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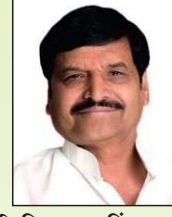
**NATIONAL CO-OPERATIVE AGRICULTURE AND
RURAL DEVELOPMENT BANKS' FEDERATION LTD.**



श्री मुकुट बिहारी वर्मा
मा. सहकारिता मंत्री



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प्रबंध निदेशक

उत्तर प्रदेश सहकारी ग्राम विकास बैंक लि.

(छोटे किसानों का बड़ा बैंक)

प्रधान कार्यालय : १०, माल एवेन्यू, लखनऊ - २२६ ००१

६० वर्ष हमारा प्रयास-सतत विकास

बैंक द्वारा उत्कृष्टतम कार्यों के लिए राष्ट्रीय स्तर पर एन.सी.आर.डी.बी. फेडरेशन मुम्बई तथा भारत सरकार द्वारा २१ बार पुरस्कृत।
उ.प्र. को उत्तम प्रदेश बनाने हेतु पूरे प्रदेश में तहसील एवं कतिपय विकास खण्ड स्तर पर कार्यरत ३२३ शाखाओं के माध्यम से समग्र ग्रामीण विकास कार्यों हेतु दीर्घकालीन ऋण सुविधा उपलब्ध कराने वाली शीर्षस्थ सहकारी संस्था।

उद्देश्य: -

१. लघु सिंचाई योजना:- ट्यूबवेल, पम्पसेट, ड्रिप, स्प्रिंकलर आदि।
२. कृषि यंत्रिकरण:- ट्रैक्टर, हार्वैस्टर, ग्रेसर, रोटोवेटर आदि।
३. विविधीकरण योजनाए:- डेयरी, पशुपालन, मुर्गी पालन, मत्स्य पालन आदि।
४. औद्योगिक विकास:- आम, अंगूर, आंवला, पान, केला, ग्लेडियोलाई, गुलाब, औषधीय पौधों की खेती एवं बनीकरण।
५. अकृषि क्षेत्र:- ग्रामीण कुटीर एवं लघु उद्योग परम्परागत उद्योग, तेलधानी. धान मिल, कोल्हू, आटा चक्की, स्कूटर, मोटर साईकिल रिपेरींग सेंटर, बैट्री चार्जिंग, टेलीविजन, रेडियो, टेपरिकार्डर एवं मोबाईल रिपेयरिंग, हेयर कटिंग सैलून, कम्प्यूटर टाईपिंग एवं साइबर कैफे, वायरमैन एवं मोटर वाइंडिंग, माडर्न लाण्ड्री, जल-पान गृह, बेकरी उद्योग, २२ हार्स पावर की क्षमता के जनरेटर सेट, आफ सेट प्रिन्टिंग प्रेस आदि।
६. भूमि क्रय।
७. लघु सड़क परिवहन।

नवीन संचालित योजनायें:-

१. ग्रामीण महिलाओं हेतु डेअरी योजना।
२. नेशनल बैंकवर्ड क्लासेज फाइनेंस एण्ड डेव्हलपमेन्ट कार्पोरेशन एवं नेशनल शेड्यूल कास्टस् डेवलपमेंट कार्पोरेशन के सहयोग से दोहरी गरीबी रेखा के नीचे जीवन-यापन करने वाले पिछड़े वर्ग एवं अनुसूचित जाति के सदस्यों को रियायती ब्याज दर (४% से ६% ब्याज दर) पर रोजगार सृजन हेतु ऋण सुविधा उपलब्ध।
३. सोलर लाईटिंग सिस्टम में वित्त पोषण।
४. ई-रिक्सा योजना में वित्त पोषण।

विशेष सुविधाएँ:-

१. वर्ष २०१८-१९ में ४१६४४ लघु एवं सीमांत बकायेदार कृषकों को एक मुश्त समाधान योजनान्तर्गत मु.- २९०.३० करोड़ छूट देकर लाभान्वित किया गया।
२. बैंक द्वारा वितरित ऋण से सृजित परिसम्पत्तियों का सामान्य बीमा, जीवन बीमा एवं स्वास्थ्य बीमा क्षेत्र में भी कार्य प्रारम्भ।
३. समय पर ऋण अदायगी करने वाले किसान भाइयों को ब्याज में १ प्रतिशत की अतिरिक्त छूट।
४. पिछड़े वर्ग एवं अनुसूचित जाति की महिलाओं के आर्थिक उत्थान एवं सशक्तीकरण बनाने के उद्देश्य से विभिन्न रोजगार परक योजनाओं में न्यूनतम ब्याज दर (३% से ५% ब्याज दर) पर ऋण उपलब्ध कराना।

सावधि जमा योजना:-

आकर्षक ब्याज दर पर मासिक आय, दोहरा लाभ व सावधि जमा योजना में ७.०० प्रतिशत तक वार्षिक ब्याज के सापेक्ष सदस्यों से स्रोत पर आयकर कटौती नहीं, वरिष्ठ नागरिकों को ०.२५ प्रतिशत अधिक ब्याज। उक्त योजनान्तर्गत जमाकर्ताओं को मूल जमा धनराशि पर ७५ प्रतिशत तक ऋण लेने की सुविधा। परिपक्वता पर तुरन्त भुगतान की सुविधा।



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The Federation organized National Conference of ARDBs 2019 on 21 November 2019 in New Delhi which was attended by more than 400 delegates representing SCARDBs and PCARDBs across the country. The Conference coincided with a critical phase in the long history of LTCCS marked by sliding performance by institutions in most of the States and inaction on the part of the Govt to compensate their losses in directed credit programmes and loan waivers of State and Central Govts as well as steps to carry out functional and structural reforms recommended by various Committees appointed by the Govt. The theme of the Conference “Deepening of Internal Reforms for Enhancing the Role of ARDBs in Agriculture and Rural Credit” was selected on the backdrop of encouraging results of internal reforms initiated by the Federation in 2013. Despite significant improvement in the working and performance of ARDBs in many States during this period the big push needed for taking the structure to a path of sustainable growth is yet to be accomplished. Shri K. Sivadasan Nair, Chairman of the Federation in his address pointed out the need for Govt support to strengthen the structure on the basis of the recommendations of Vaidyanathan Task Force without further delay. Shri Parshottam Rupala, MoS for Agriculture & Farmers Welfare in his inaugural address mentioned about the historical role of ARDBs in rural credit and helping the farmers to develop their farms. Out of 14 crore farming households, only 6.3 crore have access to institutional credit and the remaining depend mainly on internal sources. The Govt in this context is concerned about the declining performance of ARDBs. LTCCS is required to play a bigger role in meeting the credit needs of excluded sections of rural population. The sector has a membership of 1.07 crore farmers throughout the country. The structure has the responsibility to meet their credit needs on the one hand and also to increase their outreach to farmers who are not getting credit from any source, on the other. Cooperative institutions including ARDBs have to depend primarily on savings of members for their

operations. ARDBs have huge potential to become self-reliant in resources if they are able to mobilise at least a small part of the savings of their members as deposits. ARDBs should become an efficient credit delivery mechanism based on the needs of their members. The Minister mentioned that in the context of recent incident of PMC Bank's scam the Govt is seriously considering stricter regime of regulations for cooperative banks and credit institutions in order to protect the interest of public and said that in that context the LTCCS also needs to evolve appropriate systems and procedure to ensure their efficient functioning adhering to regulatory norms. He advised Federation to study various aspects of the functioning of LTCCS and suggest measures for their revival by preparing a road map for follow-up action indicating the areas for different stakeholders and assured that the Govt would favourably consider legitimate demands of the LTCCS based on the above exercise. Dr. Chandra Pal Singh, MP, President, NCUI who presided over the inaugural session traced the history of LTCCS and their contributions to the growth of Indian agriculture over the years. He said that while the losses of other rural financial institutions due to govt policies were compensated by the Govt only LTCCS has been left out. Smt. Sarita Arora, Chief General Manager who represented NABARD mentioned about the importance of professional management, technology, diversifying business to post harvest value chain and group lending to overcome the constraints in business expansion and viable operations of institutions in LTCCS. Shri Balasubramanian Iyer, Regional Director, ICA-AP in his special address in the opening session highlighted the prominent role of cooperatives in Indian economy and how cooperatives can contribute to the goal of making India US\$5 Trillion economy by 2024. The Conference after day long deliberations guided by a panel of resource persons consisting of renowned experts and practitioners in rural credit suggested a revival road map for the sector.

K. K. Ravindran
Managing Editor



Major Game Changer

Dr. K. K. Tripathy *

Cooperative can create an enabling atmosphere in rural areas to spearhead agri-development mission of the government.

The Union Government has asserted its promise of doubling the income of farmers by 2022. It has rightfully understood the ensuing farmers' distress in the country's agricultural sphere and has underscored the importance of reducing cost of production and realization of higher prices for farm produce to achieve the objective.

A number of measures have been suggested and put into action to increase production, productivity, farm profits and income of farmers. Prominent among these have been directed towards (a) increasing Minimum support Price (MSP) of farm products by 1.5 times; (b) connecting more mandis through National Agriculture Market Scheme (e-NAM); (c) developing rural haats into Gramin Agricultural Markets (GrAMs); (d) creation and utilisation of Agri-Market Infrastructure Fund; (e) linking rural markets through Pradhan Mantri Gram Sadak Yojana (PMGSY) roads; (f) developing cluster based agri-products; (g) promoting organic farming; (h) launching an 'operation Green' to promote additional 10,000 Farmer Producer Organisations (FPOs), agri-logistics, processing facilities and professional management; (i) extending Kisan Credit Card facility to fishery and animal husbandry farmers; (j) setting up dedicated funds for fisheries and aquaculture and animal husbandry; and (k) enhancing credit mobilization through Commercial, Private, Foreign and Cooperative Banking channels. While these policy directions are noteworthy, the real challenge is to effectively and efficiently implement related schematic interventions of the government at the grassroots level.

The union government has also attempted to ward off November 2016 demonetisation impacts on input availability, market arrivals, market price fluctuations and demands of farm produce and increase in acreage under agriculture by targeting mitigation of production risk and price risks in agriculture. Keeping in view the uncertainties and risks in agriculture, the government's

policy directions are focusing on ensuring effective government interventions towards reforming risk mitigation instruments like crop and livestock insurance schemes, modernisation and provision of better agro-logistics, marketing avenues with adequate warehousing facilities nearer to the agri-markets. Though MSP at 50% plus cost has the required potential of reducing the risk of farm losses, it may not prove beneficial for the economy at large if the government does not take into account the demand considerations.

In this context, the community collectives like Cooperative Institutions can play a vital role in the socio-economic upliftment of millions of small and marginal farmers and poor members of such collectives. Cooperation assumes the Interaction between the economic and socio-cultural and political power in a specified region. Further, the cooperatives' inherent strength lies in their unique core principles and values. Members of cooperatives have a common socio-economic interest and they use this democratic organization to pool their resources by making self-help effective through mutual aid and by strengthening the bonds of moral solidarity between them.

The cooperative system in India can be classified into two types - credit and non-credit cooperatives. The credit cooperative has a three-tier structure for the distribution of rural credit with Primary Agricultural Credit Cooperatives (PACs) at the village level, District Central Co-operative Banks at the district level and State Co-operative Banks at the State level. The urban areas are served by urban credit cooperatives. The non-credit cooperatives include producers' societies, consumer cooperatives and others like housing, transport, insurance, labour, farming, service, livestock, multi-purpose cooperatives, etc. As per the recent data published by National Cooperative Union of India, as in March 2017 there were 8.54 lakh cooperatives out of which 1.77 lakh were credit cooperatives and 6.76 lakh non-credit cooperatives operating in India (Table 1).

* Source - The Corporator, Nov.2019



SN	Coop. Categrory	No. of Coops	% to Total Coops.
1	2	3	4
Non-Credit Cooperatives			
1	Marketing	7,399	1.09
2	Consumer	26,355	3.90
3	Dairy	1,51,956	22.45
4	Sugar	656	0.90
5	Labour	46,953	6.93
6	Fishery / aquaculture	23,670	3.50
7	Livestock	8,383	1.23
8	Textiles / handlooms	17,507	2.60
9	Agri-processing	29,901	4.41
10	Multi-purpose	14,932	2.20
11	Service Sector	3,779	0.55
12	Tribal/SC-ST	1,707	0.25
13	Others	3,43,552	50.76
Non-Credit Coops.		6,76,750	100.00
Credit Coops.		1,77,605	-----
Total Coops.		8,54,355	
Source : <i>Indian Cooperative Movement : A Statistical Profile, NCUI, 15th Edition 2018</i>			

There are 650 rural districts in India covering 727,911 villages which have 106 million land holdings with the average size of the holding being only 0.88 hectare. As in March 2018, there were 97,961 PACs operating in 6,44, 458 villages. Therefore, there is a dire need to integrate cooperatives with various farming activities viz. crop cultivation, horticulture, dairy, poultry,

fisheries, other allied activities, along with non-farm and wage employment activities. There is also a need for expansion of various Cooperative Institutions in the credit sector, consumer sector, marketing sector, industrial sector, housing sector, storage/ warehousing, value chain and processing sector, etc. for enhancing farmers' income.

SN	Indicator	Per cent Share (%)
1	Rural Network Covered	98.0
2	Villages Covered	90.8
3	Agri-credit Disbursed	13.4
4	Kisan Credit Cards Issued	50.2
5	Fertilizer Distributed	35.0
6	Liquid Milk Marketed	28.8
7	Liquid Milk Marketed	84.1
8	PACs with Storage Facility	55.5
9	Fishermen in Cooperatives	20.0
10	Wheat Procurement	13.3
11	Paddy Procurement	20.4
Source : <i>Indian Cooperative Movement : A Statistical Profile, NCUI, 15th Edition, 2018</i>		



Cooperatives in India have the potential to transform agriculture into a profitable business venture through a well-coordinated collective action plan. Table 2 reveals the share of cooperatives in India in a few select agriculture and allied activities:

The following are the possible interventions proposed for cooperatives to improve farm income and reduce cost of production in the near future so as to reach the goal of doubling the farmers' income by 2022:

- * **Cooperative Value Addition Resource Centres:** Cooperatives should be sensitized and empowered to set up Value Addition Resource Centres (VARC) right at the point of production of the targeted agri-commodities. In addition to input supply, these centres could be responsible for strict monitoring on the processes leading to the quality production. VARC could also be responsible for agri-input management, management of extension services, creation and maintenance of basic agriculture and allied infrastructure in villages and for imparting basic training/orientation to the farmer members about the need and advantages of value addition to their perishable or semi-perishable agri-commodities.
- * **Contract Farming through Co-operatives:** Cooperatives, being the local farmer collectives, have the required strength to ensure collective participation through contract farming and land leasing arrangements which can facilitate accelerated technology transfer, capital inflow and assured markets for agriculture produce. Since agri-markets and largely buyer-driven and vertically integrated, contract farming through community based farmer co-operatives would offer the best possible income stream to the farmers by reducing labour-related transaction costs, costs of other inputs, technology and innovation. In comparison to individual farmer, co-operative producer organizations can reap the benefits of lower input costs, stability and longevity of contract farming arrangements and

can deliver a fair and sustainable distribution of profits amongst the member farmers. Further, cooperative producer organizations have the desired potential for balancing the complicated dynamics between firms and farmers through collective bargaining, creation and maintenance of long-term relationships with input vendors and logistic support providers and through timely mitigating risk and uncertainties faced by the farmers.

- * **Co-operatives and Agri-marketing:** Indian agriculture, even after 72 years of independence, witness high price spread in agri-commodities which adversely, impacts the producer as well as the consumer. This is due to the ever presence of exploitation in agri-markets. The agriculture markets had neither been able to ensure better price discovery for the farm produce nor did they enhance appreciably the bargaining power of the farmers. Malpractices in agri-markets and exploitative attitude of village traders-cum-money lenders and other middlemen like village merchants, arhatias, commission agents, agents of processing enterprises, etc. compel the farmers to resort to distress sales. Thus, the strengthening and revival of existing co-operative marketing system in agriculture would not only eliminate excessive dependence on agents and intermediaries in the organized wholesale markets (APMC Mandis) and unorganized rural periodical markets (Village Agriculture Markets), but also ensure appropriate price discovery by resolving issues of effective information dissemination, use of digitized means of marketing, management of transportation costs by joint transportation of commodities and establishment of network of warehouses for effective and timely storage of perishable and semi-perishable agri-commodities.
- * The need of the hour is to upgrade and strength the co-operative marketing infrastructure to undertake high volume of business on a large-scale during the active business period



considering the seasonality in the agriculture. The co-operative marketing units need to be transformed into multi-purpose societies which should take up activities like establishment of organized facility centres for aggregation and transportation of agri-commodities, assaying, preconditioning, grading, standardizing, packaging and storage of the products. Such co-operative marketing architecture needs to consider establishing functional logistic centres at village, taluka and district levels to facilitate aggregation and onward supply of agri-produce. Such produce can move under the ownerships of the members farmers of the co-operative marketing societies like that of the organized dairy marketing in India.

- * Cooperatives are to be sensitized and trained to skillfully manage marketing of members' agri-produce by reducing cost involved in transferring these from production points to the consumers. Setting up of co-operative sale societies and co-operative ware-housing units may be the best solutions to help the agriculturists realizing rightful profits on their output at the community level.
- * A strong and vibrant co-operative marketing infrastructure has a large potential in making agricultural and rural markets and the related marketing systems efficient by effective and timely dissemination of market intelligence and real demand statistics of the commodities. To achieve a truly unified national agricultural market by 2019-20, co-operative marketing architecture to be reviewed, rehashed, promoted, upgraded and linked to the online platform of National Agriculture Market (e-NAM).
- * Cooperatives can be trained to understand E-NAM which is reeling under various vital issues viz. harmonisation of grades and standards, lack of integrated network between post production value chains with marketing chains - storages, logistics, asymmetry in information on market trends, etc. Cooperatives are in an advantageous

position to ensure a quality marketing ecosystem which includes value chains of produce, market channels, retailer and consumers.

- * **Mentoring by Cooperative Federations:** The cooperatives involved in marketing activities should be mentored continuously by apex marketing federations both at state and national level to reduce risk of price fluctuations. Instead of just being a commission agent in the procurement of food grains/agri products, the cooperatives can make out-right purchases from farmers and facilitate setting up of rural godowns at village level to ward off the problems of storage and the issue of price fluctuations. Post production marketing linkage through marketing cooperatives can ensure promotion of direct access by farmers to all avenues to monetise agri produce. The cooperatives can best organise post-harvest aggregation activities at village/gram panchayat level to build capacity to minimise handling loss and ensure value.
- * **Warehousing through Cooperation:** Cooperative can ensure enhanced and direct access to markets, aggregation of produce in bulk with quality to attract the market, promote an ecosystem to enhance bargaining for better price of products and could improve access to storage facilities Co-operative warehousing and co-operative rural and urban godowns could be promoted and strengthened and linked to marketing activities to maximize benefits of value addition in respect of perishable and semi-perishable commodities.
- * **Value addition through processing:** There is a dire need to ensure integrated development of cooperative credit, marketing, consumer cooperatives with processing. Cooperatives can act as catalysts for investments in agro-processing and other value addition activities. Cooperatives are the best suitable grass root units to ensure easy and hassle-free finance for setting up processing, grading, packaging facilities right at



the village/ block level. This would enable millions of small land holding farmer members to add value to their perishable product, reduce wastages of valued agri-produce and can attract better returns on their produce. The immediate need is, therefore, to take steps to (i) establish community level co-operative processing and value addition hubs at strategic placed in rural and urban growth centres; (ii) ensure finance to such co-operative processing and value addition units through assuring access to banking infrastructure or through adequate and efficient public private partnerhips; (iii) fcilitate co-operative processing startups and encourage venture capitalists and encourage venture capitalists to invest in such innovative agri-processing startups through appropriate policy interventions; (iv) setting up of adequate accredited food quality testing labs at convenient and strategic locations; (v) make available infrastructure for skill development and capacity building of farmer members about processing and preservation of perishable and semi-perishable agri-products; and (vi) impart training and basic orientation tips to members of co-operative marketing societies on grading, assaying, sorting and standardization of agri-commodities.

Indian agriculture is largely plagued with management issues which call for immediate rolling out of an integrated and appropriate policy framework for managing land and water resources, timely and adequate supply of agri-inputs - credit, seed, fertiliser, pesticides, farm equipment, power, etc. and for ensuring end-to-end solutions in agri-marketing to bring out outcome-oriented farm sector reforms.

It is the cooperatives which can create an enabling atmosphere in rural areas to spearhead agri-development mission of the government. Cooperatives have the capability to ensure equitable and concerted efforts towards enhancing the flow of timely, adequate and door-step credit supports in various critical infrastructure such as input services, irrigation, marketing, processing and storage, etc., and also for

allied activities such as poultry, horticulture and dairying.

Further, the cooperative marketing units need to be transformed into multi-purpose societies to take up activities like establishment of organized facility centres for aggregation and transportation of agri-commodities, assaying, pre-conditioning, grading, standardizing, packaging and storage of the agri-products. In addition to this, cooperative warehousing and cooperative rural and urban godowns should be promoted and strengthened and linked to marketing activities so as to ensure rightful benefits of value addition and quality price discovery of agri-products. Cooperatives as collectives need to be oriented and strengthened on governance, organisational skills, team spirit of work, interpersonal communication, work allocation, payment/transaction, market systems, supply chain, etc.

Cooperatives, being the collectives at the grassroots level, have tremendous empowering effect on the farmers. Through its collective efforts, the farmers can reduce the input costs, double the selling volume of farm produce, expand market linkages and actualise opportunities of incremental income. Diversification in agriculture through cooperatives can be a major game changer in actualising the mission of doubling the farmers' income.

Though the Cooperatives are well-equipped to ensure appropriate remunerative prices for diversified agri-products, there is a need to develop a cadre of strong production, marketing and service cooperatives. While cooperative producer organizations can reap benefits of lower inputs costs, ensure stability and longevity of contract farming arrangements and deliver a fair and sustainable distribution of profits amongst the member farmers, cooperative sale socials would encourage intelligent and orderly market of marketable surplus through regulated auction process to ensure right prices for the agri-commodities.



Community Nursery in Tobacco

A co-operative approach under water scares situation

Akshatha M. K.¹, Soumya T. M.² and Mutturaj M.D.³

Tobacco, as often known as Golden Leaf has huge significance in terms of its vast potential to generate income to the farmers and employment to the labourers in rainfed area. Globally, India stands third in production with a total production of 800 million kg. In Karnataka, FCV tobacco is one of the major commercial crops cultivated in Karnataka Light Soils (KLS) region extending from Mysore to Shivamogga covering an area of 83606 ha with the production and productivity of 85.08 million kg and 1018 kg, respectively. FCV tobacco nurseries are raised during pre-monsoon period (March-May) and the seedlings are transplanted during the onset of southwest monsoon (May-June). The shift in onset of monsoon as well as its distribution pattern has threatened cropping system in rainfed areas. The aberrant weather situation is making it difficult to choose the right time to initiate the nursery activity.

Importance of nursery

Tobacco, a non food commercial dry land crop is raised in nurseries due to its small seeds. The emerging seedlings are tiny and delicate and therefore, the seeds are unsuitable for sowing directly in the main field. Nurseries facilitate good germination, crop stand and favourable growth conditions for seedlings. It creates an opportunity for selection of healthy and vigorous/true to type seedlings for transplanting. Seed borne and soil borne diseases are managed effectively at low cost. Management of biotic and abiotic stress in

the early stage of the crop are focused on the specific area rather than entire farm. Seasoning/hardening of seedlings against extremes is only possible in nursery.

Nursery techniques in FCV tobacco

In KLS region nursery activities are initiated during March-April. Generally tobacco nurseries are grown on sandy or sandy loam soil. It is desirable to change the nursery site every year as it would minimise incidence of pests and diseases and also eliminate contamination by other varieties. If it is not possible to change the site, previous year's site could be used after sterilizing by ridding, i.e. by burning any readily available slow-burning waste-materials or soil solarisation.

Raised bed nursery technique is practiced in Shivamogga and Davanagere districts of KLS region. In this method raised bed of 1 m wide, 15 cm height and length of convenient size is prepared. About 4-5 g of seeds are mixed with fine sand and is sown in 15 m² bed. To conserve the moisture as well as to protect the tiny seedlings from sun seed beds are covered with paddy straw. Watering is carried out four times a day for initial 10 days and two times a day for 10-30 days. The paddy straw mulch is maintained up to 25 days and the beds are exposed to sunlight daily in the morning hours to avoid etiolating of seedlings by removing excess moisture. Paddy straw mulch is removed after 25 days and seedlings are reset. Watering at once per day is practiced after 30 DAS. Clipping of leaves is practiced to avoid the excess growth and to harden the seedlings.



Conventional raised bed nursery



Tray nursery

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Preliminary studies conducted at AINP(T), Shivamogga revealed that use of shade net for nursery instead of using paddy straw as mulch during initial 15 days of

sowing are encouraging. Adoption of this technology reduces nursery water requirement.



Nursery beds covered with paddy straw



Nursery beds covered with shade net



In contrast to conventional method of raised bed nursery, tobacco seedlings are raised in protray using coco peat and this method is called as tray method. It is a promising technology in producing disease free and hardened seedlings. Tray nursery involves resetting of 25-30 days old tobacco seedlings grown on seed bed to trays. This method of nursery establishment can be adopted in water scare situation and offers the advantage of minimum weeding as well as ensures 100 per cent establishment in main field which avoids gap filling. Tray nursery method is adopted widely in Mysore, Hassan and Coorg districts presently, a major FCV tobacco growing area in KLS region.

Among all the growing stages, the seedling stage is more sensitive to water stress. The water requirement of nursery varies from crop to crop. Paddy nursery requires about 400 m³ while vegetables nursery requires only 16.5 m³. Sufficient quantity of water of about 27-45 m³ is required to raise the seedlings for one hectare planting. Unlike other crops tobacco seedlings are maintained in nursery for more than 50 days and scarcity of water during nursery period (March to April) may make the farmer to lose the season. If the monsoons are good with normal rains, farmers with limited resources can raise the seedlings independently. Under adverse situation community nursery concept helps to address the situation of water scarcity for small and marginal farmers.

Community nursery

A community nursery is a cooperative venture between community members who all play a part in running it and all benefit from it. As a larger unit than would be feasible at the individual level, the unit has more leverage in accessing inputs. In other words, farmers lacking in facility to establish the nursery can come together and jointly start the nursery activity in a suitable location, could it be on one of the members' land or on the land taken on rental basis. The formation of community nursery shares the responsibility of raising of seedlings among community members. The community nursery site should be located in the nutrient rich/medium soil, near to water source, free from soil pathogens and insects, availability of cheap and skilled labours and a good access to the main road for easy transportation. The site should be on gently sloping area and away from other tall crops. This is important for good drainage as well as to encourage air circulation.

Advantages

- Development of community nursery shares the responsibility among all the members of the group
- Ensures the timely availability of healthy seedlings for transplanting
- Effective management of insect and diseases
- Early spotting of disease or insect incidence as all the members of the group are visiting the nursery
- Management is easy as the site of nursery is easily accessible



- Common facility such as sprinkler system, farm pond, sprayer, shade net, etc., can be created
- Farmers lacking irrigation facility will be benefitted by getting healthy seedlings
- Adoption of improved technology becomes easier
- Reduces the labour requirement
- Facilitates staggered sowing of seeds in nursery and planting seedlings to the main field

Case study

Kattige village of Davanagere district did not receive pre monsoon showers during 2019 and farmers were in dilemma whether to grow tobacco during ensuing Kharif or not. Scarcity of water made the establishment of nursery as a risky venture and the tobacco farmers were in fear of losing the season. Under this situation, like minded ten farmers gathered to establish a nursery at a common place with water source for raising nursery i.e. "Community Nursery". The site which is easily accessible to all members and with sufficient water was chosen for community nursery establishment. Land was taken on rent basis at the rate of Rs. 2300 per 100 m². Each member of the group was allotted the land as per their requirement to plant in an area of one or two hectares. The community members were benefitted with this concept as the responsibility of raising of seedlings was shared. Further, it was easy to spot the disease and insect incidence at the earliest as all the members were visiting nursery often. Kuberappa one of member opined that as the community nursery site was near to village, watering and other nursery activity became easy.



View of community nursery involving 10 members established at Kattige village in Davanagere district of Karnataka

Limitation

- Fast spread of pest and diseases
- Rise of difference of opinion among the members could be expected



नये भारत में सहकारिताओं की भूमिका

श्री. के.जी. श्रीवास्तव

'जियो और जीने दो' की सोच से ओतप्रोत भारतीय जीवन दर्शन, 'वसुधैव कुटुम्बकम्' को स्वीकार करने वाली श्रेष्ठ भारतीय संस्कृति और 'युद्ध नहीं बुद्ध की देन' वाली ऊंची भारतीय परंपरा की बड़ी सीमा तक अभिव्यक्ति प्रधानमंत्री नरेन्द्रजी मोदी के इस नारे में होती है: - "सबका साथ, सबका विकास और सबका विश्वास"। भारतीय जीवन में श्रेष्ठता बनाए रखने पर जोर देने की परंपरा बहुत पहले से है। अथर्ववेद में कहा गया है - "तुम सब लोग सुखी रहो, एक साथ मिलकर रहो, कभी अलग न हो, एक दूसरे को प्रसन्न रख कर एक साथ मिलकर भारी से भारी कार्य भी कर डालो, परस्पर सदा मीठे शब्द बोलो। ये कथन सहकारी आंदोलन के आधार और प्रेरणा स्रोत हैं।

सहकारी आंदोलन आर्थिक हितों की पूर्ति और समृद्धि की ओर ले जाने के लिए संघर्ष रहित और दूसरों के आर्थिक हितों पर आघात नहीं करने वाला रास्ता है। राष्ट्रपिता महात्मा गांधी, गुरुदेव रवीन्द्रनाथ टैगोर, पूर्व प्रधानमंत्री स्वर्गीय पंडित जवाहरलाल नेहरू और अन्य विशिष्ट व्यक्तियों द्वारा सामाजिक व आर्थिक खुशहाली के लिए सहकारिता को एक विशिष्ट विकल्प के रूप में दी गई स्वीकृति सहकारिता से संबद्ध अधिकांश कार्यकर्ताओं को सुविधित होगी।

गांधीजी को सहकारिता की क्षमता पर अटूट विश्वास था। एक बार जब उनको कुछ लोगों की भूख के कारण मृत्यु का समाचार सुनाया गया तो उन्होंने कहा: "लोगों की भोजन के अभाव के कारण नहीं अपितु सहकारिता न होने के कारण मृत्यु हुई"। गांधीजी न केवल खेती को सहकारिता के माध्यम से करने अपितु हथकरघा व अन्य ग्रामीण उद्योगों को सहकारिता के माध्यम से चलाने पर जोर देते रहे। नोबेल पुरस्कार से सम्मानित गुरुदेव रवीन्द्रनाथ ने सहकारिता के अपनाने के अभाव के कारण अनेक विकृतियों का उत्पन्न होना बताया है। उनके विचार पढ़िए - "सहकारिता के सिद्धान्त ने मानव को ज्ञान के क्षेत्र में महान बनाया है। इस सिद्धान्त को अपने नित्य प्रति के जीवन में कार्यान्वित न करना ही दुनिया भर के कष्टों, स्पर्धा, छल, निर्दयता और संघर्ष के कारण है।"

चित्तक और लेखक पूर्व प्रधानमंत्री पंडित जवाहरलाल नेहरू सहकारिता की सोच से ओतप्रोत थे। वह अपने कार्यकाल में देश में सहकारिता के विस्तार और विकास के लिए सतत प्रयास करते रहे। सहकारिता के संबंध में उनके विचार - "यदि हम व्यक्ति की स्वतंत्रता की कद्र करते हैं जैसा कि हममें से बहुत से लोग करते हैं तो आखिर हम व्यक्ति की स्वतंत्रता को बनाए रखने और साथ ही मुनाफे और संपत्ति बढ़ाने की धुन में डूबे हुए समाज से छुटकारा पाने के अपने प्रयासों में किस तरह सफल हो सकते हैं। सहकारिता आंदोलन में ही एक ऐसा तरीका नजर आता है जिससे इस प्रकार के सामाजिक ढांचे का निर्माण हो सकता है।" प्रसिद्ध विचारक एवं कुशल लेखक विद्यासागर शर्मा ने सहकारिता पर लिखी अपनी पुस्तक में लिखा है कि "मानवता का सामाजिक क्षेत्र में कोई व्यक्त स्वरूप है तो वह सहकारिता ही है।" "सहकारिता की श्रेष्ठता को समेटे हुए इन कथनों की कड़ी में डी.जी. कर्वे समिति के कथन को जोड़ना चाहूंगा। भारत सरकार द्वारा सहकारिता के संबंध में अर्थशास्त्री डी.जी. की अध्यक्षता में गठित समिति ने आर्थिक नियोजन में सहकारिता की महत्ता को स्वीकार करते हुए कहा था: "जहाँ कहीं भी संभव हो आर्थिक व्यवस्था का निरंतर विकास विकेंद्रित सहकारिता के आधार पर वांछनीय है।"

भारत सरकार के सूचना और प्रसारण मंत्रालय द्वारा दिसंबर 1977 में "भारत में

सहकारिता नामक प्रकाशित लघु पुस्तिका की कुछ पंक्तियां प्रस्तुत हैं - "आज भारतीय अर्थव्यवस्था में सहकारिता का स्थान महत्त्वपूर्ण है। संभवतः भारत विश्व का एक मात्र देश है जहाँ सहकारिता आंदोलन इतने बड़े पैमाने पर फैला है और उसमें इतनी बड़ी संख्या में लोग शामिल हैं।" पुस्तिका की अंतिम पंक्तियां हैं - "सहकारी आंदोलन की सफलता रचनात्मक नेतृत्व, कुशल प्रबंध तथा सबसे उपर जागरूक सदस्यों पर निर्भर करती है। सहकारी आंदोलन न केवल आर्थिक बल्कि शैक्षिक आंदोलन भी है। इसका उद्देश्य केवल भौतिक प्रगति ही नहीं अपितु जनता को जगाना है। अंतिम विश्लेषण में सहकारिता, आंदोलन की सफलता का मूल्यांकन इस आधार पर होगा कि समाज में कहाँ तक सहकारिता के सिद्ध मतों को स्वीकार किया गया है। केवल तभी सहकारिता राष्ट्रमंडल की स्थापना की जा सकेगी जो सहकारिता आंदोलन का वास्तविक और अंतिम उद्देश्य है।"

उल्लेखित पुस्तिका में वर्ष 1977, में देश में सहकारी आंदोलन की उपलब्धियों को देखकर चर्चा की गई थी। 42 वर्षों में सहकारिता का सफर और शानदार रहा, यह कहना अनुचित नहीं होगा। आज सहकारिता कृषि, खाद, उन्नत उपकरण और बीज वितरण, सिंचाई, प्रक्रिया विपणन, भंडारण, डेरी, मुर्गी पालन, मछली पालन, हाथकरघा व अन्य ग्रामीण उद्योग, बड़े उद्योग, मध्यम उद्योग, उपभोक्ता वस्तुओं का वितरण, गृह निर्माण, यातायात, मुद्रण, ग्रामीण विद्युतीकरण, आदि क्षेत्रों में प्रवेश कर चुकी है।

देश में सात लाख से अधिक सहकारी समितियां हैं। इन समितियों की कुल सदस्य संख्या 40 करोड़ है इसमें लगभग 97% गांव तथा लगभग 71% ग्रामीण परिवार सम्मिलित हैं। आज भारतीय अर्थव्यवस्था में कृषि सहकारी साख द्वारा 16.9% उर्वरक उत्पादन का 29% चीनी उत्पादन का 40% और बुनकर सहकारिताओं का 54% योगदान दिया जा रहा है। सहकारी क्षेत्र 17.80 मिलियन लोगों को स्व-रोजगार प्रदान करता है।

आज डेयरी सहकारिताओं ने देश-विदेश में अपनी अलग पहचान बनाई है। गुजरात व महाराष्ट्र में डेयरी के साथ चीनी मिल एवं ऋण समितियों का विकास हुआ है, तो दक्षिण भारतीय राज्यों में मछली और वन आधारित समितियां का। डाकोर के निकट धुनदी गांव में ऐसी एक सहकारी समिति है जिसका अध्ययन करने देश-विदेश से शिक्षार्थी आते रहते हैं। वलसाड के पास अमलसद गांव की सहकारी समिति चीकू का रस निकालकर उसे पैक कर विदेश भेजने का कार्य कर रही है। सबसे अलग तरह की सहकारी समितियों में सौराष्ट्र के तेल उत्पादक सहकारिताओं की भूमिका प्रशंसनीय है।

"सहकारिता का डंका भारत में ही नहीं बज रहा है, बल्कि नीदरलैंड, फिनलैंड और नार्वे जैसे विकसित देशों के अर्थ तंत्र की मजबूती में सहकारिता का योगदान बढ़ा है। यूरोपीय देशों के अलावा चीन, जापान और वियतनाम की तरफ़ी में भी सहकारी संस्थाएं खास योगदान दे रही हैं।" ये पंक्तियां तीन दशकों से पत्रकारिता में सक्रिय रहने के साथ-साथ रेडियो, टीवी एवं प्रमुख समाचार पत्र-पत्रिकाओं से संबद्ध रहे श्री आलोक कुमार के एक दैनिक समाचार पत्र के 15 मई 2017 के अंक में प्रकाशित लेख शीर्षक "गांधी और सहकारिता की है। लेखक आगे लिखते हैं: "बीते माह वियतनाम की राजधानी होनोय में आयोजित एशिया प्रशांत

स्वतंत्र लेखक, शाहपुरा, भोपाल



महासागरीय क्षेत्र, के देशों में सहकारिता मंत्रियों के सम्मेलन में "सहकारिता की सफलता और भविष्य का खाका पेश किया गया है। उसके मुताबिक दुनियाभर में सहकारी संस्थाओं के जरिए रोजगार पाने वालों की संख्या बहुराष्ट्रीय कंपनी की उद्यमिता से रोजगार पाने वालों की तुलना में कहीं अधिक है। सम्मेलन में प्रस्तुत अंतरराष्ट्रीय सहकारी एलायन्स के आंकड़े बताते हैं कि दुनिया में सहकारी उद्योग संगठनों की कुल संख्या पच्चीस लाख है जिसके डेढ़ करोड़ से ज्यादा लाभान्ध धारक हैं और जिसमें 250 करोड़ से ज्यादा लोगों की आजीविका चल रही है।

हमारे देश और दूसरे अनेक देशों में सहकारिताओं द्वारा आर्थिक क्षेत्र में प्राप्त की गई उपलब्धियां उनके (सहकारिताओं) द्वारा बेहतर से बेहतर करने की क्षमता व्यक्त करती है। देश में सहकारी क्षेत्र सार्वजनिक क्षेत्र और निजी क्षेत्र की तुलना में अधिक अच्छी भूमिका अदा कर सकता है। आवश्यकता इस बात की है कि सत्तासीन लोग और शासन तंत्र सहकारी क्षेत्र / सहकारिताओं के प्रति सकारात्मक सोच का सृजन करें। केंद्र सरकार सहकारी बैंकों पर आयकर का नियम लागू कर सहकारी क्षेत्र की प्रगति में अवरोध पैदा करने जैसा कार्य नहीं करें। केंद्र सरकार की आयकर लगाने के कार्य को अनुचित कार्य मानकर सहकारी बैंकों को यथाशीघ्र आयकर से मुक्त करना चाहिए।

आज सरकारों विशेषकर केंद्र सरकार के सामने उपस्थित चुनौतियां में वो प्रमुख चुनौतियां हैं। पहला जी.डी.पी. में प्रतिवर्ष अपेक्षित वृद्धि करना और दुसरा बढ़ती बेरोजगारी पर अंकुश लगाना और रोजगार के अवसरों में उत्तरोत्तर वृद्धि। निःसंदेह चुनौतियां बड़ी हैं लेकिन इनका सामना करना असंभव नहीं है। केंद्र सरकार को चुनौतियों के समाधान के लिए सिर्फ सार्वजनिक क्षेत्र और निजी क्षेत्र पर निर्भर रहने की स्थिति समाप्त करनी होगी। सरकारी क्षेत्र की अभी तक की उपलब्धियों को देखते हुए दोनों चुनौतियों का सामना करने में सहकारी क्षेत्र की क्षमता पर विश्वास कर इसकी भूमिका में अवरोधों को दूर कर इसे (भूमिका को) उत्तरोत्तर बढ़ाना होगा।

डेयरी, मछली पालन, मुर्गी पालन, हाथकरघा व अन्य ग्रामीण उद्योगों में से जो सहकारिता के माध्यम से चल रहे हैं उन पर विशेष ध्यान देना होगा। इस सहकारिता की समस्याओं का यथाशीघ्र समाधान करना होगा। कृषि साख समितियों के कार्यों में तत्परता लाना होगा। ये संस्थाएं कृषि उत्पादन वृद्धि में भी अच्छा योगदान दे सकें ऐसे कदम उठाने होंगे। सभी छोटे-छोटे किसानों को सहकारिता के माध्यम से खेती करने के लिए सतत प्रेरित करना होगा। इसी प्रकार उपरोक्त उद्योगों में से जो सहकारिता के माध्यम से नहीं चल रहे हैं इनको सहकारी क्षेत्र में लाने के साथ इनके सुचारु संचालन के लिए वित्तीय व अन्य सहायता देना होगा। ग्रामों में रोजगार प्रदान करने की दृष्टि से चलाई जा रही मनरेगा योजना के अंतर्गत अपेक्षित सफलता न मिलने के कारण ग्रामीण उद्योगों को सहकारिता के माध्यम से चलाने की आवश्यकता और बढ़ जाती है। शहरों में विभिन्न उद्योग सहकारिताओं के माध्यम से चलाये जा सकते हैं। लेकिन ऐसी इलेक्ट्रॉनिक वस्तुएं जो बाहर से मंगाई जाती हैं उनके उत्पादन के लिए औद्योगिक उत्पादन सहकारी संस्थानों को उत्पादन करते समय प्रधानमंत्री जी के "जीरो इफेक्ट और जीरो डिफेक्ट" के कथन को बराबर ध्यान में रखना आवश्यक होगा। प्रधानमंत्री नरेंद्र मोदी जी ने कुछ समय पहले 'मेक इन इंडिया' के लिए आवाहन किया था। दूसरे देशों के पूंजीपतियों और उद्योगपतियों द्वारा भारत में उद्योग लगाने से यहां के बेरोजगार लोगों को रोजगार तो मिलेगा, लेकिन नये (रोजगार प्राप्त लोग) शोषण से बचेंगे और न अपनी आर्थिक स्थिति सुधार सकेंगे लेकिन औद्योगिक सहकारिताओं द्वारा संचालित उद्योगों में लगे सदस्यों का शोषण नहीं होगा। यही नहीं उनकी आर्थिक स्थिति में उत्तरोत्तर सुधार संभव हो सकेगा।

प्रत्येक राज्य में सहकारी संस्थाएं डिजिटल सिस्टम अपनाएं यह आज की

आवश्यकता है। यह सिस्टम अपनाना इनके लिए लाभप्रद होगा। इस सिस्टम के अपनाने से सहकारी संस्थाओं में भी कैश बुक, खाते आदि रखने और इनको हाथ से लिखने के कार्य से छुटकारा मिलेगा।

सहकारिताओं से बेहतर जीवन की आशा की जाती है। सहकारिताओं की अवर्णनीय क्षमता को देखते हुए यह आशा की भी जानी चाहिए। सहकारिताएं अपने उपलब्धियों से आश्चर्यचकित कर रही हैं। इनको (सहकारिताओं को) अब सामाजिक क्षेत्र में भी अपनी प्रभावी भूमिका अदा करनी चाहिए। स्वच्छता अभियान चलाने पर्यावरण ठीक रखने, वृक्ष लगाने, वृक्ष कटाई रोकने, प्लास्टिक खैलों के उपयोग पर अंकुश लगाने, खुले में शौच मुक्त भारत बनाने, जल संरक्षण करने बेटी बचाओ और बेटी पढ़ाओ, परिवार नियोजन आदि कार्यों में सहकारिताओं को अपना सतत योगदान देना होगा। यहां सभी मुद्दों पर विस्तार से चर्चा करना तो संभव नहीं है, पर परिवार नियोजन की महत्ता पर कुछ कहना अत्यावश्यक है। देश में बढ़ती आबादी हमारे अपेक्षित आर्थिक विकास में अवरोधक है। बढ़ती आबादी अनेक समस्याओं की सृजनकर्ता है। अब सहकारी क्षेत्र को भी इसे एक बड़ी चुनौती के रूप में स्वीकार करना चाहिए और बढ़ती आबादी पर अंकुश लगाने संबंधी चलाए जा रहे कार्यक्रम में सतत योगदान देना चाहिए। सहकारी समितियों के संचालक मंडल के सदस्य 'हम दो हमारे दो' के सिद्धांत को दृढ़ता से अपनाएं और समितियों के सदस्यों को ऐसा करने के लिए कहें। दो संतान होने के बाद नसंबंदी कराने वाले सदस्यों को समिति द्वारा सम्मानित किया जा सकता है। इससे दूसरे सदस्यों को प्रेरणा मिलेगी।

नव भारत में सहकारिताओं की प्रभावी भूमिका के लिए ये बातें भी परमावश्यक हैं - सहकारी नेतृत्व में कुशलता, सभी सहकारी समितियों के सदस्यों, प्रबंधकारिणी / संचालक मंडल के सदस्यों और समितियों में कार्यरत वैतनिक सेवकों में सजगता, सतर्कता, ईमानदारी और निष्ठा, राष्ट्रीय सहकारी संघ द्वारा सहकारी आंदोलन में लगने वाले शासकीय एवं संस्थागत कर्मचारियों के लिए सहकारी प्रशिक्षण कार्यक्रम और राज्य सहकारी संघों द्वारा सहकारी समितियों के सदस्यों, पदाधिकारियों एवं संभाव्य सदस्यों के लिए सहकारी शिक्षा कार्यक्रम में उत्तरोत्तर सफलता, सहकारिताओं से अधिक से अधिक महिलाओं व युवकों को जोड़ने का लक्ष्य निर्धारित कर इसे पूरा करना। प्रत्येक राज्य में सहकारिता मंत्री द्वारा राज्य सहकारी संघ के अध्यक्ष सहकारिता विभाग और उद्योग के शीर्ष अधिकारियों से चर्चा कर लक्ष्य निर्धारण का कार्य किया जा सकता है और दोनों विभागों को लक्ष्य पूरा करने के लिए निर्देशित किया जा सकता है।

उपरोक्त बातों के अलावा ये बातें भी आवश्यक हैं - सभी प्रकार की सहकारी समितियों का संबंधित सरकारी विभाग द्वारा समय-समय पर निरीक्षण, मार्गदर्शन और यथा समय ऑडिट। निरीक्षण और ऑडिट रिपोर्टों का पालन और पालन प्रतिवेदन यथा समय संबन्धित विभाग को प्रेषण, समितियों में अनियमितताएं और भ्रष्टाचार पाए जाने पर यथाशीघ्र कानूनी कार्यवाई और दोषियों को सजा, सहकारी समितियों की प्रबंध कारिणी या इनके संचालक मंडल की बराबर बैठकें, समय पर आम सभा का आयोजन और निष्पक्ष चुनाव, केंद्र सरकार द्वारा राष्ट्रीय सहकारी संघ को और राज्य सरकारों द्वारा राज्य सहकारी संघों को आवश्यकतानुसार वित्तीय सहायता देने में उदारता, सहकारी संघों द्वारा सहकारिताओं की उपलब्धियां और आदर्श सहकारी समितियों के संबंध में पेम्फलेट्स प्रकाशित कर लोगों में वितरित करना और रेडियो व दूरदर्शन के माध्यम से भी अधिक से अधिक प्रचार करना, सहकारिताओं की महत्ता से पुरुषों और महिलाओं, विशेषकर युवाओं को अवगत कराकर उनको इनसे (सहकारिताओं से) जोड़ने की दिशा में, सतत प्रभावी प्रयास करना, आदर्श सहकारी समितियों और सहकारी क्षेत्र में विशेष कार्य करने वालों को सम्मानित करना।



Shadow Banking In India

Dr. N. Ganesan *

INTRODUCTION

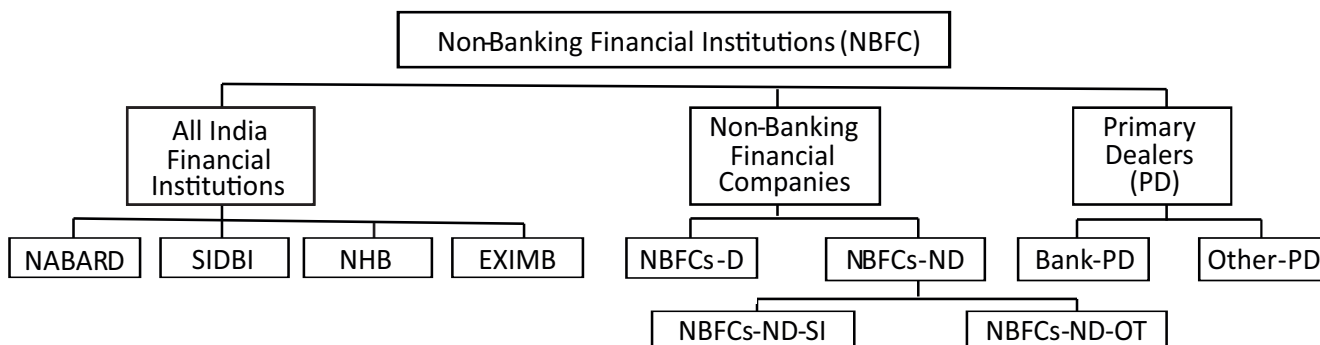
Shadow banking is a term describing all financial institutions which perform bank-like transactions, but are not regulated by one. These institutions have a considerable amount of flexibility when it comes to how they do business. The shadow banks include mobile payment systems, pawnshops, hedge funds, peer-to-peer lending sites etc. They do not accept your traditional bank deposits and are not required to follow certain liquidity laws and can make riskier decisions with their assets. Shadow Banking provides a valuable alternative to bank funding and helps support real economic activity. A shadow bank is not a regulated bank, but such an unregulated financial intermediary as hedge funds, money market mutual funds, and investment banks. They do not collect deposits but still provide loans.

STRUCTURE OF SHADOW BANKING IN INDIA

The credit systems of India consists 5 formal banks, namely, Public Commercial Banks, Private Commercial Banks, Regional Rural Banks, Cooperative Banks, Public Financial Institutions (National Bank for

Agricultural and Rural Development (NABARD), National Housing Bank (NHB) and Small Industries Development Bank of India (SIDBI), and Non Banking Financial Companies (NBFCs). In India, the shadow banking sector is composed of NBFCs and collective investment vehicles which includes money market funds, fixed income funds, mixed funds, real estate funds, and securitisation. It is also composed of formal/informal financial institutions such as Nidhis, Chit Funds, Badla Financiers, Commodity Trade Financiers, Gold Saving Companies, Gold Loan Companies, Pawnbrokers, Plantation Companies, Money Lenders and many others. Covering all sections of shadow banking systems is beyond the scope of this study and hence it is restricted to non-deposit taking NBFCs which are regarded by the Reserve Bank of India (RBI.). In India, Shadow-banking primarily consist NBFCs. NBFCs are defined as companies engaged in the business of making loans/advances, acquisition of shares/securities, hire purchase finance, insurance business, and chit fund activities which is a type of rotating savings and credit association (Rashmi U. Arora (2018)).

Figure 1: Structure of Non-Banking Financial Institutions in India



The structure of NBFC is depicted in Figure 1. There are three types of NBFIs, namely All-India financial institutions (AIFIs), primary dealers (PDs) and NBFCs. Primary Dealers are registered with RBI and have the license to purchase and sell Government Securities. The

NBFIs are regulated by The Reserve Bank of India. Based on deposit mobilisation, NBFCs are further categorized in to two, namely, NBFCs-D (deposit taking) and NBFCs-ND (non-deposit taking) on the basis of deposit mobilization. Based on asset size, the NBFCs-ND are sub-divided into

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two categories, viz., Systemically Important Non-Deposit taking NBFCs (NBFCs-ND-SI) and other Non-Deposit taking NBFCs (NBFCs-ND). NBFCs with an asset size more than five billion were considered as NBFC-ND-SI. This classification was made in order to ensure greater regulatory control over NBFCs-ND-SI is expected to pose greater systemic risks on account of their larger size.

VULNERABILITY OF SHADOW BANKING

Shadow Banking is not subject to the international Basel III requirements on capital buffer, and monitoring by government authorities. Shadow banks have a very high level of leverage, which is a very high ratio of debts to liquid assets, through off-balance sheet financing. Consequently, they have merely a very poor capital buffer. The vulnerability of the shadow banking system was one of primary factors to cause the global financial crisis in 2008 that ensued from the collapse of the US subprime mortgage markets. The spreading debt woes have resulted that the shadow banking crisis is entering a dangerous phase posing broader risks to the Indian financial system. The problem of shadow banking has become more significant in emerging markets rather than in advanced economies, and that the dramatic increase in such loans in these economies is what will be associated with the next big systemic risk to Indian finance. Chandrasekhar and Jayati Ghosh (2018) has pointed out that even with relatively low credit disbursement, so much of the lending has turned non-performing, and the extent of actual or possible default has been enough to suppress both bank and non-bank lending in the recent past.

SHADOW BANKING IN INDIAN ECONOMY

In advanced countries, the shadow banking trend was very strong while they are not much pronounced in developing countries like India. In India, the NBFCs are sometimes categorized as the shadow banking sector, though they are well regulated now. The shadow bank plays an important role in India's financial system. The significance as a source of credit will remain high in case of shadow banking as compared to the traditional banking. Its operations will help towards ensuring enough credit flows to boost consumption in India's

slowing economy. The shadow banking extends credit through financial instruments, including the types of long-term financing deals that infrastructure firms find attractive. The shadow banking has shown a significant growth many bond funds, hedge funds, money markets and mixed funds. In India, the NBFC sector performs an exceptional role in providing credit in the rural areas and thus they fill the gap for many rural Indians, who lack access to any kind of formal banking. With the lending ability of traditional banks still restricted, companies have turned to shadow banks to help fill the void and thus keeping shadow banks afloat is crucial to ensuring that credit keeps flowing in India. It plays an important role in non-bank mortgage lending, student lending, leveraged lending and some other consumer lending. The Infrastructure Leasing and Financial Services have motivated investors that supply capital to shadow banks. Mutual funds, in particular, have cut back their holdings of short-term debt issued by shadow banks. In Indian economy, where the financial markets are still at a nascent stage, the shadow banking plays a supplementary role to traditional banking. In India, the shadow banking plays an important role in promoting financial inclusion. They are very customer friendly, market oriented, innovative and flexible. The main features of shadow banking in India includes reduce transaction costs, their fast decision making ability, and customer satisfaction through prompt delivery of services. This rapid growth of India's NBFC industry and its attendant vulnerabilities was highlighted by the high profile collapse of the Infrastructure Leasing & Financial Services Limited (IL&FS) in 2016-17.

GROWTH OF SHADOW BANKING IN INDIA

NBFCs in India have been existed even prior to the country's independence, in terms of unregistered and unstructured financial system which includes banias (local shopkeeper or money lender), chettys, sahumars, podars, shroffs, pakka moneylenders, kaccha moneylenders, pawnbrokers and goldsmiths, qistias, military moneylenders, and amateur moneylenders (Tandon (1990)). There has been a steady expansion in the size of the global shadow banking sector in recent



years. In the years since the crisis, global shadow banks have seen their assets grow to \$52 trillion, a 75% jump from the level in 2010, the year after the crisis ended. The asset level is through 2017, according to bond ratings agency DBRS, citing data from the Financial Stability Board. Since 2011, aggregated narrow measures across the world increased at an average yearly growth rate of 8.3%. Almost the same growth has been observed in the Cayman Islands, China, and Luxembourg. Table 1 and Figure 1 give a brief view on the number of NBFCs in India. It can be seen a diminishing growth in number of NBFC-D and NBFC-ND since 2012. There is a decline of 68% in the number of NBFC-D, of 30% in respect of NBFC-ND and of 22% in

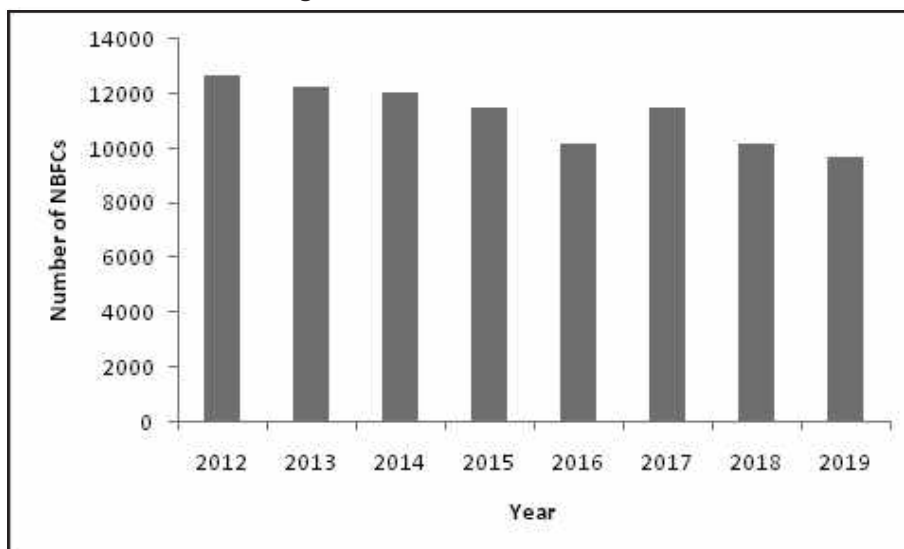
respect of others in 2019 as compared to 2012. The reasons behind this decline is due to not be able to comply with the minimum regulatory capital requirements, not be able to comply with the minimum regulatory capital adequacy norms under the third scenario and liquidity crunch due to asset quality.

Despite the Financial sector reforms, which are still ongoing since 1991, state ownership of banks still exists and 72.7% of the totals banking assets are held by public banks (Arora and Wondemu (2018)). India stands at number five among the top five emerging economies experiencing high growth rates in shadow banking since 2015.

Table 1: Number of Non-Banking Financial Institutions in India

Year	Non-Banking Financial Companies		
	NBFC-D	NBFC-ND	
		NBFC-ND	Others
2012	273	375	12010
2013	254	418	11553
2014	241	465	11323
2015	178	220	11124
2016	108	276	9806
2017	178	220	11124
2018	108	276	9806
2019	88	263	9308

Figure 2: Growth of NBFCs in India





As per Financial Stability Board, the narrow shadow banking is a system of credit intermediation that involves entities and activities outside the regular banking system, and raises systemic risk concerns, in

particular by maturity/liquidity transformation, leverage and imperfect credit risk, and/ or ii) regulatory arbitrage concerns” (FSB, 2011). Table 2 depicts a Narrow measure of Shadow Banking.

Table 2: Narrow Measure of Shadow Banking

Figure in USD Billion							
Year	2010	2011	2012	2013	2014	2015	2016
Shadow Banking	292.0	288.3	330.3	357.8	402.9	421.6	428.9

Sources: National sector balance sheet and other data; FSB calculations.

The important financial indicators of NBFC are presented in Figure 3.

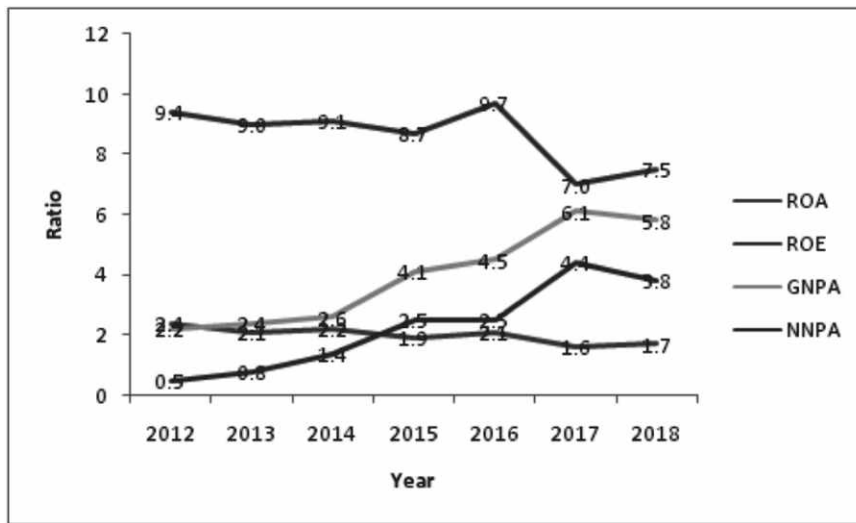


Figure 3: Important Financial Indicators of NBFC in India

A decline trend can be observed in profitability ratios (Return on Asset (ROA) and Return on Equity (ROE) in 2018 as compared to 2012, but were higher during 18 than 2017. Due to improvement in asset quality of NBFC in 2018, the gross non-performing assets (GNPAs) ratio and the net non-performing assets (NNPAs) ratio declined during 2017-18

COOPERATIVE BANKS AND NBFCs

There is an advent of multiple banking formats, like NBFCs (Regulated/Non-Regulated), Payment Banks and SFBs. Many co-operative banks fear they would fade into oblivion as they are increasingly facing competition from new these players, especially NBFCs. As they scramble for a new identity, many are rolling themselves into both a small bank and a universal bank to retain their rich customers in villages and at the same time lend to a vegetable vendor. Even though the rate of interest is higher in NBFCs in some cases, the

NBFCs attract more people, especially in rural areas. This makes cooperative banks to offer facilities like e-lobbies, faster credit disbursal and internet banking. NBFCs are having good access to technology and are successfully exploited MasterCard and Visa technologies successfully where as Cooperative are not in a position to change for the above.

With PSU Banks and Cooperative Banks reeling under crisis, the NBFCs had field day in the last 3-4 years. It has been an attractive sector helping a number of existing as well as new players gain prominence. With increasing competition, they had to “innovate” to remain relevant for investors. Loans extended to agricultural and allied activities, by NBFCs had a major share in the gross loan portfolio at 53%, followed by trade and services, manufacturing and production pooling in 42%. An Increasing number of microfinance institutions (MFIs) are seeking non-banking finance



company (NBFC) status from RBI to get wide access to funding, including bank finance. NBFC-MFI loans do not require collateral. There is a trend of Cashless disbursement of loans. Of the 44 NBFC-MFI, 29 reported more than 90% cashless disbursements, while 24 of them had 100% cashless disbursements. Data released by Microfinance Institutions Network, a national body for non-banking finance company-micro finance institutions (NBFC-MFIs), shows that NBFC-MFIs, which focus on lending in rural India, account for the largest chunk of the loan portfolio of the microfinance industry.

In order to boost credit to the needy segment of borrowers, the RBI allowed on-lending by registered NBFCs towards **agriculture** up to prescribed limits will be treated as priority sector loans. There is an encouragement from both customers and Government for the emergence of new type of NBFC for agriculture, called Agricultural NBFCs. As agricultural marketing and warehousing companies look to expand their businesses, a number of them are seeking to provide financial services to farmers and farm-related businesses, many of whom would be existing clients.

From the above, it can be observed that cooperative banks which are traditional and dominance in rural finance are going to face strict competition as the services of NBFCs are customer and technology driven.

CONCLUSION

Shadow banking has the potential to increase efficiency of the global financial system. As it has formed outside the regulated banking sector and, as such, consequently amplified the effects of the recent financial crisis, effort has to be made to account for the negative externality of shadow banking while preserving its benefits. There are significant benefits that shadow banking offers to the financial system including reduced cost of credit and increased liquidity of the system. Even a relatively short-term shock may then result in a rapid decrease in liquidity and, consequently, in a collapse of the system with long-term consequences. The Government must increase

regulatory oversight and keep the law/rules updated to dealing with the changing economic environment in order to cover 41% of the Indian population who do not have bank accounts due to non-interest of entering into less profitable areas. On the other side, the shadow bank fills the gap in credit structure, especially in developing countries, like India. The easy adaptation of modern management and technology by Shadow Banking may result a decline in the growth of Cooperative Banks and other small Banks. It is important for cooperative banking to understand the links since these are likely to develop significantly with the introduction of future regulation.

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Sirsi farm cooperative to launch digital wallet for members

The 96-year-old TSS (Totagars' Cooperative Sale Society) Ltd in Sirsi launched the digital wallet for its members on September 11. The cooperative primarily deals in procurement and marketing of arecanut and pepper in the district.

TSS Wallet

Ravish Hegde, General Manager of TSS Ltd, told that the cooperative has taken various transaction-related activities of its members into consideration while planning its 'TSS Wallet'. The mobile wallet will enable TSS members to pay digitally for purchases at the TSS supermarket in the town, and to pay to their workforce in the farm. Apart from viewing their account details maintained with TSS Ltd, members will get the daily market report of the agriculture produces sold through TSS Ltd. There will be options to transfer money to other bank accounts, and book tickets,

recharge mobile phones and DTH, among others.

The wallet also helps members to store important documents such as Aadhaar, voter ID, driving licence, land records, etc., digitally. The cooperative is planning to encourage QR code-based payments among the traders and service providers in the town. TSS Ltd is partnering with the mobile wallet service provider 'TA Wallet' for launching the wallet.

Face recognition

TSS Ltd, which has around 30,000 members, also introduced 'face-recognition' system for its members for payments at its supermarket in Sirsi a few months ago. The 'face-recognition' system enables members and persons authorised by them to buy the product they want at the supermarket, and pay digitally. The 'face-recognition' system helps deduct money from the account of the member concerned at TSS Ltd.

NDDDB set to launch second phase of National Dairy Plan

As the phase-1 of the ambitious National Dairy Plan (NDP-1) came to an end this November, the National Dairy Development Board (NDDDB) has initiated talks with the World Bank and the government departments concerned to go ahead with the second phase of the Plan. While the first phase was launched in 2012 with an outlay of ₹2,242 crore, the second phase will have a projected financial outlay of about ₹8,000 crore. The aim of the NDP-1 was to improve breed with production of high-genetic bulls and enhance the reach of co-operative structure. Additional 55,000 villages were covered for milk collection.

'Targets achieved'

Dilip Rath, Chairman, NDDDB, told that the NDP-1 has mostly achieved its aims as it comes to a close. The second phase of the NDP will primarily focus on developing milk processing infrastructure and

establishment of milk quality testing equipment at critical points of procurement areas.

Coverage expansion

"We are also looking at expanding our coverage into uncovered areas. Today, there are about 3.20 lakh potential villages. Out of them, we have reached to about 2 lakh villages. About 1.25 lakh villages are still uncovered. So, we have to reach out to the farmers in those areas," Rath said. The NDP-2 will also look at promoting bio gas for households in villages.

Milk production

"The production of milk has grown at 6 per cent-plus rate in the last five years and it would continue to grow at the same rate. Now we are carrying forward some of the activities to Rashtriya Gokul Mission," he said, adding that going forward India could even have an exportable surplus production of milk.

India's fish production pegged at 12.6 million tonnes in '17-18

Total fish production in India was 12.59 million tonnes (mt) and it exported 1.38 mt fish and fish products with a value of over ₹45,000 crore in 2017-18, as per data

released by the government. According to the Handbook on Fisheries Statistics – 2018, unveiled by Minister of Animal Husbandry, Dairying and Fisheries



Giriraj Singh, while inland capture fisheries accounted for 8.9 mt, the share of marine fisheries was 3.69 mt. India is currently the second largest producer of fisheries after China.

Growth in production

The total fish production in 2017-18 was 10.14% more than 11.43 mt produced in 2016-17. Inland fisheries, which grew at 14.05% accounted for much of the growth. Marine fisheries production, on the other hand, went up from by only 1.73% in 2017-18. During 2017-18, the volume of fish and fish products exported was 1.38 mt and ₹45,107 crore in value. The export of marine fish products registered an annual growth of 21.35% in volume and 19.11 per cent growth in value. Andhra Pradesh (34.5 lakh tonnes (LT)), West Bengal (17.45 LT),

Govt exempts cash payments above ₹ 1 crore via APMC from 2% TDS

In a relief to the farm sector, the government has decided not to levy 2% tax deduction at source (TDS) on cash payments of over ₹1 crore made through Agriculture Produce Market Committees (APMCs). The government had made the provision of levying 2% TDS

Andhra Pradesh rolled out direct benefit transfer for farmers on October 15

The Andhra Pradesh government implemented the farm investment support scheme for farmers, YSR Rythu Bharosa, on October 15, 2019, for the rabi season, across the state. As the new scheme will run along with the Centre's PM-Kisan scheme, the direct benefit transfer (DBT) to beneficiaries, including tenant farmers, will be ₹ 12,500 per family per annum. The idea is to support the cultivators for sourcing quality inputs and services for higher crop productivity. The benefit will

Weather-based crop cover getting popular in Kerala

The Weather-based Crop Insurance Scheme (WBCIS), which was launched in Kerala for the paddy crop in Palakkad in the 2008-09 rabi season, is gaining acceptance among farmers, as is evident from the addition of more crops and areas. BG Shyam Kumar, Regional Manager of Agriculture Insurance Company of India (AIC) told that banana, pepper, ginger, turmeric, nutmeg, sugarcane, mango and cashew are

Gujarat (8.35 LT), Kerala (6.85 LT) and Tamil Nadu (6.82 LT) are top five fisheries State in India. India's export of marine products increased from ₹ 16597.23 crore during 2011-12 to ₹ 45106.89 crore during 2017-18.

Boosting exports

The Minister said the government had drawn up plans to increase marine exports to ₹1 lakh crore over the next five years. Towards this, the Centre will invest ₹ 25,000 crore in the fisheries sector, he said. The funds will be used mainly for improving fishing infrastructure and strengthening processing and post-harvest management. The Centre has already extended financial support to the States to develop fishing harbours in seven major ports and commissioned 181 fish landing centres.

on cash withdrawals exceeding ₹1 crore in the Union Budget with an aim to discourage cash transactions and move towards a less-cash economy. The provision came into force from October 1.

include ₹6,500 under YSR Rythu Bharosa and ₹ 6,000 under PM-Kisan per family,". Also, SC, ST, BC and minority landless tenant farmer families will get assistance.

The farm investment support component of the YSR Rythu Bharosa scheme will benefit 64.06 lakh farmers, which includes 15.36 lakh tenant farmers with a proposed outlay of ₹ 8,750 crore.

now notified under the WBCIS, which envisages payment of claims on the basis of adverse weather incidences as captured by the weather data by the Notified Reference Weather Stations (RWS) installed across the State. However, he admitted that the coverage under the scheme is still around 25,000 per season, which is abysmal vis-à-vis its potential.

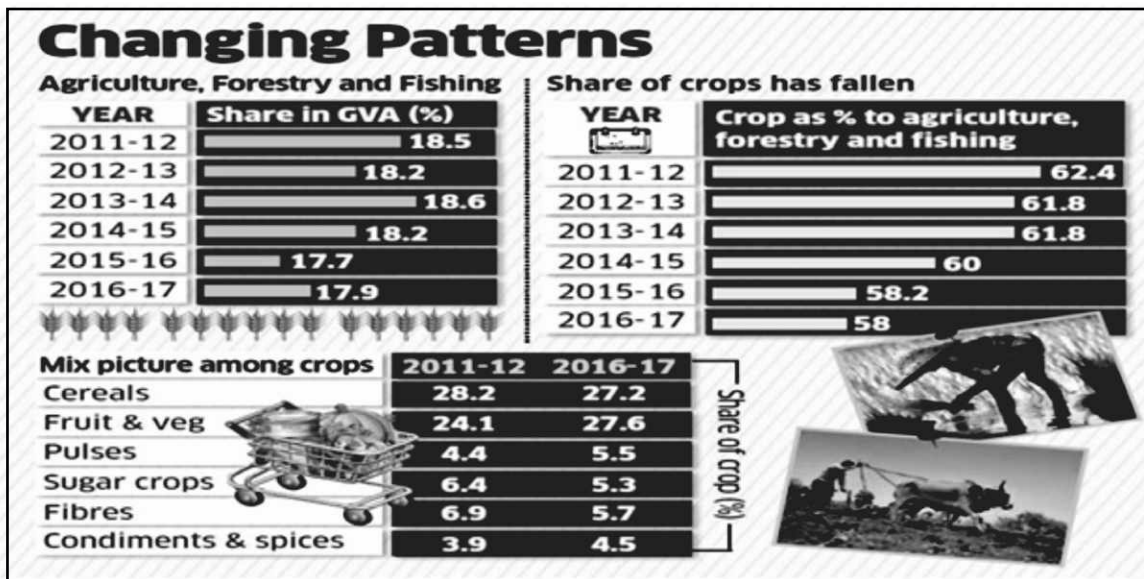
There are also reports that the Commerce Ministry is



planning to implement a crop insurance scheme on plantation crops such as coffee, cardamom on weather-based lines soon for which the modalities are being worked out. AIC, during the recent floods,

approved ₹4 crore for around 5,000 farmers as first instalment claims based on the weather data for excess rainfall cover till August.

Agriculture share in India's 'Gross Value Added' fell to 17.9% in FY17 from 18.6% in FY14



Worldwide as of 2016, the country had the largest herds of buffalo and ranked second in cattle; third in sheep; second in goat and sixth in chicken population.

It is the largest producer of milk; third in production of eggs and sixth in production of meat. Among fruits, output was highest for mangoes, followed by banana.

Surjit S Bhalla appointed as Executive Director for India at IMF

Economist Surjit Bhalla was appointed as the Executive Director for India at the International Monetary Fund (IMF), an official order said. His appointment has been cleared by the Appointments Committee of the Cabinet (ACC) headed by Prime Minister Narendra

Modi. The ACC approved the appointment of Mr. Bhalla for a period of three years from the date of assumption of charge of the post or until further orders, whichever is earlier.

Rural houses to get 2-3 hour piped water supply daily

Rural households will get two to three hours of piped water supply and 14.6 crore such households will be provided piped water connection in the next five years as part of the Union government's Jal Jeevan Mission, top officials of the Jal Shakti Ministry are learnt to have informed at a meeting of the group of Governors. During the meeting, the officials also said that the focus under this ambitious programme will be on sustainability of water sources. As part of the Jal Jeevan Mission, the government plans to provide all rural households with piped water connection. The project is estimated to cost

₹3.50 lakh crore, with the Union government and states sharing the expenses 50:50. The ministry officials also made a case for direct intervention by the Governors to push the efforts towards water conservation and suggested that Raj Bhavans should become the model for water conservation. Governors can impress upon higher education institutions to use their campuses for rainwater harvesting.

During the meeting the Governors gave several suggestions, with Bedi proposing that the focus should be on regional planning. They suggested a river basin



management Bill to protect floodplains. Water Resources Department Secretary U P Singh and Drinking Water and

Sanitation Department Secretary Parameswaran Iyer were among the top officers present.

Income threshold to avail microfinance increased

In a move that will enable more borrowers to avail loans from microfinance institutions (MFI), the RBI raised the household income limit of borrowers to ₹2 lakh for urban and semi urban areas from ₹1.6 lakh. For rural areas, the limit has been increased from ₹1 lakh to ₹1.25 lakh. This will mean that all the borrowers having an

household income of ₹2 lakh in urban/semi urban areas and ₹1.25 lakh in rural areas will be eligible for loans from MFIs, which are uncollateralised.

The lending limit per borrower has also been hiked from ₹1 lakh to ₹1.25 lakh.

BSE to launch three new agri futures contract

Notwithstanding the ragging controversy in NCDEX over investors defaulting in castor seed contract, the Bombay Stock Exchange will launch castor futures contract on its commodity platform. In fact, BSE will be expanding its agriculture contract offering by launching futures on chana and soyabean with the option of compulsory delivery on all the three new contracts starting from November.

The country's largest agriculture commodity exchange NCDEX had to extinguish castor contracts worth ₹ 735 crore or 50 per cent of open interest using the contract tear-up option for the first time-ever after some of its members started defaulting on margins as prices plunged from a high of about ₹ 5,600 a quintal to a low of ₹ 4,270.

The contract will have Patan in Gujarat as the basic

delivery centre while Deesa and Kadi will be additional delivery centres. The open position limit for the near month contract has been fixed at 3,750 tonnes for individual clients and at member level it will be 15,000 tonnes or one-fourth of the member's overall position limit in that commodity, whichever is higher.

BSE will have three contracts of chana expiring from November to January and the basic delivery centre would be Bikaner in Rajasthan with additional delivery centres in Akola (Maharashtra) and Jaipur (Rajasthan).

The exchange will launch four new contracts in soybean expiring from November to February. The basic delivery centre would be Indore in Madhya Pradesh and additional delivery centres at Akola, Nanded and Hingangath in Maharashtra besides Vidisha and Mansour in Madhya Pradesh.

Maharashtra: When farmers form a company to procure from farmers

On August 28, Shivaji More and other directors of the Ramling Farmers Producer Company (FPC) in the village of Wadzire in Ahmednagar's Parner taluka heaved a sigh of relief as the 113 tonnes of onion they had procured on behalf of the central government left for the Azadpur Mandi in New Delhi. This was the first time their FPC had ventured into government procurement. As a result, their farmers saved on the transport cost – instead of taking their produce to the wholesale market they sold it at the farm gate – and yet received better remuneration.

Ramling FPC is not the only one that has been active this year. Of the 30,000 tonnes of onion that the

National Cooperative Agricultural Marketing Federation (Nafed) has been offloading in the past few weeks to cool down onion prices, about 25,000 tonnes has been produced through Maha FPC, the apex body for village level FPCs in the state.

The procurement process started on April 4 with 39 FPCs spread across seven districts in Maharashtra. A total of 3,456 farmers sold around 25,000 tonnes of onion with the total purchase value pegged at around ₹ 30 crore. Price discovery was done by taking into consideration the nearby mandi prices. The processing and handling charges were paid to the FPC and Maha FPC by Nafed.



Soil health still far from ideal; excessive use of urea fertilisers continues

The Centre's efforts to improve soil health by getting farmers to check the excessive use of nitrogenous fertilisers have made only limited headway in the past two years. Against the ideal NPK (Nitrogen-Phosphorus-Potassium) consumption ratio of 4:2:1, the actual ratio in 2017-18 was 6.10:2.46:1. Although that represents a marginal improvement in the consumption ratio since 2015-16 - when it was 7.23:2.9:1 - it suggests that there is still much work to be done in changing usage patterns and improving soil health.

Soil health card scheme

Under the Soil Health Card scheme, introduced in 2014-15, farmers have their soil tested and get recommendations on the appropriate doses of fertilisers.

Indiscriminate use of nitrogenous fertilizers is detrimental to the soil and the crop. It also pollutes the

groundwater: the nitrogen from fertilizers, which is converted to nitrate by the bacteria in the soil, leaches into the groundwater and washes out of the soil surface, entering streams and rivers.

CRISIL expects urea fertiliser consumption to grow at 1.5% CAGR between fiscal 2019 and 2024, and that of non-urea fertilisers to grow at 3.6% compound annual growth rate in the same period. The mixed signals being sent by the Centre may account for the high use of urea.

On the one hand, the Centre has been trying to disincentivise excessive use of urea and other nitrogenous fertilisers in order to protect the soil, and has been pushing for 'zero budget' natural farming. On the other hand, it has been providing incentives to urea manufacturers to produce beyond the re-assessed capacity under the New Urea Policy.

Kerala Bank may not be delayed

The Big Bank Theory

The Reserve Bank of India has given nod to the government of Kerala to set up its own bank

THE FORMATION: 13 District Co-operative Banks (DCBs) will be merged with the Kerala State Co-operative Bank to form the State's largest banking network

POLITICAL TWIST: While the government has claimed that the objective is to strengthen the cooperative sector, the Opposition has

alleged that it would destroy the traditional cooperative sector

MALAPPURAM SAYS NO: All the DCBs, except the one in Malappuram district controlled by the opposition Congress-led UDF, have approved the Left government's proposal of amalgamation

Happy to know that the Reserve Bank of India has given the final nod for the setting up of the Kerala Bank... We hope that the formation of the new bank will accelerate development of the State

PINARAYI VIJAYAN, CHIEF MINISTER

Flipkart to start selling food through Farmer Mart

Walmart-owned Flipkart is entering food retail in India, where consumers spend about \$500 billion on groceries annually. Newly registered Flipkart Farmer Mart, with an authorised equity capital of ₹ 1,845 crore, will sell items produced locally. Sales will initially be online, although the company can also sell through physical stores.

In India, Walmart doesn't sell directly to consumers and is an organised wholesaler or cash-and-carry operator that sells merchandise to small neighbourhood stores,

hotels and catering firms. The world's largest retailer acquired Flipkart for \$16 billion in 2017 to gain access to India's \$670-billion retail market.

Food is the only segment in which retailers are allowed to sell directly to consumers. "It will give impetus to sourcing from farmers directly and supporting food processing industry. It will boost farmers' incomes and create jobs," food processing industries minister Harsimrat Kaur Badal told ET.



Maharashtra withdraws subsidy on milk powder exports

Amid the Assembly election fever in Maharashtra, the state government has done away with the subsidy of ₹50 per kg on export of milk powder. Under a scheme announced by the state government in July 2018, the government had put a subsidy of ₹50 per kg for export of milk powder and a subsidy of ₹5 per litre for farmers. The government, therefore, established a study

committee under Chief Secretary Anoop Kumar and Milk Commissioner Narendra Poyam, among others. The committee concluded that one subsidy can work at a time and both subsidies cannot be given to the sector simultaneously. Maharashtra's dairies say they will now reduce the procurement price of milk by 2%.

Sugar output may drop 12.38% to 28-29 million tonnes in 2019-20

The country's sugar production is expected to decline by 12.38% to 28-29 million tonnes in the 2019-20 marketing season starting this month, due to sharp fall in the output in Maharashtra. Sugar output stood at 33.1 million tonnes during the 2018-19 marketing year (October-September).

Sugar mills have partially started crushing operation, but will commence in full swing from November 15 onwards. There are about 534 sugar mills in the country. The government has fixed fair and remunerative price (FRP) of sugarcane at ₹275/quintal for the current marketing year. The FRP is the minimum price that sugarcane farmers are legally guaranteed to get from

sugar mills. The crop, which has a more than 10 per cent recovery rate, will get an additional ₹2.75 per quintal for every 0.1 per cent increase. Farmers in many states such as Andhra Pradesh, Karnataka and Maharashtra, are paid on the basis of the FRP set by the Centre. Others, in Uttar Pradesh, Punjab, Tamil Nadu etc., have a State Advised Price. It may be noted that sugarcane production is also estimated to be lower at 377.77 million tonnes in the 2019-20 crop year (July-June) as against 400 million tonnes last year, as per the Agriculture Ministry's first estimate. Uttar Pradesh and Karnataka are other two major sugar producing states.

Water changes lives in districts of Rajasthan, Gujarat

Khatubhai Panada owns two gunthas of land (one guntha is 10 m) in Magarda Khatelasa village of Rajasthan's Banswara district. The soil pattern in this village does not make agriculture easy, and like many other farmers, Mr. Panada works in the city as a labourer to eke out a living. His chilli crop has already earned Mr. Panada ₹55,000, and in the Rabi season, he expects his tomatoes to yield ₹35,000. "I get my seedlings from the nursery established in the village," said Mr. Panada.

The village is a part of the first phase of a project on improving livelihoods in rural households by improving availability of water and setting up community institutions. The project is undertaken by N. M. Sadguru Water and Development Foundation in Dahod and is supported by Axis Bank Foundation (ABF). The first phase includes 270 villages of Jhalawar, Banswara and Dungarpur districts in Rajasthan and

421 villages of Dahod, Mahisagar and Panchmahal of Gujarat. The population primarily comprises Scheduled Tribes, who own merely two acres of undulating, hilly land per household.

N. M. Sadguru foundation, NGO which was established in 1974 by Harnath Jagawat and Shrmishtha Jagawat, and works in the area of natural resource management. Phase 2 of the project will continue till 2023. The initiatives introduced under the project are water resource development, crop productivity enhancement and seed production, vegetable cultivation, horticulture, floriculture and dairy development.

Deepsingh Bharatsingh Parmar is a floriculturist in Dahod's Kamboi, known as the village of flowers. "It is hilly terrain. We levelled it, dug tubewells after building water structures on the river and turned the area suitable for production of rose, marigold and



Telangana State Co-operative Apex Bank Ltd.

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Period of Deposit	Applicable Interest Rate (% p.a)
180 days to 270 days	6.75
271 days to 364 days	6.95
1 year exact	7.10

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

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

Key Financial Indicators

(₹ in crores)

S. No	Particulars	As on 31.03.2019
1	Share Capital	157.30
2	Reserves	499.72
3	Owned funds	657.02
4	Deposits	3622.26
5	Borrowings	3501.99
6	Working Capital	7781.27
7	Loans & Advances	5597.06
8	Call money & short term deposits with other Banks	779.00
9	Investments	1243.22
10	Gross Profit	64.02
11	Gross NPAs	0.22%



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No. of loan cases sanctioned as on 30-09-2019	18.54 lakhs
Share of Small & Marginal Farmers in Bank's financial assistance.	68.66%
Fixed Deposits outstanding as on 30-09-2019	Rs.319.08Crores

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

BANK ACCEPTS FIXED DEPOSITS

1. One year and upto two years 9.40%
2. Two years and above 9.50%
3. 0.25% of additional Interest to Senior Citizens
4. Bank advances Gold loan, Vehicle loan, Salary loan, House Mortgage loan at attractive rate of interest.
5. Locker system available.
6. House and Site mortgage loan in Urban area.

STRENGTHEN THE FARMERS' BANK

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

K. Shadakshari, Ex-MLA
President

Ingulambika V. Sarode, K.C.S.
Secretary I/C

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



chrysanthemum,” he said. Hiraben is a member of the Water User Group under the lift irrigation scheme on Hiren river at Bajwa Amba village in Rajasthan's

Banswara district. She has started a nursery under the project to make available seedlings of tomato, brinjal, ladies finger and cauliflower.

It's only sugar 'n' spice for India's farm shipments now

TABLE 1: INDIA'S EXPORT OF AGRICULTURAL COMMODITIES

	2013-14	2016-17	2017-18	2018-19	APR-SEP 2018	APR-SEP 2019
Marine products	5,016.46	5,903.06	7,389.22	6,802.56	3,467.52	3,355.53
Basmati rice	4,864.69	3,208.6	4,169.56	4,712.44	2,247.34	2,031.33
Buffalo meat	4,350.23	3,903.49	4,037.11	3,587.15	1,890.65	1,599.87
Non-Basmati rice	2,925.05	2,525.19	3,636.6	3,038.16	1,577.02	1,017.31
Spices	2,497.22	2,851.95	3,115.37	3,322.45	1,587.69	1,962.71
Raw Cotton	3,637.53	1,621.11	1,894.25	2,104.41	929.59	226.6
Fruits & Vegetables*	1,563.88	1,684.51	1,687.59	1,732.21	797.08	745.44
Oilseeds**	1,291.67	1,355.23	1,174.35	1,156.76	554.08	480.73
Oilmeals	2,796.34	8,05.45	1,093.16	1,508.65	591.9	423.58
Castor oil	725.68	674.73	1,043.99	883.78	445.41	523.11
Coffee	798.8	842.84	968.57	822.34	429.86	392.64
Tobacco	1,011.35	958.69	934.25	981.34	492.97	485.64
Processed F&V	760.16	848.36	929.79	933.61	450.05	451.04
Cashew	848.65	793.49	927.47	658.3	314.21	282.73
Tea	798.76	731.26	837.36	830.93	386.11	444
Sugar	1,177.03	1,290.71	810.9	1,360.29	490.83	808.03
Guargum meal	1,979.63	463.35	646.94	674.88	355.38	260.23
Dairy products	727.52	253.73	303.05	481.55	180.57	152.23
Other Cereals	1,204.11	212.3	248.59	348.97	208.83	96.8
Wheat	1,569.03	66.85	96.72	60.24	20.84	29.21
TOTAL***	43,251.66	33,696.83	38,897.21	39,203.53	19,023.13	17,289.73

*Includes seeds; **Includes groundnut, sesame and niger; ***Includes other farm commodities. (IN MILLION DOLLARS)

TABLE 2: INDIA'S IMPORT OF AGRICULTURAL COMMODITIES

	2013-14	2016-17	2017-18	2018-19	APR-SEP 2018	APR-SEP 2019
Vegetable oils	7,249.85	10,892.75	11,637.48	9,890.32	5,334.64	4,740.89
Pulses	1,828.16	4,244.13	2,908.33	1,140.76	445.72	670.81
Fresh fruits	1,273.44	1,682.88	1,942.92	1,987.58	921.97	875.44
Cashew	774.12	1,347.13	1,419.51	1,610.56	1,217.88	849.32
Raw Cotton	394.47	946.88	979.32	633.05	420.34	990.6
Spices	571.36	858.95	990.7	1,135.44	517.67	751.94
Sugar	392.18	1,021.81	936.52	449.03	255.66	170.05
Natural Rubber	906.41	652.57	829.15	873.26	464.53	402.45
Wheat	4.42	1,268.64	364.5	0.77	0.68	0.43
TOTAL*	15,528.94	25,643.4	24,890.9	20,920.34	11,142.39	11,225.26

*Includes other farm commodities. Source: Department of Commerce. (IN MILLION DOLLARS)



Trade churn: Who will milk the benefits?

Dairy sector contribution to the Indian economy							
Year	Paddy & wheat output (₹ cr)	Milk output (₹ cr)	Milk/paddy & wheat production (%)	Milk as % of livestock output	Agri to GVA (%)	Livestock to total GVA (%)	Livestock as % of Agriculture GVA
2011	2,88,663	3,27,767	11.9	67.2	18.5	4.0	21.8
2012	3,29,976	3,72,228	11.4	65.9	18.2	4.0	22.0
2013	3,63,196	4,23,150	14.2	65.5	18.6	4.1	21.9
2014	3,55,655	4,95,835	28.3	66.8	18.2	4.4	24.4
2015	3,74,018	5,60,777	33.3	67.1	17.7	4.6	26.2
2016	4,19,206	6,14,387	31.8	66.9	17.9	4.6	25.8

Note: Author calculation, Source: National Account Statistics.

Farmers' share on consumers' price and average final bound duties on dairy product						
Country	Farmers' share on consumers' price@	Self-sufficiency in milk (%) @	Farmer milk price as % of world market price @	Avg final bound duties on dairy product (%)#	Milk yield per cow in kg in 2018	No. of dairy farmers (million) 2018*
India	60	100	15.6+	63.8	1,715	73.08
Russia	47	80	27.4+	15.1	3,855	3.091
Canada	46	99	83.4+	208.5	10,491	0.011
Germany	45	111	7.5+	\$	8,063	0.063
Japan	45	73	153+	101	8,604	0.018
US	43	105	16.6+	19.2	10,500	0.038
Denmark	43	202	11.3+	\$	9,982	0.003
Belgium	37	100	4.7+	\$	7,928	0.010
South Africa	36	102	1.1+	92.3	5,863	0.001
Brazil	35	97	10.6+	48.8	2,202	0.962
France	34	116	11.2+	\$	7,054	0.063
Pakistan	33	99	3.9+	100	1,276	6.984
Netherlands	30	192	13.7+	\$	8,687	0.012
Italy	27	80	31.4+	\$	7,500	0.028
Australia	24	117	6.8-	4.3	6,197	0.005
New Zealand	23	823	10.0-	10.0	4,437	0.012
China	20	76	68.1+	12.2	2,383	0.013

Profiles 2019. + denotes above world market price above - below the world market price and *-The world dairy situation 2019.\$ denotes not available but follows EU tariff rate (44.8%)

Relaxed norms may boost tea tourism'

The tea industry in West Bengal is witnessing a major boost to employment with the State government's relaxation of norms for use of leasehold land in a tea garden. The move may induce garden owners to promote tourism, horticulture projects and other allied economic activities, said P. K. Bhattacharjee, secretary general, Tea Association of India

Well-intentioned act

Indian Tea Association (ITA) chairman Vivek Goenka said that the ITA had already identified crops cultivable in West Bengal and the government's initiative would allow it on a commercial scale.

In 2015, the West Bengal Government had amended relevant schedules of the West Bengal Estates



Acquisition Act to allow tea estates to use leasehold land for horticulture, medicinal plant farming, dairy farms and micro hydel project besides tea tourism projects. However, this had capped the relaxation to certain fixed proportions for various uses at 20 acres. Now, this has been increased to 150 hectares. ITA noted that by not allowing housing activities, the government had communicated its resolve not to

Radio channel soon to inform farmers about climate change

The Maharashtra State Commission for Agricultural Costs and Prices is planning to start a dedicated community radio channel to inform farmers about climate change and help in resolving their problems. An expert panel on the radio channel will try to address the issues faced by farmers, the commission's chairman Pasha Patel told PTI, adding that necessary permissions have been taken to start the channel by this year-end. The radio station will

Centre wants States to ditch APMC for e-NAM

States were being "cajoled to reject" the APMC system in favour of a pan-India electronic trading portal that creates a unified national market for agricultural commodities. So far, the Centre had been focussed on reforming APMCs, allocating funds to upgrade them, and persuading States to adopt a model APMC Act.

Speaking at a global conference on rural finance hosted by the National Bank for Agriculture and Rural Development (NABARD), Ms. Sitharaman said the Centre was talking to States to "dismantle" the APMC system and move towards the electronic National Agriculture Market (e-NAM). While the Centre has been promoting e-NAM since its introduction in 2016, only 1.6 crore farmers have registered on the portal so far, from among the almost 12 crore cultivators in the country. Out of almost 2,500 APMCs, 585 in 18 States have been connected to the e-NAM portal so far. Interstate trade, which has the potential to give farmers wider market access and better prices, has 21 APMC mandi participants in 8 States so far.

NABARD Chairman Harsh Bhanwala told that APMCs required reforms to ensure that a transparent price discovery mechanism exists, particularly for spot prices. "Also, they need to have infrastructure

disturb the present ecosystem.

The government has also assured of a 'Tea and Tourism Allied Industry Policy 2019' to complement these initiatives. The tea industry has been plagued by rising costs (around ₹185 a kg) and stagnant prices (about ₹157.5 per kg in West Bengal). In this scenario, many gardens have begun incurring losses.

be based at Lodaga village in Latur district, he said.

The new radio channel will broadcast discussions on climate change and problems related to it. To address the issues of cultivators, the commission will form a committee of five to six members, comprising experts from the Krishi Vigyan Kendras, State Agriculture Department and private companies working in the field of agriculture and technology, he said.

available for storage, collateral management and quality control assessment," he said.

NABARD is now ready to operationalise a ₹2,000 crore agri-market infrastructure fund aimed at upgrading 585 APMCs and 10,000 gram in agricultural markets.

There may be special support in the offing for Jammu and Kashmir's farmers. Over the last two months, NAFED has aided J&K's apple farmers by procuring their crop. Ms. Sitharaman said NABARD had now been asked to aid peach, walnut and saffron farmers as well.

The government will form 10,000 farmer producer organisations to ensure that farmers get the correct price for their produce. She also highlighted the role of self-help groups in rural developments and said the government had in the budget said it will provide. ₹1 lakh to each of these SHGs to bring growth in rural parts. "The approach to farmers, farming community-related to women, agriculture and agri-related matters would have synergy and have a dynamic effect to the rural economy," the minister said. She also asked farmers to produce oilseeds in place of other crops as India particularly imports edible oil and palm oil.

The minister asked National Bank for Agriculture and



Rural Development (NABARD) chairman Harsh Kumar Bhanwala to visit Jammu and Kashmir to ensure that the farmers get the correct price of their produce in the next season. The minister also said the central government is making efforts to push sustainable and renewable energy sources in rural areas in order to provide farmer.” I want

How a farmers' producer company is India's largest grape exporter

Back in 2011, when Vilas Shinde decided to convert his “farmer-entrepreneurs” company into a full-fledged cooperative or Farmers Producer Company (FPC), there were economic and market-driven compulsions behind it. Shinde's journey as an agro entrepreneur had begun in 2004, when he, along with nine other farmers in Nashik's grape bowl, incorporated a privately-held company to undertake direct exports and help realise a better value for their produce. That very year, the fledgling firm shipped 4 containers of fresh grapes to the European Union (EU). 2009, however, proved a watershed moment, when the EU rejected grape consignments from India after they were detected to have pesticide residues beyond acceptable limits. That, according to Shinde, was the trigger for forming the Sahyadri FPC, which, by 2013, had 550 farmer-shareholders.

“My idea was always to build a value chain specifically for small and marginal farmers. But now, we also realised the need for investing both in infrastructure and backend integration to enable farmers grow quality produce,” he says. UAE, while recording a profit of ` 17.89 crore on total sales of ` 360 crore. The latter also included domestic sales through 13 retail shops in Nashik and Mumbai. This company, which now has over

Finance ministry may get a say in oversight of co-op banks

The finance ministry will likely have an important say in the oversight of urban co-operatives that are effectively functioning like banks, as the ongoing crisis at PMC Bank has forced authorities to overhaul the rules and regulations governing such entities. The government is planning to amend the Banking Regulation Act and the Co-operative Societies Act to bolster the regulatory oversight of urban cooperative banks (UCBs). Currently, such co-operatives are usually regulated jointly by the RBI and states.

annadaata (food provider) to be urjadaata (energy giver) also. We are working in a direction where we can install solar panels, turbines etc. so that farmers can generate power on those pieces of land where they are unable to grow the produce,” she said.

6,600 farmers, is also India's largest grapes exporter.

Sahyadri has a three-tier structure comprising the apex organisation itself, crop-wise FPCs and farmers under them. The mandate of the crop-wise FPCs (for grapes as well as tomatoes, pomegranates, bananas, guavas and other fruits & vegetables) is to provide technical support to farmers, apart from undertaking aggregation, grading, sorting and packaging of produce. The apex Sahyadri FPC handles post-harvest management, processing, distribution and marketing, both for exports and the domestic market.

Sahyadri's 65-acre campus at Mohadi village in Nashik's Dindori taluka today has infrastructure for packing, pre-cooling, ripening, cold storage and aseptic processing of the produce of its farmer-members. Equally significant is the backend integration system, wherein the plots of individual farmers are geo-tagged to allow the company keep real-time update of the crop's growth and accordingly plan its harvest calendar. Besides remotely monitoring crop condition on the ground through an in-house IT platform, Sahyadri also claims to guarantee complete traceability of its farmers' produce by embedding the related information in bar-coded packets.

Some other steps that are being deliberated upon are installing professional management at urban co-operative banks and turning them into commercial banks, if they so wish, once their businesses reach ` 20,000 crore each, according to the source. However, those large co-operatives not willing to convert into banks may still continue to run as co-operatives but they will have to be subject to stricter regulatory and supervisory guidelines. These measures are in sync with the recommendations of an RBI panel under the then deputy governor R Gandhi in 2015.



'Wasteland conversion threatens livelihoods, ecological balance'

India's conversion of more than 14,000 square km of 'wasteland' — mostly dense scrub, glacial areas, sands or marshland — into productive use between 2008-09 and 2015-16, and the government's target to restore 26 million ha. of wasteland and degraded land by 2030 risks affecting the livelihoods of pastoralists, fishermen and nomadic farmers who are often dependent on these traditional "commons" lands, caution environmental policy researchers and social activists. These 'commons' also act as a buffer against floods, droughts and pollution for a wider population, they point out.

The Wastelands Atlas, prepared in collaboration with the National Remote Sensing Centre and released recently by the Land Resources Department uses satellite data to measure the extent of 23 different types of wastelands and tracks the impact of reclamation efforts. While 14,536 sq. km of wasteland were converted to productive use, the country saw a net conversion of 8,404 sq. km. Over half that land lies in Rajasthan, where a net change of 4,803 sq. km was seen, with large areas of scrub and sands brought under the plough and converted to cultivated cropland. The State also has extensive solar parks set up in its wastelands,

thus converting them to industrial use in the production of renewable energy. Uttar Pradesh and Bihar also saw high levels of net conversion.

The government has been encouraging wasteland conversion, pointing out that while India has 18% of the world's population, it only has 2.4% of the land area. In a foreword, Union Minister of State in the Prime Minister's Office Jitendra Singh suggested reclamation and afforestation efforts, infrastructure and renewable energy projects as ways to convert wasteland to productive use, apart from conversion to cropland. Apart from government-driven efforts, simple encroachment by local residents could also result in conversion of wastelands. Pastoral communities depend on common grazing land, gatherers and nomadic farmers depend on scrub forest and open scrubland for shifting cultivation, while fishermen can make a living off waterlogged and marshy areas. In southern India, these areas have traditionally been called 'poromboke' land which is communally owned, cannot be bought, sold or built on. In Karnataka, the gomal lands are common grazing areas. In other regions, village forests and pastures, or gram panchayat lands, have played a similar role from medieval times.

Darjeeling green, white teas get GI backing

Darjeeling green and white teas, whose price varies from ₹3,000- ₹ 10,000 per kg, have received Geographical Indication (GI) tag for the domestic market, which will put to rest any doubt about their authenticity and quality.

Both these premium teas have been registered as a GI in the country with effect from October 24, 2019, which means that any teas sold as Darjeeling white and green teas in the domestic market without GI will not be considered authentic teas. "Darjeeling black tea is already registered as GI. Since the demand for Darjeeling white and green teas is increasing in the domestic market, we thought that these two varieties also be protected under GI. Accordingly, the Tea Board took steps to register these two varieties under GI,"

Kaushik Basu, Secretary, Darjeeling Tea Association (DTA), told.

The Tea Board is the registered proprietor of GI for Darjeeling tea. Geographical indications mean indications which identify a product as originating from the territory of a member, or a region or locality in that territory, where a given quality, reputation or other characteristic of the product is essentially attributable to its geographical origin.

Darjeeling white tea has a unique aroma. While the leaves used for making black tea undergo withering and oxidation, those used for making white tea do not face any withering and oxidation. In other words, white tea undergoes minimum processing and the terminal buds with rich pubescence of tea shoots are merely dried in



natural sunlight. This allows the buds to retain the covering of velvety silver colour. Darjeeling white tea brews have a pale yellow/light translucent colour and has a slightly sweet flavour with no 'grassy' undertones sometimes associated with green tea.

Basu said white tea is a preferred choice among tea connoisseurs, both in India and abroad, and that is why these teas fetch premium prices. Darjeeling white tea has good demand in the US and European Union. The annual estimated production of Darjeeling white tea is

NAFED issues international tender to buy, import 100,000 tonnes of corn

The NAFED has issued an international tender to purchase and import up to 100,000 tonnes of corn (maize), European traders said. The corn should be sourced from Ukraine, they said. The tender closes on Dec. 3 with offers having to remain valid up to Dec. 24. NAFED, is seeking corn free of genetically-modified

GoM set up to resolve land leasing issues

The Prime Minister's Office has set up a group of 12 ministers to resolve differences over the proposed Model Agricultural Land Leasing Act, 2016. The GoM includes the ministers of defence, home, agriculture and rural development. A GoM has been constituted by PMO for examining the draft Model Agricultural Land Leasing Act, 2016, prepared by Niti Aayog and recommending the way forward in the light of necessity, practicality and desirability of encouraging land leasing," said a government order.

The move came after the Aayog took up with the PMO the issue of the crucial legislation being held up. The ministers of social justice and empowerment, tribal

How cotton subsidies by governments affect the sector

Subsidies offered by cotton producing nations to its growers are impacted by market prices, a report from the Washington-based International Cotton Advisory Committee (ICAC) has revealed. Pointing to historical trends, the ICAC report says that there has been a strong negative correlation between subsidies and cotton prices. This means, in the years when prices are high, the subsidies tend to decline, while in the years

one lakh kg. The DTA secretary said that they have also initiated steps to register both Darjeeling white and green teas under Protected Geographical Indication (PGI) for the world markets. He further said that the demand for Darjeeling green tea is increasing because of its health values. "Apparently, Darjeeling green teas taste better than other green teas. Darjeeling green teas are less oxidised teas." The annual production of Darjeeling green tea is 1million kg. The 87 tea estates in Darjeeling hills annually produce 8.5 million kg of teas.

organisms (GMOs), they said. Shipment is sought in 2020 between Jan. 10 and Jan. 31. Some 50,000 tonnes is sought for shipment to the port of Mangalore and 50,000 tonnes to the port of Tuticorin. Offers are sought on c&f free out terms which include some ship unloading costs.

affairs, environment and forest, railway and commerce and industry are also part of the group. A Niti Aayog expert committee led by T Haq had proposed legalising land leasing to promote agricultural efficiency, equity and poverty reduction and to ensure complete security of the ownership rights of the landowner as well as security of tenure for the tenant through the agreed lease period. Terms and conditions of lease were to be determined mutually by the landowner and the tenant. The share of agriculture in the gross domestic product (GDP) is only about 14%, but it employs 49% of the country's total workforce and 64% of the rural workforce.

when prices are low, subsidies tend to rise.

"The Cotlook A Index declined from an average of 91 cents per pound in 2013-14 to an average close to 70 cents per pound in 2014-15 and 2015-16, before rising to 83 cents per pound in 2016-17," it said. The subsidies by the cotton growing nations touched a record high of around \$10 billion in 2014-15. However, during 2017-18, average prices rose to 88 cents per



pound and subsidies increased as well, while in 2018-19, a moderate decline in prices was accompanied by a moderate decline in subsidies.

According to the report, subsidies by the 10 cotton growing countries for 2018-19 have been estimated at \$5.4 billion (approximately ₹38,768 crore), marginally down from \$5.5 billion (approx ₹39,500 crore) in 2017-18. For the year 2018-19, the subsidies given by 10 countries averaged 16 cents per pound, marginally down from 17 cents per pound in 2017-18. These subsidies are given in the form of direct support to production, border protection, crop insurance subsidies, and minimum support price mechanisms.

Norms of Aadhaar KYC eased, not of changing address in Aadhaar card

One can now give a more functional address, say a place of work, while furnishing Aadhaar as proof of identity for know-your-customer (KYC) purposes with banks and other service providers. This can be done even if the address opted for does not match with the one specified in your Aadhaar card/records.

The Finance Ministry has now amended the PMLA rules, allowing this flexibility for people who use Aadhaar for KYC and want to give their current address, which is different from the address mentioned in Aadhaar

India to 9% growth needed to achieve \$ 5 trillion economy

The country will need to grow by 9% every year for five years continuously and raise aggregate investment rate to 38% of GDP to achieve Prime Minister Narendra Modi's target of turning India into a USD 5 trillion economy.

In its latest edition of Economy Watch, EY said assuming India grows by projected 7% in the current fiscal year ending March 31, 2020, the size of the economy will grow to USD 3 trillion from USD 2.7 trillion in the previous year.

It will have to grow by 9% in each of the five subsequent years to take the size of the economy to USD 3.3 trillion in FY21, USD 3.6 trillion in FY22, USD 4.1 trillion in FY23, USD 4.5 trillion in FY24 and USD 5 trillion in FY25.

In FY19 (2018-19), the gross investment rate,

In 2018-19, the MSP for long staple Shankar-6 variety of cotton was hiked substantially to ₹5,350 per quintal (equivalent to 101 cent per pound of lint). The same was ₹4,320 (89 cents per pound) in 2017-18. Notably, for kharif 2019-20, the cotton MSP has been further hiked to ₹5,550 (approx 105 cents per pound).

For the US, ICAC noted that the sum of all types of support provided to producers including Price Loss Coverage (PLSC)/Agriculture Risk Coverage (ARC), crop insurance, and STAX is estimated at \$1.2 billion (with works out at 14 cents per pound) in 2018-19, up from \$890 million (9 cents per pound) reported in 2017-18.

records.

This will be allowed if the individual concerned provides a self-declaration for the current address, according to the latest amendment to the Prevention of Money Laundering (Maintenance of Records) Rules 2005.

With this move, people who may have their residential address in their Aadhaar can now give work address as their current address, say economy watchers.

estimated at 31.3%, was able to deliver a real growth rate of 6.8%. The implicit incremental capital-output ratio (ICOR) was 4.6, it said. "This is relatively high because of deficient capacity utilisation."

Historically, India's average ICOR during the three-year period from FY17 to FY19 has averaged 4.23. The highest achieved investment rate in India was 39.6% in FY12. EY said achieving such levels would be consistent with the requirements of our demographic dividend. In China, average saving and investment rates of close to 45% have been maintained for a long period. Total investment is the sum of public investment, household investment and investment by the private corporate sector. Raising the growth rate to 9% in FY21 would require uplifting the investment rate to close to 38% of GDP as against 31.3% in FY19, it said.



FM announced 32 measures to boost the economy

The government unveiled the much-anticipated stimulus measures to boost the economy and perk up markets, delivering a comprehensive package that sought to address tax issues, lift credit flow and improve interest rate transmission, besides seeking to aid the auto sector.

The recovery package sought to provide immediate

succour to some of the worst pain points of the economy, in the hope of effecting a turnaround.

Finance minister Nirmala Sitharaman announced as many as 32 measures in six "silos" that included dropping the contentious surcharge on foreign portfolio investors (FPIs), doing away with the angel tax on startups and an immediate ₹70,000 crore

capital infusion into banks to kickstart credit flow.

Two more sets of measures will be announced, one as early as the middle of next week, the finance minister said.

The markets responded positively to news of the impending announcement by the finance minister that was scheduled for 5 pm. At the 3.30 pm close on Friday, the Sensex was up 0.63% to 36,701.16 points. Since the July 5 budget, it has dropped more than 7%, leading to the destruction of about ₹15 lakh crore in market value, much of it because of the so-called super-rich surcharge that impacted FPIs structured as trusts. The rupees too has taken a beating, ending at a near eight-month low on Thursday before recovering on Friday to 71.66 to the dollar.

"This government even from 2014 has kept reform at the top of the agenda. It's an ongoing process for us - it's not that as if in this tenure, post-2019, we have forgotten the reform agenda. Not at all," Sitharaman said, hitting out at recent criticism that the government had ignored the economy in its second term. "We are alive to challenges and will continue to respond to them in real-time basis, not in kneejerk manner but in a well thought through and carefully nuanced manner."

1. Tax Measures <ul style="list-style-type: none"> Budget surcharge on capital gains scrapped for domestic and foreign investors No angel tax on startups 	
2. Bank NBFs/MSMEs <ul style="list-style-type: none"> Immediate Rs 70K cr infusion into PSBs Banks to pass on benefits of rate cuts to all borrowers One-time settlement policy to resolve MSME, retail loans Mechanism to protect bona fide decisions by bankers Support to NBFCs/HFCs Faster GST refunds; easier bill discounting for MSMEs 	3. Financial Markets <ul style="list-style-type: none"> Steps for deepening bond markets Corporate access to global markets Aadhaar-based KYC for demat accounts and MF investments Measures soon to develop offshore Re market
4. Automobiles <ul style="list-style-type: none"> BS-IV vehicles to remain operational entire life Hike in registration fee deferred till June 2020 15% additional depreciation, total 30% till March 2020 Govt to buy more cars 	5. Infrastructure <ul style="list-style-type: none"> High-level monitoring of delayed payments by govt and PSUs Rs 100-lakh crore plan for infrastructure to be activated
<h3>What it Means for</h3>	
1. Economy <ul style="list-style-type: none"> Assurance from govt it will take steps Monetary transmission to get better Demand boost from lower interest rates Banking/NBFC measures to push credit flow Auto sector could bounce back 	2. Consumers <ul style="list-style-type: none"> Borrowers to get benefit of rate cuts Fall in interest rates on auto and home loans NBFC credit flow to improve
3. Markets <ul style="list-style-type: none"> Issue of higher tax surcharge on FPIs settled Long-term structural reforms 	4. Automobile <ul style="list-style-type: none"> Uncertainty ends over EVs/BS-IV vehicles Boost in demand from govt buys & depreciation
5. Banks & NBFCs <ul style="list-style-type: none"> PSBs get immediate capital NBFCs get more support help from banks Shift to transparent interest rate regime Bankers get protection 	6. Corporates <ul style="list-style-type: none"> Improved demand due to cheaper consumer credit Lower interest burden on corporate loans Infra-focussed firms to get dues from govt
7. MSMEs <ul style="list-style-type: none"> Liquidity via refunds & bill discounting Flow of funds from NBFCs Easier access to banking 	



Farmers' contribution will be significant in making India \$5-trillion economy: Agri Minister

Farmers should focus on developing agri-allied activities such as animal husbandry, bee-keeping and horticulture to double their incomes by 2022, Union Agriculture Minister Narendra Singh Tomar said. Farmers must adopt scientific farming, increase the use of technology and mechanisation in agriculture to achieve this goal," he told.

Gujarat Chief Minister Vihar Rupani said, "Our farmers should focus on per drop, more crop. It is time our

farmers adopt cooperative farming and drip irrigation to achieve more yields."Rupani also stated that Gujarat's farmers have exhibited their prowess in the horticulture with export-oriented cultivation of pomegranate in Banaskantha, dates in Kutch and cashew in tribal region of the State. He also stated that after successfully taking Narmada waters to distant areas of Kutch, Saurashtra and North Gujarat, the prospects of agriculture in the State have improved.

India to raise target for restoring degraded land

Prime Minister Narendra Modi has raised by 10% the amount of degraded land India has agreed to rehabilitate by 2030.

"I would like to announce that India would raise its ambition of the total area that would be restored from its land degradation status, from 21 million hectares to 26 million hectares between now and 2030," he said as the keynote speaker during the high-level ministerial segment at the ongoing United Nation Conference of Parties summit on land degradation. Mr. Modi in his address said that this target would be achieved with an emphasis on "degraded agricultural, forest and other wastelands by adopting a landscape restoration

approach."

India faces a severe problem of land degradation, or soil becoming unfit for cultivation. About 29% or about 96.4 million hectares are considered degraded. This January, India became part of the "Bonn Challenge", a global effort to bring 150 million hectares of the world's deforested and degraded land into restoration by 2020, and 350 million hectares by 2030. At the United Nations Conference of the Parties (COP) 2015 in Paris, India also joined the voluntary Bonn Challenge and pledged to bring into restoration 13 million hectares of degraded and deforested land by 2020, and an additional 8 million hectares by 2030.

INI in pact with Munger Farms to grow blueberries

Horticulture company INI Farms and US-based Munger Farms plan to form a Joint Venture to cultivate blueberries in India and export pomegranates. The two companies have shortlisted Marathwada, Ahmednagar, Pune and Western Maharashtra to grow the fruit.

Blueberries are currently available at ₹4,000 a kilogram in the retail market. The venture capitalist-backed INI Farms, which is currently into Pomegranate, Banana and Coconut farming, plans to introduce the product in the retail market in the next 2-3 years.

David Munger, Owner, and Director, Munger Farms said that currently, they have been successful in cultivating and marketing blueberries across the world. From the perspective of the joint venture, the two companies are looking at starting with the

research first to determine what varieties will fit best here. Munger said his firm had developed a way to grow the fruit in California which, too, has tropical weather. "Picking the right variety, right region, technology, and the right growing conditions is what we are looking at," he said.

Tech-driven cultivation

He added that the company will test a lot of new technologies, varieties, techniques, field structures and technology. "We are also going to use technology to recycle water from the leftovers of the plants as well to work around the drought situation. We will also pick the berries at the set time to avoid wastage," he explained.



Agriculture 4.0: Making farmers and farming smart

Many opine 'Agriculture 4.0' akin to 4G of telecom. Agriculture 4.0 is "going back to basics, but with technology as its underpinning" to usher in sustainability, in the wake of climate change and degradation of our agricultural ecosystems. We need to re-look at agriculture with the 'farmer at the centre', and need to focus on 10 'elements of strategy'. These elements also supplement the recommendations of the High Powered Committee of Chief Ministers that is primarily examining agri-market reforms.

First, 'seeds'. Most of our staples are self-pollinated crops and managing seed multiplication is easy. Hybrids predominate cross-pollinated and high-value crops like vegetables and cotton. Seed villages and community-managed seed systems have delivered results in many places.

Second, 'soil health, crop health and public health' are inextricably interconnected. It is felt that inappropriate usage of fertilisers and pesticides is polluting surface and subsurface aquifers and our food chains have chemical residues. The National Innovation Foundation has codified several such ideas. The National Institute of Nutrition, Hyderabad, has noted that the food we eat is low on many nutrients. Improving soil health is thus sine qua non, as it reflects on public health through the food we eat. The PM rightly requested farmers on August 15, 2019, to reduce the usage of chemical fertilisers. Our policy must bring soil health into sharp focus, research indigenous models that work, and also educate farmers on scientific approaches. Codifying and transforming appropriate technologies into entrepreneurial activities at farmers' level would add to their incomes.

Third, 'sustainable agriculture'. These are integrated crop-management systems that help in restoring ecosystems by predominantly using organic inputs. Zero-budget natural farming is one such system; the system of rice intensification is another.

Fourth, 'principles of crop geography', or growing

crops suitable to a geography. We have examples of unsuitable crops in geographies, sugar cane in rain-fed areas and cotton on red soils are the examples.

Fifth, 'catch the rain where it falls' must be the national mission. Participatory watershed development is ideal. Rainwater, when harvested appropriately, will reduce the pace of water-flow, enabling it to seep through and charge aquifers. MGNREGA and Jal Shakti Abhiyan should become synonymous.

Sixth, 'agricultural marketing'. Volatility in agricultural product prices is not good for farmers and consumers. Planning crop production and matching it with domestic and foreign demand must begin. Import policies need to interface this planning process. Instruments like PDS, MDM, ICDS must use local crops as far as possible. Celebrating local crops is a must. Electronic marketing has a long way to go and be embraced with missionary zeal.

Seventh, 'agricultural credit'. India has mastered all systems for crop production including loans for growing crops. Now, the focus must shift to credit for post-harvest, which can stop distress sale by farmers. Another focus must be long-term agricultural credit that can promote capital formation in agriculture.

Eighth, 'agricultural extension'. Extension played a crucial role in the Green Revolution, and agri-input dealers who provide agri-inputs on credit are de facto advisers at many places. Successful examples of agricultural extension need to be 'lionised and celebrated'. Communication experts from the advertisement world need to be co-opted to retool agricultural extension protocols. In the euphoria of technology, 'human touch' must never be forgotten in agri-extension.

Ninth, the PM's clarion call of doubling of farmers' income is a paradigm shift in our thinking process. Farmers' income can be improved through reducing the cost of cultivation, improving productivity, efficient marketing, adding complementary components like fruit trees, farm forestry, agro-forestry, dairy, small



ruminants, etc. Area- and crop-specific, soil- and farmer-friendly models have to be developed.

Tenth, should agriculture be a 'state subject'? Many imponderables are staring at us at meta level: climate change, water scarcity, drawdown of groundwater, food security, nutrition security, safe food. At farmers' level, a host of issues need attention—shouldn't

farmers' needs primarily drive agricultural research? Relationships between farmers, civil society, research establishments, states and the Centre are a must to deliver policy for sustainable agriculture.'Jal, jameen, janwar, jungle and jan' captures the essence that human existence and sustenance are inextricably twined to nature. This tenet must guide our policy.

New blockbuster wheat from IARI

PERFORMANCE OF BLOCKBUSTER WHEAT VARIETIES

	Mean Yield*	Potential Yield*	Protein %	% Wet Gluten	% Dry Gluten
HD 3326	57.5	79.6	12.80	30.85	10.10
HD 3086	57.7	75.2	11.39	27.45	8.50
HD 2967	52.8	69.3	12.33	27.25	9.00
WH 1105	55.1	71.0	12.28	27.25	9.25
DBW 88	54.9	68.4	12.35	28.50	9.55
DPW 621-50	54.1	71.6	12.20	28.00	9.50

*Quintals per hectare. Source: Indian Agricultural Research Institute.

India can emerge as global seed hub, Minister tells tech congress

India has the potential to emerge as a global seed hub, said Union Minister of State for Agriculture Parshottam Rupala, exhorting the seed sector to take advantage of the market opportunity to boost exports. Speaking at the inaugural of Seed World 2019, the world seed trade and technology congress, in Bengaluru, Rupala said the government is keen to boost farm sector exports and develop the seed sector.

Seed exports

He called upon the industry to come out with suggestions that could help develop the seed sector and to increase exports. The demand for organic products is on the rise globally and only India has the potential to tap such a demand, he said. Rupala said the government is keen on introducing the Seeds Bill, to regulate the sector in the next session of Parliament. He called upon the industry to help address the issue of fake seeds and create awareness about certified seeds among the farming community.

Michael Keller, Secretary General, International Seed Federation, emphasised the need for more public-private collaboration in seed production. Research and development in seed sector entails huge investment

and public breeding is slowing down in many countries, Keller said.

Seed producers have big responsibility to provide improved seeds to farmers as it is the most critical input for food production. To feed the rising population from limited land resources, improving the production capacity is crucial. Seed sector, one of the most regulated sectors in the world, is looking for science-based regulatory approach, Keller said. The seed business needs protection as it entails a lot of investment. The production of seeds is not going to be sustainable if protection is not provided, Keller said, stressing the need for implementation of UPOV Convention and plant breeders' right.

MJ Khan, Chairman, Indian Council of Food and Agriculture, said the India Seed Forum, a body of industry representative and academia among others, has been set up to promote the India brand seeds. The seed market in India stood at \$4.1 billion in 2018 and is expected to register a compounded annual growth of 13.6 per cent during 2019-24 to reach \$9.1 billion by 2024, a report released on the occasion said.



RBI panel suggests measures to boost credit to farm sector

To address gaps in credit delivery to the agriculture sector, a RBI panel has recommended suitable measures, including the setting up of a credit guarantee scheme jointly by the Centre and States, upping the target for banks to lend to small and marginal farmers (SMFs), and avoiding loan waivers.

Underscoring that there is no guarantee scheme available to banks to cover the default risk of borrowers, the central bank's internal working group (IWG) to review agriculture credit suggested that the Government of India, in partnership with State governments, should set up a credit guarantee fund for the agriculture sector. This scheme for the agriculture sector should be on the lines of credit guarantee schemes implemented in the micro, small and medium enterprises (MSME) sector.

Federal institution

The IWG, which was headed by MK Jain, Deputy Governor, felt that there is a need for a federal institution, established on the principle of cooperative federalism, having representation from both Central as well as State governments. Hence, it recommended that the government should set up a federal institution, on the lines of the GST (Goods and Services Tax) Council.

The group sought enhancement in the sub-target for SMFs from the existing 8% of adjusted net bank credit to 10% with a roadmap of two years. In this regard, it reasoned that SMFs account for more than half of the

total agricultural output at the national level and hold a major share in the high value crop production.

Farm-loan waivers

The group suggested that the Central and State governments should undertake a holistic review of the agricultural policies and their implementation, as well as evaluate the effectiveness of current subsidy policies with regard to agri inputs and credit, in a manner which will improve the overall viability of agriculture in a sustainable manner. In view of this, loan waivers should be avoided.

Banks should be allowed to give consumption loans to farmers up to a sanctioned limit of ₹1 lakh under priority sector lending (PSL), provided they are able to obtain collateral security and are satisfied with their repayment capacity based on the cash flows of the borrowers, the group said. However, such loans will not classify for PSL-Agri.

The IWG said interest subvention scheme should be replaced with direct benefit transfer to targeted beneficiaries – SMFs, tenant farmers, sharecroppers, oral lessees, and landless labourers as individual borrowers or through self-help group/joint liability group model, with an overall limit of ₹3 lakh per individual farmer. Further, in order to curb the misutilisation of interest subsidy, banks should provide crop loans, eligible for interest subvention, only through the Kisan Credit Card mode.

Are we being fair to small and marginal farmers?

In 2018-19, for instance, bank lent ₹6.26 lakh-crore to small and marginal farmers, says NABARD. But with small and marginal farmers comprising a significant proportion of the total number of cultivators in the country, should we be happy about only 50% of the total credit going to them? In some large agri States such as Bihar, Chhattisgarh, Jharkhand and West Bengal, penetration of institutional credit is, in fact, very poor. On the other hand, in Kerala, Tamil Nadu,

Telangana and Karnataka, agri-credit is higher than agri-GDP (average for 2015, 2016 and 2017, as per the Handbook of Statistics on Indian States), which means farm loans are being diverted for purposes other than agriculture. The gross NPA in the agriculture sector is as high as 8.44% (as of March 31, 2019).

Disproportionate lending

About 30% of households in rural India are still dependent on non-institutional sources for their credit



needs. This includes tenant farmers, share croppers and landless labourers who do not have land or other assets to get credit. Also, those farmers engaged in allied agricultural activities have been neglected in lending. Data from the RBI and the Ministry of Statistics and Programme Implementation (MOSPI) show that even as allied activities — livestock, forestry and fisheries — contributed about 40% to the agricultural output in 2016, their share in total agri-credit was only 6-7%.

The credit States receive is disproportionate to how much they require. Based on the ratio of crop loan-to-input, RBI data show that some States get significantly high credit against their input-cost requirement. This includes Andhra Pradesh (7.5 times), Kerala (six times), Goa, Telangana, Tamil Nadu, Uttarakhand and Punjab. On the other hand, States including Jharkhand, West Bengal, Chhattisgarh, Bihar, Odisha, Maharashtra, Uttar Pradesh and Rajasthan have not been getting enough credit.

PM Kisan scheme may continue for some years: Official

The Pradhan Mantri Kisan Samman Nidhi Yojana (PM-Kisan), which gives a farmer a sum of ₹6,000 per year in three equated instalments of ₹2000 each as input subsidy, may continue for some years, even though it was initially announced for only a year, according to a senior Agriculture Ministry official.

Enrolment of beneficiaries

Presenting interim budget in February this year, stand-in Finance Minister Piyush Goyal announced the scheme for small and marginal farmers in the country and this was subsequently extended by the Modi government, following the re-election, to all farmers in the country with some caveats.

Now, app for farmers to hire tractor, farm machinery

Farmers will now be able to hire farm machineries including tractors at an affordable price through an app based mobile application the way people hire Ola and Uber taxis over mobiles. The government, launched multilingual app based service - CHC Farm

Suggestions

An RBI working group on agricultural credit has given suggestions to improve the situation. It has recommended digitisation of land records, making it easy for banks to electronically access and create charges on the land. While the Centre started the computerisation of land records in 1988-89, many States including Arunachal Pradesh, Chandigarh, Jammu and Kashmir, Kerala, Manipur, Meghalaya, Mizoram and Nagaland have so far digitised only 50% of their records.

The panel further recommended building a legal framework for land leasing, so that tenant farmers, too, get to benefit from institutional credit. The panel also suggested that, to make it easier for banks to give credit for allied activities, the priority-sector lending guidelines should provide a separate definition for small, marginal farmers who want to borrow ₹2 lakh for allied activities.

Last week, talking at a conference where officials from State agricultural departments were present, PM Kisan CEO Vivek Aggarwal urged the States to increase the enrolment for the scheme because as many as 12 States and Union Territories have failed to cover even 50% of the eligible farmer population. Among the States that lag in enrolment are Madhya Pradesh which has enrolled only 49% farmers, Tamil Nadu (47%), Kerala (40%) and Bihar (26%). While there are 13.32 crore beneficiaries in the country according to agricultural census data, only 8.50 crore beneficiaries have been registered for the PM Kisan scheme till September 18.

Machinery for Custom Hiring Centres (CHCs). This service, will facilitate local farmers the use of shared resources including tractors and other farm machineries at affordable prices. Agriculture minister Narendra Singh Tomar, while launching the app, said



that farmers will now have easy access to high value and technical agricultural equipments at their doorsteps. "Through CHC farm machinery app, farmers can select and order the required machinery at the rates feasible for them from the Custom Hiring Centers located in the radius of 50 Kms," he said.

He said that till date more than 40,000 custom hiring service centers have registered on this mobile app for renting over 1,20,000 agricultural machineries and farm equipments.

The CHC Farm machinery app is already available to custom service providers for registration and uploading with geo-reference photographs of agricultural machinery custom service centers and photographs of machinery available in it. Through this app, farmers, especially small and marginal farmers, will have easy

access to high value and technical agricultural equipments which will facilitate optimum use of all types of inputs using these farming machines. This will not only increase the income of the farmers, but it will also take mechanization to maximum farm holdings in a short time frame. This app connects the farmers with Custom Hiring Service Centres in their area.

Tomar also launched another app Krishi Kisan, which will provide farmers the information of best demonstration of high-yielding crops and seeds in their nearby area. "Any farmer with high quality of crops can utilise this platform to demonstrate best practices of cultivation to other farmers so that this will help other farmers also to adopt these methods," he said. The app will also help in geo-tagging and geo-fencing of crop and give weather forecast message to farmers.

Nine states report decline in agriculture credit outstandings

As many as nine states have reported a decline in banks' credit outstanding to agriculture and allied activities during the financial year ended March 2019, despite a rise in the overall credit offtake to the sector across the country.

Though the overall agri credit outstanding rose from ₹13.69 lakh crore in March 2018 to ₹15.29 lakh crore in March 2019, it was largely boosted by a huge rise in credit flow of over ₹97,278 crore to Maharashtra which topped the list, according to figures provided by the RBI under the RTI Act.

According to the RBI figures, the agri credit outstanding of Uttar Pradesh — the largest populated state — declined to ₹91,628 crore in the year-ended March 2019 from ₹97,707 crore in the previous year. Karnataka's agri credit portfolio slumped to ₹78,517 crore as of March 2019 from ₹90,195 crore in the previous year. Punjab's agri credit outstanding fell to ₹66,766 crore from ₹72,020 crore in the previous year. Other states that recorded a decline in agri credit outstandings are Goa, Jharkhand, Mizoram, Nagaland, Sikkim, and Telangana, as well as the Union Territory of

Chandigarh.

Maharashtra's farm credit portfolio jumped to ₹426,649 crore from ₹329,371 crore in the previous fiscal. Uttarakhand also showed a big jump in farm outstandings to ₹23,703 crore from ₹9,476 crore a year ago.

The RBI said that SBI's farm credit portfolio was the largest with outstandings of ₹314,433 crore as of March 2019, followed by Punjab National Bank (₹81,500 crore) and Canara Bank (₹71,169 crore).

According to the RBI's Annual Report, credit growth to agriculture accelerated to 7.9% in March 2019 from 3.8% a year ago, driven by foodgrains and horticulture production.

The Centre has been fixing the target for agricultural credit every year. During 2018-19, the Government of India set the target of ₹ 11,00,000 crore for agricultural credit. As on March 31, 2019, commercial banks achieved 119.9% of their target whereas cooperative banks and regional rural banks (RRBs) achieved 93.26% and 105.78%, respectively.



Natural farming's time has come, seize the moment

Consumers, including in India, are increasingly looking for food and non-food agricultural products that are free of chemicals. There are versions of farming without chemicals: From Rudolf Steiner's Bio dynamic Agriculture, Masanobu Fukuoka's One Straw Revolution and Miguel Altieri's Agro-ecology, to the latest Subhash Palekar's Zero Budget Natural Farming (ZBNF). All have a common philosophy — farming based on using natural inputs, treating the soil as a living entity, promoting biological diversity and protecting the health of our ecosystem. These will, in turn, reflect on human well being and the food that we eat.

Palekar's ZBNF runs on four “wheels”: Jiwamrita (a microbial culture of dung and urine from indigenous cow species, jaggery, pulses flour, bund soil and water), Bijamrita (a seed treatment solution with almost the same ingredients), Mulching (covering the topsoil with dried leaves and straw for moisture conservation and proper aeration) and Waaphasa (providing water outside the plant's canopy). These four elements will ensure that the crop receives enough nutrients through the action of living microorganisms in the soil, in addition to the water, carbon dioxide, nitrogen and solar energy for photosynthesis that come “free” from the monsoon rains, air and sun. ZBNF also advocates insect and pest management through decoction sprays of Agniastra, Bramhasra and Neemastra, which are made using desi cow urine, tobacco and leaves/pulp of neem, datura, garlic, papaya and pomegranate.

Sikkim claims to have become India's first fully organic state. Andhra Pradesh has established Rythu Sadhikara Samstha, a not-for-profit company that aims at extending the reach of ZBNF to all six million farmers of the state by 2023-24. The ultimate endorsement for ZBNF has, of course, come from the Finance Minister Nirmala Sitharaman's 2019-20 budget speech and Prime Minister Narendra Modi's own address at the United Nations Convention to Combat Desertification

on September 9.

To start with, they should recognise that India is a vast country with many agro-climatic zones, crops and, within that, myriad varieties, some high yielding and some local cultivars. While our policy focus earlier was to increase production, the emphasis now should be on what is an optimal model for each of these zones, crops, varieties and even different classes of farmers. Equally important to note is that each model — be it natural farming or growing high-yielding varieties/hybrids responsive to application of chemical inputs — has prerequisites. The organic models, including SRI, are more fastidious and labour-intensive, as they work at restoring ecosystems.

Secondly, there should be no discrimination against natural farming through extension of subsidy only on chemical fertilisers. Let all farmers be entitled to a fixed sum of money per acre, which they can use either to buy chemical-based inputs or engage the extra labour required for organic agricultural operations.

Third, just as there are firms manufacturing fertilisers, crop protection chemicals and hybrid seeds, why not have enterprises that produce and sell organic inputs? This would make it viable for farmers to use these inputs directly, apart from helping create a new industry that will produce them in accordance with minimum quality standards. The government can further provide support to institutions providing training to farmers in organic agriculture, which is both labour as well as knowledge-intensive.

Finally, there can be no better time for a communication campaign targeting farmers and consumers on the benefits of organic. Remember what the National Egg Coordination Committee's 'Sunday hoyo Monday, roz khao ande' ad jingles in the nineties did for our poultry industry? When the national mood is slowly moving towards natural farming, it offers a perfect moment to launch a surgical strike.



IIHR develops 2 processable tomato hybrids

The Indian Institute of Horticultural Research has developed two tomato hybrids, exclusively meant for the processing industry. These hybrids – Arka Vishesh and Arka Apeksha – are disease-resistant and are expected to not only boost farmers' incomes through higher yields but are also aimed at reducing processing costs because of higher total soluble solids (TSS) and lycopene content. "It is for the first time tomato hybrids have been developed for the processing industry," said AT Sadashiva, who led a team of scientists at IIHR to work on these hybrids over a five-year period.

Higher yield potential

Farmers can be assured of a minimum 25% increase in yields at 50 tonnes per hectare, while the potential exists to harvest up to 100 tonnes per hectare under precision agriculture using drip irrigation, Sadashiva said. Existing hybrids give a minimum yield of 40 tonnes per hectare.

The total soluble solids (TSS) in the new IIHR tomato hybrids is at least 10% higher. Also, the lycopene content, the pigment that lends colour to tomatoes, is about 25-30% more than the existing hybrids. "The industry prefers higher TSS as it reduces their energy consumption," he said.

Agriculture exports: Counsellors appointed in 10 major destinations

The government has appointed agriculture counsellors in 10 countries, including the US and China, to boost India's agricultural exports, given the plan to double these to \$60 billion by 2022. These countries have been selected based on their current level of imports from India — all of them are among the top five destinations in one or more agri products under 37 categories identified for export push.

Vietnam, the US, UAE, Bangladesh, Nepal, Saudi Arabia, China, Iran, Malaysia and Japan are the destinations where one officer in Indian embassy will exclusively deal with promoting the country's agricultural exports. In 2018-19, UAE was among the top five buyers of India's agri products in 19 categories, according to data

Other advantages

Developed from existing lines, these varieties are also suitable for mechanised harvesting, said HS Oberoi, Head - Division of Post Harvest Technology and Engineering, IIHR. Some farmer producer companies such as Sahayadri FGC have planted the new IIHR hybrids on trial basis. IIHR is in talks with processors such as Bector Foods Specialities, Sun Sip and Jadli Foods among others to facilitate linkage with growers for promoting the new varieties.

India's tomato production is estimated at 19.39 million tonnes in 2018-19, marginally lower than 19.759 mt produced in 2017-18. More than 90% of the tomatoes produced in the country are consumed fresh.

Tomato processors normally procure and process the vegetable during the peak season during January-March, when prices are low. The processed tomato, which is converted and stored in the form of paste is used as a base for products such as ketchup and sauces. About 7 kg of tomato is required to produce 1 kg of tomato paste.

As per industry sources, India requires about 1.2 lakh tonnes of tomato paste of which about 70,000 tonnes is manufactured locally and the rest imported, mainly from China.

maintained by the Agricultural and Processed Food Products Export Development Authority (Apeda).

Vietnam was India's top export destination in buffalo meat having over 47% share in the country's total export of this product valued at \$3.6 billion in 2018-19. It was also one of the top buyers in groundnut, maize and poultry products. Similarly, the US was among top five countries in India's exports of floriculture, cucumber and gherkins, guar gum, honey, cocoa products, fruits and vegetable seeds, walnut, processed fruits, juices and nuts, pulses, jaggery and confectionery and mango.

China is the second biggest country to buy Indian guar gum, after the US. In other products, China's



current share is not that much, but an agriculture counsellor in Beijing will help India to expand the market there, officials said.

India's agriculture products exports (37 categories under Apeda) were \$18.7 billion in 2018-19, same as in the previous year. After high-growth in the previous years, the export growth has fallen in recent years.

According to the Agriculture Export Policy, 2018,

Satellite imagery, artificial intelligence to improve farm yields in Maharashtra

Launched in January this year, the Maha Agri Tech project seeks to use technology to address various cultivation risks ranging from poor rains to pest attacks, accurately predict crop-wise and area-wise yield and eventually to use this data to inform policy decisions including pricing, warehousing and crop insurance. When farmers in six districts of Maharashtra begin sowing for the coming rabi season, this project will enter its second phase where artificial intelligence and satellite imagery will be used to mitigate risks. Fields of the farmers that are part of the project will be monitored via satellite images at every stage right until the harvest.

In its first phase the Maha Agri Tech project used satellite images and analysis from the Maharashtra Remote Sensing Application Centre (MRSAC) and the National Remote Sensing Centre (NRSC) in Hyderabad to assess the acreage and the conditions of select crops in select talukas. In its second phase, various data sets from diverse data providers will be combined to build yield modelling and a geospatial database of soil nutrients, rainfall, moisture stress and other parameters to facilitate location-specific advisories to farmers.

Working on the coming rabi season simultaneously are the MRSAC and the NRSC that have expertise in analysis of satellite imagery, as well as other agencies providing diverse kinds of data, such as Mahavedh (decentralised rainfall data from over 2,000 automated weather stations), Groundwater Survey Development Agency, CROPSAP (the agriculture

approved by the Cabinet last year, the government's initial target is to double the shipments to \$60 billion by 2022 and take it further to \$100 billion in the next few years with a stable trade policy regime. After that, the Ashok Dalwai committee on doubling of farmers' income had recommended "an aggressive strategy for developing international agricultural trade with the aim to achieve the target."

department's 2011 project for crops and pest surveillance), etc.

How technology use helps farming

The use of satellite images, drones, and machine learning can plug some of the productivity gaps by enabling both farmers and policymakers to plan better. Meanwhile, Cropin, a Bengaluru-based agri-tech firm that provides artificial intelligence and machine learning-based solutions in the agriculture sector, will conduct a pilot in six districts of Marathwada and Vidarbha where their AI and machine-learning based platform will first create an inventory of farmers, their farm and crops sown during the coming rabi season. They will use geofencing to identify perimeters of individual farmers' holdings, which means individual farm-specific data will be collected and analysed. In the 2020 kharif season, the digital platform will be able to provide intelligence in the form of advisories regarding farm-specific crop yields, anticipated risks, etc.

Cropin, which has been in the agri tech industry for nine years, says it has worked with close to 2.1 million farmers across 46 countries and 5.5 million hectares of farm land, analysing 3,500 varieties of 365 crops, all this experience accumulating trillions of datasets that the company uses to inform its artificial intelligence and machine learning platforms. Other indices that Cropin has developed include chlorophyll index, evapotranspiration index, etc. Combined with information such as the time of the year, weather, moisture stress, etc., it is possible to develop farm-specific intelligence on acreage, health and yield.



Then, agglomerating data from individual geofenced farms, it will be possible to generate regional or taluka-specific or village-specific advisories too. Using algorithms to study vegetation or moisture and other indices periodically, water budgeting models can also be built in the next stage.

“The concept is to tie up with various agencies to build a single digital platform for farmers and the

Better irrigation, sweeter grapes make this farmer stand out

When this year's water crisis hit several states including Maharashtra, the paucity of water did not affect the grape farms spread across Vadner Bahirav village of Chandwad taluka in Nashik. For over a decade, 37-year-old grape farmer Bapu Bhausahab Salunke has been perfecting the application of water conservation techniques. With his success, including an increase in the yield of grapes, his friends, relatives and neighbours have followed suit, making Vadner Bahirav a high yielding grape village.

On September 25, Salunke received the first prize for “Increasing water use efficiency by an individual” from Jal Shakti Minister Gajendra Singh Shekhawat at India's first Water Awards in New Delhi.

About 15 years ago, Salunke heard of a farmer's training programme at Maharashtra's Water and Land Management Institute at Aurangabad. He enrolled in the 5-day training programme, came back to his village and used the family's savings, ₹6 lakhs, to build a one-acre watershed pond on his farm. That year, the water accumulated in the pond during the monsoons was

ITC to develop value chain for chilli growers in Andhra Pradesh

The Agri Business Division of ITC Ltd has joined hands with the Andhra Pradesh government for improving farm value chain for chillies under public-private partnership mode covering Krishna, Guntur, Prakasam and Kurnool districts of the southern state. The collaboration will focus on developing an integrated agri extension platform for chilli value chain development, covering 10,000 acre in the first phase and another 100,000 acre in the near future. This project will enable

government,” said state Agriculture Commissioner Suhas Diwase. He said a GIS-based platform using algorithms and data analytics based on the satellite imagery will help monitor farmland during drought-like conditions too. “Phase One of Maha Agri Tech is done. In Phase Two, we are expanding the scope and also validating ground truths to verify data.”

used to irrigate a larger swathe of land. The year after, Salunke built another half-acre watershed, and then a deep well and installed two borewells. And then he started micro-irrigation methods to grow grapes.

Since then, Salunke's farm no longer grows any other vegetables and uses the entire 20 acres to grow grapes. He points out that at least 100 farmers, from his village as well as neighbouring ones, have now built similar watersheds on their farms, and grow grapes through out the year.

Salunke's teacher, B M Shete, who was in charge of the farmers training programme at the Aurangabad Institute, said that over a lakh farmers have been trained there in water management since the 1990s.

Micro-irrigation, explained Shete, doesn't only ensure that the yield of grapes increases but also improves their quality. “It determines things like the sugar content of the grapes, ensuring that the grapes grown in Nashik meet international standards and can, therefore, be exported”.

chilli farmers in the state to improve farm productivity, meet global quality standards and manage the rising production costs. This also aims to increase net income and address agricultural sustainability issues in an efficient manner.

According to Chiranjiv Choudary, commissioner of horticulture department of the state, an agreement has been signed to increase chilli farmer's profitability, with the technical support from ITC. Chilli quality can



be improved by adopting various good agricultural practices in the value chain from seed selection to marketing. This aims to enable the exportability of chilli crop and thus improve farmer returns.

The platform will benefit 40,000 farmers in Prakasam, Krishna, Guntur and Kurnool, with about 10,000 acre under the crop. Andhra Pradesh is one of the top producers of chilli in the country of about 9,92,900tonne and there is a big opportunity to make it a global sourcing centre for the finest safe chillies. However, export is only about 17,500 tonne, which accounts for only 1.8% of the total production, with a

Telangana tops in capex on irrigation during 2015-19: Study

Telangana stands seventh among the top 10 States in terms of expenditure incurred on capital outlay/asset creation (capex) by State governments during 2015-2019. However, in total capex on irrigation it is ahead of all other States in the country. According to a study by CARE Ratings, Telangana comes after Uttar Pradesh, Maharashtra, Karnataka, Bihar, Gujarat and Madhya Pradesh on overall capex followed by Tamil Nadu, West Bengal and Odisha.

The top 10 States in the country accounted for 73% of the combined capex undertaken by all States. Telangana's share in the combined capex has increased by 2% during the period. At the consolidated level, the expenditure was more towards transport, irrigation, flood control, energy, water supply, sanitation and rural development.

Tamil Nadu enacts contract law to benefit small farmers

The Tamil Nadu government has enacted a separate law on contract farming, which will not only encourage small farmers to join hands together but also protect the farming community, particularly marginal farmers, from any untoward challenges as well ensure fair price even in case of excess supply into the markets. Claimed to be the first state in India to enact a law on the lines of Union government, the Tamil Nadu Agricultural Produce and Livestock Contract Farming and Services

big opportunity for exports.

The proposed platform comprises four key components which include deployment of skilled agri extension resources at each village, an e-Choupal digital platform, a digital engagement centre (call centre) and a Chilli Pradarshan Kendra (CPK).

ITC has deployed skilled, digitally-enabled agri extension staff in the project villages. Chilli farmers have been provided access to the e-Choupal 4.0 mobile app. They can also talk to experts through the call centre.

While Telangana leads in irrigation, Tamil Nadu spent highest on urban development while Bihar focussed on rural development. Uttar Pradesh emerged as one of the largest spenders in the areas of transport, energy, public health, education and housing while Maharashtra incurred highest expenditure on agriculture.

In terms of annual increase, capital expenditure of States in absolute terms at the consolidated level witnessed an increase in case in four out of the last five years. In FY18, it declined by 2% over previous year.

The State Government's role in undertaking expenditure towards asset creation has become increasingly important in the recent years considering that States' share accounts for two-third of general government capital expenditure.

(Promotion and Facilitation Bill), 2019, has received the President's approval and accordingly, the state government has published a gazette in this regard.

Contract farming is one of the strong tools to pool in small farmers into a collective operational unit to not only get better price but also achieve scale of economy. The bill will make contract farming more transparent, easier and successful and shall have the powers of a civil court in specified areas.



As per this law, the buyers/sponsors who have entered into an agreement with the farmers/farming community will have to register themselves with the local agricultural commissioners and also should register the documents they have entered into with the farmers/farming community before pre-cultivation time. It helps farmers/farming community from selling at distress price owing to excess supply or any untoward

Sirsiagri co-op launches organic fertilizer product

The Totagars' Cooperative Sale Society (TSS) Ltd at Sirsi in Uttara Kannada district has launched a new organic fertilizer product in the market. 'TSS Annapurna', the second organic fertilizer product from the cooperative, is an oil cake-based fertilizer. It is being marketed by TSS under its own brand.

'TSS Annapurna' helps in the growth of Trichoderma, he said, adding that it is suitable for arecanut, pepper and banana plantations. The 96-year-old cooperative has around 30,000 members. The product is being marketed in 30-kg bags. TSS is planning to market around 25,000 bags of 'TSS Annapurna' this year, as the farmers need to get adjusted to this new product. He said the cooperative is targeting to market around 75,000 bags from the next financial year.

When a jacktree farm turned a sleepy village into agro hub

There's no 'offseason' for farmer Varghese Tharakan's barely three-year-old jacktree farm. His trees bear fruit at least twice a year. Jack trees in Asia normally have three to four month seasons starting March or April depending on the region. The Ayurjack variety he has developed, alongside soil and water conservation practices on his farm, has drawn the attention of researchers too, with Australia's Adelaide University studying the cultivation model he has developed.

Word of his farm has also made Kurumal Kunnu, once a small hamlet in Perur, 16 km from Thrissur in central Kerala, a centre of attraction. It draws hordes eager to learn about Ayurjack that yields fruit through the year. Tharakan turned to farming around 2005 and started

challenges, the release said.

The bill also ensures farmers with a safeguard law to get their actual price when the buyers or food processing company/companies violate their agreements entered into with them. Committees will be set up to sort out issues, arising out of violation, at the district as well state level, the release said further.

Hegde said TSS started marketing organic fertilizers under its own brand in 2015-16 with the launch of 'TSS Green Gold'. Sugarcane pressmud is the base for 'TSS Green Gold'. Pressmud is a by-product of sugar industry, and it is obtained after processing the sugarcane in the factories, he said. Stating that 'TSS Green Gold' is being marketed in 50-kg bags, he said the cooperative sold around 1 lakh bags of this product in 2018-19.

Apart from this, TSS also markets a chemical fertilizer – 'TSS Krishi Mitra' – under its own brand name. This granulated fertilizer mixture has NPK in the ratio of 14:06:21, he said, adding that around 20,000 bags of this fertilizer is being marketed by the cooperative.

TSS Ltd deals in the procurement and marketing of agri products such as arecanut and pepper.

his experiments with the jacktree just about a decade ago. It all began when a jackfruit tree in the backyard of his in-laws' home was about to face the axe for road widening. Tharakan decided to propagate and develop the variety. "I named it Ayurjack. To my surprise, the new trees started yielding in just two years and that too twice a year like the parent tree." His farm flourished.

Down the years, he received several awards for his farm techniques. Dr Arul Arasan, agricultural scientist and member of the Kerala committee that awarded him the 2018 'ShonyMitra' for soil and water conservation, said, "Tharakan's crusade for soil conservation is commendable. Jacktree is ideal for soil and water



conservation. Tharakan is a pioneer in this field. It is noteworthy he felled rubber trees to grow a native tree species." Tharakan, though, does not sell the jackfruits. He only sells the saplings. His main source of revenue is from the sale of saplings, which he started a year ago. "I charge ₹ 500 for a 6-month-old sapling and ₹250 for a 3-month-old one," he said. Asked why he chose jackfruit to script his agricultural wonder, he said, "Unlike many other fruits, the jackfruit has 25 medicinal benefits. It is good for even diabetics and the fruit is indigenous, native to the Western Ghats." Jacktrees are counted among trees that contribute significantly to oxygen levels. "Going by price of oxygen cylinders in the market, a jacktree releases ₹100 crore worth of oxygen a year," is Tharakan's assertion.

He received Kerala's first Water Congress award in 2015, and the Dr. Ambedkar National Excellence Award for water management. He was shortlisted for UN's Water Air Food Award. "I tapped as much as 6 crore litres of rainwater annually from five acres. I use

less than 5% for irrigation. The balance is contribution to nature," he said.

By 2013, through extensive trenching and channelling, Tharakan had completely stopped rainwater run-off from his plot though it is a terraced property with steep slopes. The rainwater yield not only keeps his wells charged through the year, but also recharges the underground aquifer. This provides drinking water to 35 houses nearby that struggled for water during summer. The Netherlands had funded a borewell project in the village in 1995 and the London School of Economics carried out a study on participatory irrigation management project. But by 2012, the borewell had gone dry. "I can claim today that where the Netherlands failed, I succeeded through rainwater harvesting," he said.

In the last three years, Tharakan has raised 9 lakh saplings and grown 1,000 jacktrees. The other thing that keeps him busy: trying to solve the puzzle whether jackfruit is fruit or flower.

TNAU to conduct trials on sugar beet

Tamil Nadu Agricultural University (TNAU) has decided to undertake experimental trials on sugar beet at six of its research stations: Melalathur, Cuddalore, Sirugamani and Vaigai Dam besides its campuses in Coimbatore and Madurai during this Rabi season (starting November-December).

The effort is aimed at evaluating and adjudging the crop performance as an alternative to sugarcane, said N Kumar, Vice Chancellor, TNAU.

Speaking on the sidelines of a 'National Conference on Sugar Cane – Is there any alternative?' organised jointly by the National Rainfed Authority of India, New Delhi and Global Agri System Private Ltd (GAPL), Kumar said: "Cane production has come under attack due to water and labour shortage on the one hand, (long) crop duration and poor returns for the farmer, on the other, forcing research institutions such as TNAU to find an alternative.

"Sugar beet is a four-and-a-half-month crop, is less

water intensive and cost effective. We did research on sugar beet between 2005 and 2015 and documented the performance of a few hybrids. Our average production ranged between 35 and 40 tonnes/hectare. "With Belgium-based Ses Vander Have developing varieties suitable for tropical conditions and offering to supply seeds of 6 to 7 varieties of sugar beet for free, we plan to test and evaluate the performance in the six locations on a trial basis, without further delay," Kumar said.

Gokul Pattnaik, Chairman, GAPL, said there was surplus surplus sugarcane production in the country, necessitating the need for rationalising the production besides promoting alternative crops such as sugar beet, which has great potential for sugar production and bio-fuel.

Shivajirao Deshmukh, Director-General, Vasanthdada Sugar Institute, Pune, said that sugar beet was being raised on about 300 acres in Maharashtra.



Better agri data to help tackle climate change challenges: Bill Gates

Better statistical information and innovative tools will help minimise the damage of climate change on the farm sector, billionaire philanthropist and Microsoft co-founder Bill Gates said. As the effects of climate change on smallholder farmers will increase in future, there is an opportunity for engaging with the private sector in the field of agriculture and play an important role in boosting the crop yields, he said.

"At a time when we have to increase productivity, climate change is making it far difficult. Understanding how the changing weather is affecting our crops and productivity and how we can adapt to that -- requires best work in agriculture statistics including use of new tools," Gates said in his keynote address at the 8th global conference on agri-statistics here.

Referring to India's soil health card, he said the soil quality data helps farmers determine what fertilisers to use. However, there are opportunities to add additional data to the existing one and make a detailed soil mapping. "Better soil, better information and better statistics will help minimise the damage of climate change," he added.

Gates, who is also co-chair in the Bill & Melinda Gates

Foundation, further said since the issue of climate change is "complicated", different interventions are required to be taken including developing new variety of seeds and their distribution to farmers. There is an opportunity to engage with the private sector in agriculture, as there is a need to make available the innovative models and products to the farmers for tackling the challenge of climate change, he added.

Inaugurating the event, Agriculture Minister Narendra Singh Tomar said, "India is an agriculture-based economy. The government depends on data for policy making." He also said the subject of statistics and probabilistic ideas seem to be of ancient origin in India. The treatise Arthashastra by Kautilya during the Mauryan period had a detailed description of the system of data collection related to agricultural, population and economic censuses in villages and towns during the period, he said.

A four-day global conference is being organised by the agriculture ministry in partnership with the United Nation's FAO, the US Department of Agriculture, the World Bank, the Bill & Melinda Gates Foundation and other agencies.

Sahyadri FPO introduces ARRA-32 grape variety

Nashik-based Sahyadri Farmers' Producer Company has introduced ARRA-32 grape variety to farmers. Sahyadri has successfully cultivated it on three hectares after field trials of previously imported patented ARRA variety. It plans to increase the area under cultivation up to 3,000 hectares. ARRA grapes in California are famous for surviving adverse weather conditions and have a sweet taste. Seedlings were brought by the Sahyadri on Tuesday. After the successful production of ARRA-15 imported by Sahyadri, ARRA-32 is next in line.

World-class varieties such as ARRA have been found to produce reliable and quality products, even in adverse

weather conditions. Against this backdrop, Sahyadri has tried to provide comfort to the growers by importing these varieties," the press statement from the company added.

ARRA varieties are grown in 24 countries in six continents. India is now included in the list. "India's grape growing farmers are getting benefits from the ARRA varieties to further consolidate their position in the global market. These patented ARRA table grapes are exportable varieties of white, red and black colour." Sahyadri is one of the leading farmers' producer companies in India with 8,000 marginal farmers as its members.



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- Money at Call & Short Notice :
- Net Profit :
- Working Capital :

(₹ in Lakhs)
As on 31.03.2017

₹ 12417.30
₹ 225999.66
₹ 106792.85
₹ 74979.89
₹ 58873.13
₹ 807.25
₹ 270157.95

(₹ in Lakhs)
As on 31.03.2018

₹ 13059.65
₹ 245979.01
₹ 117302.21
₹ 82195.54
₹ 63298.24
₹ 944.95
₹ 295116.68

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