultivation on half acre of land earning him ₹ 2.5 lakh. "Agriculture department officials helped us with shednet. The protected crop cultivation technology was imparted to us by agriculture experts. The production was higher and also the quality of chilli was better."

After watching the positive outcome, the government has decided to extend the model to especially those in drought-prone districts with small and marginal landholding. The state has decided to bring 44 lakh farmers, who are debt ridden, poor with small and marginal landholding, under the group farming model. The move aims to make these farmers financially reliant in next two year. The group farming model was announced during the Budget Session of March 2017. In July, Chief Minister gave the cabinet approval for the project.

The pilot project was launched in two worst drought-hit districts of Osmanabad and Yavatmal. Simultaneously, several villages replicated the model with the help of government officials in their respective districts.

The statistics provided by government officials show the farmers' response to the project was positive, with 1,200 groups set up covering 40,762 farmers. However, the officials reckon that bringing 44 lakh farmers under group farming would require greater efforts both in terms of logistics and financial support. In group farming, the district agriculture officials often play an important role in guiding the farmers on technological know-how and crop patterns.

Group farming has become inevitable in Maharashtra as 78% farmers have small and marginal landholding. There are 1.36 crore farmers in the state. Of them, 44 lakh are debt-ridden and have been out of the institutional credit system for the last five to seven years. The state government's loan waiver scheme will help these 44 lakh farmers.

Pulses, oilseeds MSPs include bonus of ₹ 100-150 per quintal

The support prices of rabi pulses and oilseeds announced by the government recently include a bonus of ₹100-150 per quintal, according to the agriculture ministry. On October 24, Agriculture Minister Radha Mohan Singh announced the government's decision to hike the minimum support price (MSP) of wheat, barley, gram, masoor, rapeseed/mustard seeds and safflower.

According to the ministry, the support price of ₹ 4,400 per quintal for gram include ₹ 150 per quintal of bonus. Similarly,

₹100 per quintal bonus would be provided on masur, rapeseed/mustard seed and safflower this year.

Including the bonus, the MSP of masoor is ₹ 4,250 per quintal, rape-seed/mustard seed ₹ 4,000 per quintal and safflower ₹ 4,100 per quintal for the 2017-18 rabi season. No bonus has been announced for wheat and barley, the MSP of which has been fixed at ₹1,735 per quintal and ₹1,410 per quintal, respectively, for this rabi season.

Cyber Fraud up in 'cashless India'

'Cybercrime has grown to an alarming extent since note ban', said Pawan Duggal, cyber expert and Supreme Court lawyer. More than 27,000 cybercrimes were reported in first half 2017, according to data released by the information and

technology ministry. The figure was 50,362 for the entire 2016. If the 2017 date were extrapolated for a year, it would be an almost 10% increase in cybercrime, highest in recent years. The average jump in the past three years stand below



Urjit Patel appointed on BIS advisory board

RBI Governor Urjit Patel was appointed to the Financial Stability Institute Advisory Board or the Bank of International Settlement (BIS), a global financial organisation owned by major central banks from across the world. The Financial Stability Institute (FSI) of the BIS assists financial sector authorities worldwide in strengthening their financial systems.

Since the beginning of 2017, the FSI has been implementing a new strategy that includes achieving closer interaction with central banks and financial supervisory

agencies, which are its main stakeholder. As part of these efforts, the BIS has decided to reactivate the FSI Advisory Board that was originally created in 1998 and ceased to operate some time later, Switzerland-based BIS said in a statement. The Advisory Board will provide strategic advice to help the FSI continue to meet its mandate in a way that is responsive to the changing needs of its key stakeholders around the world.

No Islamic banking in India, says RBI

In a major move, the RBI has decided not to pursue a proposal for introduction of Islamic banking in the country. Replying to an RTI query, the central bank said the decision was taken after considering "the wider and equal opportunities" available to all citizens to access banking and financial services.

Islamic or Sharia banking is a finance system based on the principles of not charging interest, which is prohibited under

Islam. The issue of introduction of Islamic banking in India was examined by the RBI and the government of India, it said. "Taking into account, the wider and equal opportunities available to all citizens to access banking and financial services, it has been decided not to pursue the proposal further," the central bank said in its reply to the RTI application filed by this PTI correspondent.

Gazette Notifications dated 07.09.2017 on Maharashtra Stamp Act (2nd Amendment) Act, 2017

The captioned notification dated 07.09.2017 published by Law and Judiciary Department, Government of India whereby the Maharashtra Stamp Act is further amended after having received the assent of the Governor in the 'Maharashtra Government Gazette' on the 07.09.2017 and may be called the 'Maharashtra Stamp (Second Amendment) Act, 2017'.

- In Article 25 (Conveyance), sub-clause (II) of clause (b) is amended and stamp duty under conveyance for immovable property in Municipal Corporation, Nagar Parishad or Nagar Panchayat or related institution area

or in Mumbai Metro Development Authority's under rural area has been increased from 4% to 5% whereas sub-clause (III) of clause (b) is amended and Stamp Duty under conveyance for immovable property falls in Gram Panchayat area or any such area has been increased from 3% to 4%;

- In Article 34 (Gift registration), if property donor's husband, wife, brother or sister containing family member or donor's ancestral predecessor or successor donate the property, then 3% of stamp duty will be charged as market value of such property.

Boosting Demand

Maharashtra to begin procurement of Pulses, Soyabean at MSP from October 16. With the prices of soybean and pulses ruling below minimum support prices (MSP), procurement of these commodities at MSP under the Centre's price support scheme (PSS) will begin from October 16 in Maharashtra by NAFED.

Maharashtra's minister of state for agriculture, said that the government has begun registration of farmers for the PSS, which is being done by NAFED from October 3. Around 83 centres have been established across the state and farmers are being issued tokens with likely dates on which they need to bring their produce to the mandis, he said. Khot said that the state government has been given permission for the purchase of 10 lakh quintal of soyabean, 3.70 lakh quintal of urad and 3,47,500 quintal of moong. The MSP of soybean is ₹3,050 per quintal, urad ₹7,400 per quintal and moong ₹5,575 per quintal.

Currently, the crop harvest season has begun in Madhya Pradesh, Maharashtra and Karnataka. Moong is selling at a minimum rate of ₹3,900 per quintal and a maximum of ₹ 5,200 per quintal while urad is selling at a minimum of ₹4,200 per quintal and a maximum of ₹ 4,300 per quintal. The MSP of moong is at ₹ 5,575 per quintal and MSP of urad is at ₹5,450 per quintal. A senior official from the agriculture department in Maharashtra said that the government has set parameters of 12% moisture content for the procurement of these pulses. At present, the produce being brought to the market has moisture content levels of 14-16%, resulting in lower rates.

The pulses output could drop to 87.1 lakh tonne from the record 94.2 lakh tonne, mainly due to lower prices and patchy monsoon rains and good production.



How tissue culture is helping Bengal's banana production?

West Bengal rarely comes to mind when one thinks of bananas. While the state has the right type of soil and weather conditions – it accounts for barely 4% of national output and is not even among the top five banana producers in India.

Tissue culture, a process of crop propagation in a test tube under controlled and hygienic conditions has helped West Bengal make banana cultivation an attractive proposition for farmers. The method improves yield and quality and has revolutionised the horticultural industry. In about five years since it was adopted, tissue cultured banana cultivation in West Bengal has grown significantly and now accounts for a third of the state's annual production of 11.7 lakh tonnes, a level that's expected to rise in the years ahead.

Alongside, the look and the taste of bananas have improved. Banana cultivators are getting a higher price for their crop, too – ₹ 10.50 per kg on average from ₹ 7 per kg in 2011 – without consumers feeling the pinch. Nadia farmer Isad SK and Murshidabad farmer Nurul Islam Mondal confirmed that the G9 variety of bananas, a high-yielding type propagated by tissue culture, resulted in about 40% higher income for them than the traditional variety called Robusta. Buoyed by the success, the West Bengal government has decided to focus on improving the production and quality of mangoes and litchis.

Enhanced tissue cultured banana production in West Bengal can be attributed to the initiative taken by the Kolkata-based Jalans of the Keventer Group. Its fruit-trading division, along with the state government, not only provides subsidised tissue cultured plantlets and other inputs to farmers but also commits to buying their entire produce. The arrangement was good enough to entice traditional jute cultivators seeking better earning opportunities to take up farming of tissue cultured banana. "We sold 9,000 tonnes of bananas in

September 2017 from 3,656 tonnes in FY 2013-14," said Mayank Jalan, Chairman of Keventer Agro Ltd., the largest seller of the fruit in West Bengal.

The transformation is significant because West Bengal, even with its ideal soil and weather conditions, has lagged behind states such as Maharashtra, Andhra Pradesh and Tamil Nadu in terms of output, area under cultivation and yield per hectare primarily due to small land holdings, post-harvest management and poor practices.

Tissue cultured crops are not seasonal and can be produced in the laboratory throughout the year. This has helped improve the payment cycle for farmers. Infrastructure such as ripening chambers and additional distributors have contributed to increasing banana production in the state.

Helping the Keventer Group with the G9 tissue culture plantlets and drip irrigation was Mumbai-based Jain Irrigation.

Keventer has a network of field workers and supervisors who monitor the crop. It uses software-based tools to manage farm-level issues such as pests and disease and track block-level developments. Presently, some 3,500 farmers spread over more than 3,000 acres cultivate the G9 variety of banana in the state. According to data for 2015, the latest available, on the website of the National Horticulture Board, Madhya Pradesh has the highest productivity of 65.23 tonnes per hectare, followed by Gujarat (63.54 tonnes per hectare), Maharashtra (50.14 tonnes per hectare). West Bengal ranks 13th with yield at 24.12 tonnes per hectare. The other major banana-producing states are Uttar Pradesh, Bihar, Andhra Pradesh, Puducherry and Telangana.

Keventer Agro is setting up ripening chambers in Durgapur, Malda and Siliguri.

Govt prepares action plan to increase acreage of oilseeds

With a decision on commercial release of high-yielding variety of genetically modified (GM) mustard taking a back seat, India's target to reach its projected requirement of 45.64 million tonnes of oilseeds by 2022 looks gigantic at the moment.

In the past 50 years, the country has seen increase in oilseed production by almost five times, backed by 1.8 times increase in acreage (sown area under oilseeds) and 2.8 times increase in productivity. Use of hybrid seeds and farm practices during the period had seen productivity increase from 412 kg per hectare in 1966-67 to 1,225 kg per hectare

in 2016-17.

Use of GM mustard, developed by a Delhi University institution, has been pitched as one of the solutions. In the backdrop of these developments, Hyderabad based Indian Institute of Oil seeds Research (IIOR) of the ICAR has devised a comprehensive plan to reduce the country's dependence on imports which cost India ₹ 73,048 crore in 2016-17. "We have prepared an action plan to bring at least another 3.5 million hectares of land under oilseeds crops in the next five years," said A. Vishnuvardhan Reddy, Director of ICAR-IIOR.



Organic agriculture turns bitter fruit for farmers of Sikkim

It is an overcast morning, and Ram Khatiwoda is watering his succulent tomatoes in one of the six greenhouses he owns in the picturesque village of Sakyong, about 8 km from this main town in West Sikkim also known as Gyalshing. The 36-year-old is among the 66,000-odd farmers in the Himalayan north-eastern state to have embraced organic farming, eschewing the use of chemical pesticides and fertiliser.

Launched as an ambitious programme through a resolution passed by the Sikkim Legislative Assembly in 2003, organic farming seems to be floundering on the ground, though, in terms of delivering the expected rewards to farmer. He identifies whiteflies, cutworms and stinkbugs, along with powdery mildew fungal disease, as causing major damage to his tomato crop. Echoing similar concerns is Roshan Chettri, another farmer from the same village who grows tomatoes and cauliflower "The state government is not doing enough to boost marketing of organic produce. Sikkim was formally declared as India's first fully organic state last year, the result of an Action Plan unveiled originally in 2003 by Chief Minister Pawan Chamling. It sought to gradually substitute chemical fertilisers by organic manures and control insect pests and diseases through biological plant protection measures. By 2015, Sikkim had attained organic certification for 74,313 hectares of agricultural land in the state. The move to go back to traditional farming even received praise from the Prime Minister who urged other states to emulate Sikkim's organic

agriculture model. Khatiwoda points out that the same open field plot which gave about 40 quintals of tomato before he switched to organic farming eight years ago, now yields just 18-20 quintals. "Not only are the realisations inadequate, we are also suffering due to the influx of cheaper non-organic vegetable produce from Siliguri (in neighbouring West Bengal). Our organic produce should fetch far higher price, as it is good for health and the environment. Non-organic tomatoes from Siliguri are currently being sold at the market in Gangtok, Sikkim's capital, at ₹45-50 per kg. This is as against ₹60 for local organic produce. The rate that Khatiwoda and Chettri are receiving in Geyzing is even lower at ₹30 per kg. Padma Shankar, chairperson of Sikkim Agriculture and Horticulture Board, is, however, more optimistic. "We had reached nearly 90% organic level much before the Prime Minister officially declared Sikkim as the country's first organic state," she notes. States like Kerala, Mizoram, Rajasthan and Gujarat have already taken a leaf out of Sikkim model of organic farming. The state has, moreover, turned self-sufficient in vegetable production. "Organic farming, no doubt, requires putting in extra work, especially since use of chemicals is prohibited across the state. The state government is seeking to address these problems, by initiating a scheme to provide minimum support prices and also allocating a large portion of its budget towards agriculture and horticulture," she claims.

Government raises wheat MSP by ₹ 110/qtl, pulses by ₹ 400/qtl

The Central government has increased the minimum support price (MSP) for wheat and pulses in order to encourage the production of these crops ahead of the winter season. MSP for wheat was hiked by ₹ 110 a quintal to ₹ 1,735, while that for pulses was raised by up to ₹ 400 a quintal, according to a decision taken by the Cabinet Committee on Economic Affairs (CCEA) on Tuesday. MSP is

the rate at which the government buys grains from farmers.

The CCEA has approved MSPs for all rabi (winter-sown) crops for 2017-18. "MSP of masoor has been increased by ₹ 300 to ₹ 4,250 per quintal, while that of gram by ₹ 400 to ₹ 4,400 per quintal," agriculture minister Radha Mohan Singh tweeted after the Cabinet meeting.

Private sector must invest more in contract farming: PM

Prime Minister Narendra Modi asked the private sector to invest more in contract farming, raw material-sourcing and creating agri-linkages, and said there are huge opportunities for global super-market chains considering India as a major outsourcing hub. Besides, he suggested that aerated drinks manufacturers consider blending 5% fruit juice in their products, and said such a procedure has major potential

since fruit-juice based drinks are an intrinsic part of Indian food habits. In addition, he pitched for a venture based on 'nutrition-rich and climate-smart crops' to boost production and supply of India's coarse grains and millets that 'not only have high nutritional value, but can also withstand adverse agro-climatic conditions'.

Three-day meet

The WFI - a three-day mega-event being attended by about 2,000 participants, more than 200 companies from 30 countries, 18 ministerial and business delegations, close to 50 global CEOs, including those from leading domestic food processing companies, and representatives of 28 States. The Prime Minister said, "private sector participation has been increasing in many segments of the value chain. However, more investment is required in contract farming, raw material sourcing and creating agri-linkages."

He added that there were opportunities in post-harvest management, including in primary processing and storage, preservation infrastructure, cold chain, and refrigerated transportation. The Prime Minister said many States had come up with attractive food processing policies to attract investment and urged each State of India to identify at least one food product for specialisation. Similarly, each district can also select some food items for production, and one item for specialisation.



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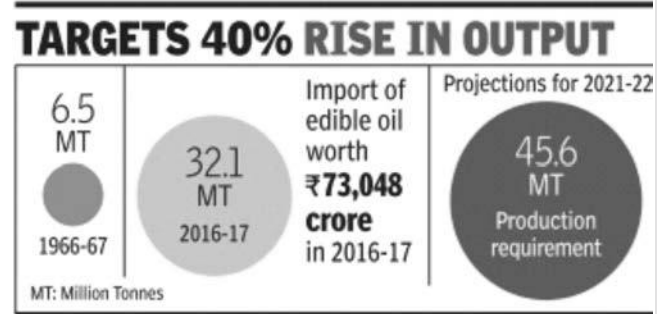


Asked about availability of land, he said the institute has identified 17.5 million hectares of fallow land in various states Reddy said, adding that expansion into non-traditional areas and seasons will help.

Noting that increase in average yield will also help meet the growing demand, he said, "We are targeting to increase average productivity to 1,500 kg per hectare in the next five years from the current 1,225 kg per hectare through use of improved varieties of seeds and better farm practices."

The IIOR has shared its plan with the agriculture ministry which, in turn, asked states during the recent Rabi conference to adhere to it and increase production of

oilseeds, including rapeseed/mustard, linseed, soybean, groundnut and sunflower.



A sketchy roadmap

The NITI Aayog since released the Three Year Action Agenda (TYAA) for the government, a roadmap for reforming the various sectors of the economy. In doing so, we also touch upon the recommendations of some important committees constituted by the current government in the realm of agri-food. These are the High Level Committee (HLC) on Management of Foodgrains and Restructuring FCI (headed by Shanta Kumar, January 2015), the Task Force on Agriculture headed by the Vice-Chairman of the NITI Aayog (May 2016) and the four volumes (out of 14) of the Committee on Doubling of Farmers' Income (August 2017). The government, thus, has ample reference points for reforming the food and agriculture sector.

The TYAA basically talks of action pertaining, first, to increasing productivity of land and water, second to reforming agri markets on the lines of e-NAM, third, reforming tenancy laws, and finally, relief measures during natural disasters. Urgent action is needed on five fronts and list them in order of priority. First, the government needs to improve the profitability of cultivation by "getting markets right", second, it needs to invest in water to fulfil its slogan of "har khet ko pani" and "more crop per drop", it's third priority should be Direct Benefit Transfer (DBT) of food and fertiliser subsidies to the accounts of targeted beneficiaries, which can release resources for investments, fourth it should ensure that the new Pradhan Mantri Fasal Bima Yojana (PMFBY) delivers compensation to farmers in time, and finally, it should free up land lease markets.

In fact, farmers' returns have gone down in the case of most crops. The situation is worse for producers of basic vegetables like potatoes, onions and tomatoes. Prices of these crops during harvest time plunged to about ₹ 2 per kg in the last season while the consumers were still paying ₹ 15 to ₹ 20 per kg. Attempts to reform the Agricultural Produce Marketing Committee (APMC) markets on the lines of the model act of 2003, and now through the Agricultural Produce and Livestock Marketing Act, 2017, have not achieved much success. However, India has shown in the case of milk, through Operation Flood - a la the AMUL model - that farmers can get 70-80 per cent of the price paid by consumers. A

beginning can be made with at least onions, potatoes and tomatoes. That would require buying directly from farmers' groups (FPOs), setting up logistics from grading, storage to movement, and linking them to organised retail (including e-retail), large processors and exporters. But to do all this, the government will have to commit not only enough resources as it did for Operation Flood but also change certain laws, including the Essential Commodities Act (ECA). However, an easier way to improve farmers' profitability is to open up exports of all agri products, without any restrictions, and allowing private trade to build global value chains, keeping the ECA in abeyance. This would require a change from the current pro-consumer approach to one that is focussed on farmers.

Second is the issue of investments, especially in water. The Pradhan Mantri Krishi Sinchayee Yojana is mandated to complete 99 irrigation projects by 2019, which will bring 76 lakh ha additional area under irrigation. NABARD, with ₹ 40,000 crore as Long Term Irrigation Fund, is to help states in completing these projects. It is time to accord higher priority to micro irrigation (drip and sprinklers) to achieve the objective of "more crop per drop". Israel and the US could be good examples to follow:

The third area for action should be DBT of food and fertiliser subsidies. The HLC has already provided a roadmap in this respect. ₹ 30,000 to ₹ 50,000 crores can be saved each year, which can be invested in water resources and upgrading marketing infrastructure.

The fourth area is ensuring that the Pradhan Mantri Fasal Bima Yojana (PMFBY) delivers. Currently, several states don't pay premium in time, don't conduct crop cutting experiments, and as a result, farmers suffer long delays in getting any compensation. These lacunae can be fixed through modern technology and better governance.

The last suggestion would be to free up land lease markets for long periods. China allows land lease for 30 years so that corporate bodies can work with farmers, bringing in their best expertise, inputs and investments.



Wheat acreage likely to be better than last year with better water availability

Wheat planting this year is expected to surpass last year's 31 million hectares on the back of better water availability and soil moisture.

Officials said wheat planting has begun in irrigated parts of Madhya Pradesh and Gujarat and will pick up in other regions, including Punjab and Haryana, in the coming days. "The area will increase over the previous year with ample water in reservoirs and good soil moisture," said Gyanendra Pratap Singh of the Directorate of Wheat Research in Karnal in Haryana.

India, the world's second-largest producer of wheat, recorded a bumper crop of 98.38 million tonnes last year. For 2017-18, the government has set a target of 97.50 million

tonnes.

Last season, wheat planting topped the previous year's 31.55 million hectares by 8%. As per trade figures, the country has already imported 1 million tonnes of the commodity this year.

According to traders, ITC is the largest buyer of wheat after the government, procuring over 2 million tonnes every year. Traders are hopeful that the government will increase the minimum support price of wheat by ₹100 a quintal to ₹1,725. They also want the import duty on wheat to be increased to 25% from 10% at present. As on October 1, the government's wheat stock stood at about 25.3 million tonnes.

Pineapples from Tripura making way to Dubai

In a step towards boosting exports potential of perishable agricultural commodities especially fruits and vegetables from northeastern region (NER), a consignment of pineapple sourced from Tripura has been sent to Dubai. Mainly because of collaboration between the commerce ministry's wing Agricultural and Processed Food Products Export Development Authority (APEDA) and the private air carrier Spicejet, which offered a 'reasonable' freight rate to carry the consignment (1.2 tonne) of fruit from Guwahati to Delhi from where it was transported to Dubai. D K Singh, chairman, APEDA said that initial response from the consumers in Dubai for pineapples from NER has been 'encouraging' and another consignment of Kew variety of pineapple would be sent shortly. "High cost of transportation in north-east is a major constrain for shipment of perishable cargo. Due to which most of the fruits and vegetables grown in this region find it difficult to compete with the produce coming from other parts of the country," Singh told FE.

He said that APEDA has been discussing possibility of increasing exports of agricultural commodities from NER with the private air carrier so that it would boost exports. India exported ₹ 1.08 lakh crore worth of agricultural and

processed foods in FY17. Basmati rice, buffalo meat, fruits and vegetables are the key commodities exported from the country. An APEDA official said that there is a possibility of shipment of Kiwi from Arunachal Pradesh soon.

The region - comprising of Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Tripura and Sikkim - has one of the richest reservoirs of genetic variability and diversity of various kinds of fruits, vegetables, spices, ornamental plants and also medicinal and aromatic plants.

Some of the key fruits and vegetables which have export potential from the region include Nagaland's pineapples, Meghalaya's ginger and turmeric, Manipur black rice and passion fruit, and the badi elaichi from Arunachal and Sikkim.

Meanwhile, APEDA has been working on a plan to promote exports of food products from north-eastern regions especially to Bangladesh and Myanmar. A commerce ministry official said the states have borders with Bhutan, Nepal, China, Bangladesh and Myanmar which provides the region a unique geo-graphical advantage with respect to exports.

Need policy reshuffle to promote climate-smart agriculture: NRAA

The farm policy needs to be reworked with a focus on promoting water-use efficiency and other climate-smart agricultural practices, National Rainfed Area Authority (NRAA) CEO Ashok Dalwai said. "India has never been doing climate-smart agriculture. Farm practices need to be adopted as per the climatic conditions and availability of natural resources, he said, adding that there is a need to change the farm policy keeping in mind the future challenges of climate change. Climate change is a reality. The need of the hour is to adopt science-based agriculture, while suggesting shifting some area to tree-based agriculture from water-guzzling cereals to contain greenhouse gas

emissions, and growing crops with water-use efficiency.

Speaking on the occasion, NABARD chairman Harsh Kumar Bhanwala said the farm policy should be framed to promote water-based productivity of crops instead of land-based. Since 52% of agri-land is rainfed, farmers' distress can be mitigated by promoting water conservation, constructing watersheds, among other climate-smart farming practices. Farmers' distress and suicides are more in areas with no forest cover and watersheds. "In north east which has more forest cover, there have not been incidents of farmers' suicides so far," he observed.



श्री मुकुट बिहारी वर्मा
मा सहकारिता मंत्री



उत्तर प्रदेश सहकारी ग्राम विकास बैंक लि,

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श्री शिवपाल सिंह यादव
सभापति

अपने उत्कृष्ट कार्यों के लिए राष्ट्रीय स्तर पर एन.सी.ए.आर.डी.बी. फेडरेशन मुम्बई तथा भारत सरकार द्वारा 21 बार पुरस्कृत बैंक।

30प्र0 को उत्तम प्रदेश बनाने हेतु पूरे प्रदेश में तहसील एवं कतिपय विकास खण्ड स्तर पर कार्यरत अपनी 323 शाखाओं के माध्यम से समग्र ग्रामीण विकास कार्यों हेतु दीर्घकालीन वित्तीय ऋण सुविधा उपलब्ध कराने वाली शीर्षस्थ सहकारी संस्था।

उद्देश्य-

1. लघु सिंचाई योजना:- ट्यूबवेल, पम्पसेट, ड्रिप, स्पिंकलर आदि।
2. कृषि यंत्रीकरण:- ट्रैक्टर, हार्वैस्टर, श्रेशर, रोटावेटर आदि।
3. विविधीकरण योजनाएँ- डेयरी, पशुपालन, मुर्गा पालन, मत्स्य पालन आदि।
4. औद्योगिक विकास:- आम, अंगूर, आंवला, पान, केला, ग्लेडियोलाई, गुलाब, औषधीय पौधों की खेती एवं वनीकरण।
5. अकृषि क्षेत्र:- ग्रामीण कुटीर एवं लघु उद्योग परम्परागत उद्योग, तेलघानी, धान मिल, कोल्हू, आटा चक्की, स्कूटर, मोटरसाईकिल रिपेयरिंग सेंटर, बैट्री चार्जिंग, टेलीविजन, रेडियो, टेपरिकार्डर एवं मोबाईल रिपेयरिंग, हेयर कटिंग सैलून, कम्प्यूटर टाईपिंग एवं साइबर कैफे, वायरमैन एवं मोटर वाइडिंग, माडर्न लाण्ड्री, जल-पान गृह, बेकरी उद्योग, 22 हार्स पावर की क्षमता के जनरेटर सेट, आफ सेट प्रिन्टिंग प्रेस आदि।
6. भूमि क्रय।
7. लघु सड़क परिवहन।

नवीन संचालित योजनाएँ-

1. ग्रामीण महिलाओं हेतु डेयरी योजना।
2. नेशनल बैंकवर्ड क्लारोज फाइनेंस एण्ड डेवलपमेन्ट कापरिशन के सहयोग से दोहरा गरीबी रेखा के नीचे जीवन-यापन करने वाले पिछड़े वर्ग के सदस्यों को रियायती ब्याज दर पर रोजगार सृजन हेतु ऋण सुविधा उपलब्ध।
3. सौर चलित अल्प सिंचाई की योजनाओं में ऋण उपलब्ध, जिसमें 50% तक का अनुदान नाबाई के सहयोग से वित्त पोषण।
4. सोलर लाईटिंग सिस्टम मे वित्त पोषण।
5. ई-रिक्सा योजना मे वित्त पोषण।

विशेष सुविधाएं-

1. किसानों को दीर्घकालीन कृषि ऋण न्यूनतम ब्याज दर पर उपलब्ध कराना।
2. समय पर ऋण अदायगी करने वाले किसान भाइयों को ब्याज में 1 प्रतिशत की अतिरिक्त छूट।
3. पिछड़े वर्ग की महिलाओं के आर्थिक उत्थान एवं सशक्तीकरण बनाने के उद्देश्य से विभिन्न रोजगार परक योजनाओं में न्यूनतम ब्याज दर पर ऋण उपलब्ध कराना।

आकर्षक मासिक आय जमा, दोहरा लाभ जमा/सावधि जमा योजना-

आकर्षक ब्याज दर पर मासिक आय, दोहरा लाभ व सावधि जमा योजना में 7.00 % तक वार्षिक ब्याज के सापेक्ष सदस्यों से सोत पर आयकर कटौती नहीं, वरिष्ठ नागरिकों को 0.25 % अधिक ब्याज। उक्त योजनान्तर्गत जमाकर्ताओं को मूल जमा धनराशि पर 75% तक (बैंक कर्मचारियों को 90% की सीमा तक) ऋण लेने की सुविधा।



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