

YEAR 2018

THE RISE OF FARMER POWER

The year 2018 was an important year for the agriculture sector for many reasons. It exactly pointed out, where we were the weakest. It avidly pointed to the flaws of the country's production system and how unprepared we were to respond to market dynamics. Although doubling farmers' income remained fresh in discussions and dialogues, no palpable change was brought to the lives of the farmers. They have for most part of the year, constantly reminded the power centers their displeasure with regard to the non-remunerative nature of farming. Although MSP increments and export policies were introduced, their effects haven't so far resonated in the mainstream. The results of the recently concluded elections in the states of Rajasthan, MP and Chhattisgarh rode heavily on the sentiments of the farmers. Farmers, thus have emerged as a strong collective force in 2018 and hence will play a significant role in shaping the country's next government.



AGRICULTURE PRODUCTION CHART

India, in the past years, has witnessed commendable progress in food grain production. The passing year was also not any different. India's foodgrain production during the rain-fed kharif season is estimated at a record 141.6 million tonnes in 2018-19. The first advance estimate of crop production issued by the agriculture ministry placed the output of foodgrains at 11.9 million tonnes higher than the average production of 129.7 million tonnes between 2012-17. However, foodgrain production in 2018-19—which includes rice, pulses and coarse grains—is just 0.6% more than the previous record of 140.7 million tonnes in kharif 2017-18. The 2018-19 kharif season will thus mark the third consecutive year of record food production since 2016-17.

According to the latest estimates, sugarcane production is estimated at 383.9 million tonnes in 2018-19, about 2% more than last year. Production of rice, the main kharif crop, is likely to increase 1.8% to 99.2 million tonnes in 2018-19. Farmers, however, are likely to harvest a

marginally lower volume of pulses—9.2 million tonnes in kharif 2018-19, compared to 9.34 million tonnes last year.

Among non-foodgrains, production of kharif oilseeds are estimated to rise 5.7% to 22.2 million tonnes in 2018-19, from 21 million tonnes last year. Production of cotton is likely to fall by 7% from 35 million bales in (one bale equals 170kg) last kharif to 32.5 million bales this year, the estimates showed.

In terms of horticulture production too, India has registered impressive records. Horticulture production was pegged at 306.82 million tonnes (mt), up 2.05 per cent up from the previous year's 300.64 mt, according to the third advance estimates of horticultural production. The production of fruits is expected to cross 97 mt, thanks to an impressive increase in the output of many fruits, particularly mangoes, which registered 9 per cent growth.

Production of vegetables, on the other hand, is projected to be close to 180 mt, marginally up from 2016-17. A slight slide is expected in the yield of major vegetables such as potatoes,



“The global agri-food system is facing major global changes: rapid urbanization and rising middle income populations; changing diets; climate change; anti-global sentiments; and advances in technology in and out of agriculture, among other large-scale trends. Urbanization will continue to increase market demand for agricultural products, especially in Asia and Africa, where most of the urban population rise is expected to occur. To be able to respond to the rising demand and emerging trends, the farm mechanization sector and the global agri-food system as a whole will need to harness innovations for human and planetary health. In particular, innovations in multiple-win, yield-enhancing technologies – such as crop sensing and improved, climate-resilient varieties – will play a crucial role in meeting food demand in an environmentally sustainable manner. Equally important will be complementary technologies, including information communication technologies (ICTs) and big data, which can facilitate information dissemination and knowledge sharing for innovative farm mechanization. Further, effective policies and institutional governance will be key to supporting the agri-food system. Continued comprehensive, high-quality research is critical in this regard for a healthy and sustainable food future”.



SHENGEN FAN
Director General (IFPRI)

onions and tomatoes. The total area under horticulture crops was also up by 3.26 per cent at 25.66 million hectares (mha) from 24.85 mha in 2016-17.

At 48.5 mt, potato production is projected to be slightly lower than 48.61 mt in 2016-17, whereas a slump is expected in the output of onions, which is down 1.8 per cent at 22 mt. The highest decrease in production among major vegetable crops, however, was witnessed in tomato, with output projected to drop by 6.6 per cent to 19.4 mt. Brinjal production is expected to be marginally up at 12.83 mt from 12.51 mt in 2016-17.

Among fruits, citrus fruits output is expected to rise strongly to 9.6 per cent at 12.51 mt (11.42 mt). The production of mangoes is projected to grow 9 per cent to 21.25 mt. As is the case with banana production, which is expected to go up to 31 mt from 30.5 mt in 2016-17.

An impressive 10 per cent increase in dried chilli production to 2.3 mt from 2.09 mt in 2016-17 may help push up the total spices output to 8.37 mt from 8.12 in the year before. On the other hand, a slight dip is anticipated in the plantation crop output to 17.87 mt from the previous year's 17.97 mt, the estimates showed. This is mainly on account of a drop in coconut

production, which is slated to fall to 16.23 mt from 16.49 mt.

India's coffee production is likely to drop by 20 per cent in the new marketing year starting October 2018 to around 2,53,000 tonnes because of severe floods in parts of Karnataka and Kerala. The country is estimated to have harvested 3,16,000 tonnes of coffee in the 2017-18 marketing year (October-September). The industry is estimating coffee production in 2018-19 is likely to fall by at least one-fifth due to floods. Karnataka and Kerala account for 90 per cent of the country's coffee production. As per the government's assessment, coffee crop has been damaged in 2.26 lakh hectares due to heavy

rains, and losses are estimated to have been to the tune of Rs 654 crore. The heavy rains lashed during August 8-20 had triggered flash floods and landslides in multiple locations in coffee-growing districts of Kodagu and Hassan, as well as in Kerala. In the current 2017-18 marketing year, Karnataka is estimated to have harvested 2,22,300 tonnes of coffee and Kerala 65,735 tonnes.

Rubber also suffered a backlash owing to the floods in Kerala. From the expected 700,000 tonnes of rubber production during the 2018-19 financial year, the production is likely to come down to 600,000 tonnes in the current fiscal due to the floods. Spices have also borne



the brunt of Kerala floods. The state suffered a production loss of more than 25,000 tonnes of spices, valued at Rs. 1,254 crore in the devastating floods that wiped out 58,379 hectares of agricultural land, according to a study carried out by the Indian Institute of Spices Research (IISR). The State cultivates 1,62,660 hectares of spices with an annual production of 1,40,000 tonnes.

Milk production on the other end has witnessed an uptrend. Milk production was reported at 165.4 million tonnes during 2016-17 and is estimated to be 176.35 million tonnes during 2017-18. The trend is expected to continue as the projected milk production by 2021-22 is 254.5 million tonnes as per the vision 2022 document.

Total agricultural exports from India grew at a CAGR of 16.45 per cent over FY10-18 to reach US\$ 38.21 billion in FY18. In April-May 2018 agriculture exports were US\$ 6.43 billion. India is the largest producer, consumer and exporter of spices and spice products. Spice exports from India reached US\$ 3.1 billion in 2017-18. Tea exports from India reached a 36 year high of 240.68 million kgs in CY 2017 while coffee exports reached record 395,000 tonnes in 2017-18.

BUDGET PERKS

This year's budget held a special import as it was widely expected to accommodate measures to woo farmers, an important electorate, before the Assembly polls. As expected, the budget played along the expected tune.

Union Budget 2018 was predominantly an agriculture budget with a slew of measures engendering farmers' welfare and agriculture development. This year too, the Government increased the volume of institutional credit for agriculture sector from Rs.10 lakh crore in 2017-18 to Rs. 11 lakh crore for the year 2018-19.

A significant announcement,



however, came with regard to the MSP of Kharif crops. The budget proposed to keep MSP for the all unannounced crops of kharif at least at one and half times of their production cost. Although initially, the MSP hike was thought to be in consonance with MS Swaminathan formula, later it was revealed that the new MSP was based on the A2 + FL costs, and not the more ambitious C2 costs formula favoured by MS Swaminathan.

With regard to the e NAM, FM informed that 470 APMCs have been connected to e-NAM network and rest will be connected by March, 2018. The existing 22,000 rural haats would be upgraded and developed into Gramin Agricultural Markets (GrAMs). In these GrAMs, physical infrastructure will be strengthened using MGNREGA and other Government Schemes and they would be electronically linked to e-NAM and exempted from regulations of APMCs. An Agri-Market Infrastructure Fund with a corpus of Rs. 2000 crore would be set up for developing and upgrading agricultural marketing infrastructure in the 22000 Grameen Agricultural Markets (GrAMs) and 585 APMCs.

Cluster based development of agri-commodities and regions in partnership with the Ministries of Food Processing, Commerce and other allied Ministries was

recommended to be promoted in the budget. Similarly, organic farming by Farmer Producer Organizations (FPOs) and Village Producers' Organizations (VPOs) in large clusters, preferably of 1000 hectares each, was also emphasized. Women Self Help Groups (SHGs) will also be encouraged to take up organic agriculture in clusters under National Rural Livelihood Programme. A sum of Rs. 200 crore was allocated for organized cultivation and associated industry.

For the food processing sector, the budget doubled the allocation from Rs. 715 crore in 2017-18 to Rs.1400 crore in 2018-19. "Operation Greens" on the lines of "Operation Flood" was also introduced through this budget. "Operation Greens" would promote Farmer Producers Organizations (FPOs), agri-logistics, processing facilities and professional management and a sum of Rs. 500 crore was allocated for the same.

Proposals to liberalize export of agri-commodities and state-of-the-art testing facilities in all the forty two Mega Food Parks was also given thrust in the budget. A Restructured National Bamboo Mission with an outlay of Rs. 1290 crore to promote bamboo sector in a holistic manner was also proposed. Scope of the Long Term Irrigation Fund (LTIF) in NABARD was also expanded

FALL ARMYWORM ATTACK

The 'fall armyworm', cited by global agencies as an international food-security threat, was spotted in Karnataka's maize pockets for the first time, prompting a nationwide alert. The pest has spread to Tamil Nadu and has entered Telangana. Feared as a threat to food security of millions, FAO, has warned in June that 300 million Africans could face hunger because of it. The pest was first detected two years ago in Africa and has since spread to more than 30 countries, devastating corn potentially worth \$5 billion. What makes the pest dangerous is the rates at which the pest multiplies and its capacity to fly over long distances (100 km per night) and ravage crops all year round given the region's favourable tropical and sub-tropical climate, which means there are always crops and weeds around that Fall Armyworm can feed on. Fall Armyworm can eat maize and some 80 other crops, including rice, vegetables.



to cover specified command area development projects.

A Fisheries and Aquaculture Infrastructure Development Fund (FAIDF) for fisheries sector and an Animal Husbandry Infrastructure Development Fund (AHIDF) for financing infrastructure requirement of animal husbandry sector with a total Corpus of Rs.10,000 crore was also proposed in the budget.

A suitable mechanism to enable access of lessee cultivators to credit without compromising the rights of the land owners was also put in place. It was also decided to extend a favourable taxation treatment to Farmer Producers Organisations (FPOs) for helping farmers aggregate their needs of inputs, farm services, processing and sale operations. Addressing the air pollution in the Delhi-NCR region, a special Scheme was also implemented to support the efforts of the governments of Haryana, Punjab, Uttar Pradesh and the NCT of Delhi to address air pollution and to subsidize machinery required for in-situ management of crop residue.

Ground water irrigation scheme under Prime Minister Krishi Sinchai Yojna - Har Khet ko Pani would be taken up in 96 deprived irrigation districts where less than 30% of the



land holdings gets assured irrigation presently for which Rs. 2600 crore was allocated.

Union Budget 2018 also focused on providing maximum livelihood opportunities in the rural areas by spending more on livelihood, agriculture and allied activities and construction of rural infrastructure. In the year 2018-19, for creation of livelihood and infrastructure in rural areas, total amount to be spent by the Ministries was earmarked at Rs. 14.34 lakh crore, including extra-budgetary and non-budgetary resources of Rs.11.98 lakh crore. Apart from employment

due to farming activities and self employment, this expenditure is expected to create employment of 321 crore person days, 3.17 lakh kilometers of rural roads, 51 lakh new rural houses, 1.88 crore toilets, and provide 1.75 crore new household electric connections besides boosting agricultural growth.

YEAR OF FARMERS' DISTRESS

The year 2018 would carry the unusual burden of being known as the year of farmers' unrest. The year was periodically punctuated by massive outbursts in the form of

CONVERTING CALAMITY INTO AN OPPORTUNITY

2018 is ending with several unfortunate unfavourable climatic events. Kerala experienced unprecedented floods; Odisha was affected by a severe cyclone; Tamil Nadu experienced highly damaging cyclone Gaja. It is clear that if we continue to ignore the consequences of human induced climate change, there will be increasing hardships, particularly to the economically and ecologically underprivileged sections of our society. The important factors which we will have to look into are first temperature changes, second floods and heavy rains, third rise in sea level requiring alternate accommodation to millions of coastal families who become climate refugees, and finally economic chaos arising from harm to agriculture. Therefore, proactive climate impact management strategy is an idea whose time has come.

Mangroves and mitigation of cyclone impact

There are several reports in the media about the bioshield function of mangrove forests along coastal areas. Mangroves have helped to save both lives and livelihoods, particularly of fishing and coastal communities. The beneficial impact of mangroves has been observed by local community on several occasions including the recent Gaja cyclone in Tamil Nadu. Earlier, the damage caused by Tsunami as well as the super cyclone in Odisha were also considerably less in mangrove rich areas. It is in recognition of the critical role of mangroves in the conservation of coastal ecosystems that the famous temple at Chidambaram chose a mangrove plant (*Excoecaria agallocha*) as a Temple Tree.

When MSSRF was started in 1989-90, the mangrove ecosystem at Pichavaram was taken up for priority attention. Both in the Philippines, where I lived for a few years and in India, the general appreciation of the role mangroves play in both ecological and livelihood security has been little. Mangrove areas were being converted into aquaculture farms and tourists centres. This is why we started a genetic garden of mangroves at Pichavaram near Chidambaram with support from Department of Biotechnology. Considerable amount of work has been done to promote public understanding of the need for protecting the mangrove forests and extending

them to all coastal areas. A Charter for Mangroves was prepared and with the help of the Government of Japan and IITO, an International Society for Mangrove Ecosystems (ISME) was formed in 1990. It is only when natural calamities of the kind induced by cyclones occur that there is more awareness of the need to protect and propagate them. I hope the calamity caused by Gaja can be converted into an opportunity for saving coastal wetlands and more particularly mangroves.



Dr. MS Swaminathan

Climate change and sustainable development

The latest report of IPCC has warned about the consequences of allowing mean temperature to rise above 1.5 °C. In 1990, I had pointed out that even a 1 °C rise in mean temperature could cause a reduction of about 400 kilograms of grains per hectare in wheat in North India. The reason is the reduction in duration caused by higher mean temperature. In contrast, an increase in mean temperature will confer benefits to the farmers of northern latitudes because this will lead to an increase in the length of the duration of the crop. South Asia and sub Saharan Africa will be the area's most adversely affected. Therefore we have to take proactive steps to prepare ourselves to manage temperature rise. An immediate step should be breeding of crop varieties characterised by higher per day productivity rather than per crop productivity as being done now. Climate smart nutri-cereals (millets) will have to be promoted. Climate management is both a science and an art. We will have to marry traditional wisdom with modern science if we are to insulate our crops from the adverse impact of higher mean temperature. There should also be increased effort in developing cropping systems which are climate smart and nutrition rich. Climate risk management centers will have to be established in every panchayat. If these steps are not taken, food and nutrition security will be impacted adversely.

I am glad this year's Special Issue of Agriculture Today is highlighting the role of climate risk management in ensuring sustainable food and nutrition security.



strikes and marches reverberating the unhappiness of the farmers and their general displeasure of the state of affairs.

The streets of Mumbai bled on March 4, 2018. A sea of farmers dressed in red scaled a 180 km stretch in the blazing sun over six days on their bare foot from Nashik and brought the country's financial capital to a standstill. The farmer contingent, including tribal cultivators, led by the Left-affiliated All India Kisan Sabha (AIKS), had a handful of demands - A complete waiver of farm loans, remunerative prices for crops, pensions for agricultural labour, recommendations by M.S. Swaminathan Commission on minimum support price and the Forest Right Act, besides relief from economic losses sustained due to implementation of demonetisation in late 2016. The Chief Minister responding to the situation accepted most of their major demands such as expanding the list of those eligible for the farm-loan waiver announced in 2017, increased pensions to agricultural workers from Rs.500 to Rs.1,000 per month and transfer of land titles under the Forest Rights Act.

On the anniversary of the Manadsaur killing on June 6, India saw another major farmer uprising,

'Gaon Bandh' encompassing 22 states. The villages were shut down and the country saw cultivators deserting markets in urban areas and truckloads of vegetables and milk being emptied on the streets. The demands that were laid down by the farmers included waiving the entire loans of farmers, pension to farmers older than 55 years and Minimum Support Price (MSP) on 65 litres of milk, fruits and vegetables. All of these demands had income stability as the common denominator. Another dimension to this protest was the impact they had on the urban centers. The agitation affected not only the availability of these perishables but also a steep increase in their prices. The agitation caused vegetable prices to spike by 10-15 per cent in a handful of cities in North India, Maharashtra and Madhya Pradesh - jumping 20-30 per cent in certain pockets in Jaipur and Indore - with supplies to the National Capital Region profoundly hit.

Despite the consumer woes, farmers have also incurred heavy losses especially the dairy farmers. This has spurred unrest among farmers and clashes have been reported at many places between farmers and traders. E-commerce portals such as Big Basket and Grofers, the new face of agriculture marketing also came under stress. Restaurants and casual dining also faced the pinch with the hike in prices being transferred to the customers.

Farmers from different parts of the country again united and stormed Delhi in November. Led by opposition leaders and activists, nearly one lakh farmers reached Delhi under All India Kisan Sangharsh Coordination Committee, an alliance of various farmer bodies. The Kisan Mukti March Farmers demanded remunerative prices for their produce and freedom from debt. Protesting farmers demanded a special session of Parliament on agrarian crisis to pass two Bills: one pertaining to one-

The Union Cabinet chaired by Prime Minister Shri Narendra Modi approved the Agriculture Export Policy, 2018, aimed at doubling the agricultural exports and integrating Indian farmers and agricultural products with the global value chains. The Agriculture Export Policy envisions to harness export potential of Indian agriculture, through suitable policy instruments, to make India global power in agriculture and raise farmers' income.

time full loan waiver, the other for a long-term institutional measures to ensure farmers are not pushed into debt again. They also demanded implementation of Swaminathan Commission recommendations that say the minimum support price should be fixed at 50% above the comprehensive cost of production.

The recent farmer agitations are signs of a deeper malaise existing in Indian agriculture. Ours which was mostly a production oriented system had rarely observed the agriculture as an income generator of a large section of the population. The advances that India today boasts of may have made the country an agriculture super power but it did little to help the living conditions of the farmers.

AASHA – PM'S NEW HOPE

Procurement of food grains and ensuring minimum support prices to the farmers have always remained an issue of considerable contests and difference in opinions. The new PM AASHA (Pradhan Mantri Annadata Aay Sanrakshan Abhiyan), the Umbrella Scheme comprising of Price Support Scheme (PSS), Price Deficiency Payment Scheme (PDPS) and Pilot of Private Procurement & Stockist Scheme (PPPS) was a highlight of the year 2018. Under the scheme, the preexistent Price Support Scheme (PSS) has been expanded to include the physical procurement of pulses, oilseeds and Copra where in the Central Nodal Agencies and State governments would take the lead. In addition to NAFED, Food Cooperation of India (FCI) will take up PSS operations in states /districts. The procurement expenditure and losses due to procurement will be borne by Central Government as per norms. Under Price Deficiency Payment Scheme, inspired by the Bhavantar Bhugtan Yojana of Madhya Pradesh, which pays the difference between the MSP and the market price, all oilseeds for which MSP is notified are expected to be covered. The

The Indian government proposed 5 million mt of mandated sugar exports for the 2018-19 (October-September) season. To aid the exports, the government announced a Rupee 139/mt (\$1.9/mt) of sugarcane production subsidy along with a three tier transportation subsidy. The government's decision to give export subsidy to clear out the domestic stock taking advantage of the firming international prices after the recent cut in global production estimates to 187 million tonnes (mt) for the year 2018-19 against 203 mt logged in the previous year, offers some amount of relief to the sector. Sugar mills have subsequently signed deals to export raw sugar for the first time in three years as a rally in New York prices to seven-month high along with government subsidies made exports lucrative. The better prices prevailing globally, export subsidy and the weakening rupee has made export lucrative this year.

direct payment of the difference will be made to pre-registered farmers selling his produce in the notified market yard through a transparent auction process. This scheme does not involve any physical procurement of crops as farmers are paid the difference between the MSP price and Sale/modal price on disposal in notified market.

Another notable feature of this scheme is the involvement of private sector in procurement operation. In the case of oilseeds, states have the option to roll out Private Procurement Stockist Scheme (PPSS) on pilot basis in selected district/APMC(s) of district involving the participation of private stockiest. The pilot district/selected APMC(s) of district will cover one or more crop of oilseeds for which MSP is notified. Since this is akin to PSS, in that it involves physical procurement of the notified commodity, it is expected to substitute PSS/PDPS in the pilot districts.

PM AASHA is an extension to the recent increment of MSP and hence tries to derive the maximum advantages of MSP through different means. These measures are all in line with the larger purpose of compensating the farmers and ensuring a steady income. However, there should also be concomitant investments in building logistics and infrastructure and increasing

awareness.

FLOODS GALORE

Last year, many parts of India were devastated by cyclones, floods and landslides. Many lost their lives, land, house, property, belongings and most importantly their source of livelihood.

Kerala suffered the worst monsoon flooding in a century with about a million people getting displaced and more than 400 people losing their lives. Over 280,442 farmers in the state were hit and their losses are estimated at Rs 1,000 crore. Crop losses in over 45,988.50 hectares, across the state, have been pegged at Rs 10.7 billion rupees. Nearly one lakh cows, four lakhs hens, one lakh pigs and one lakh sheep were washed away. In 14 districts, over 114,000 acres of farms and orchards have been completely destroyed. Rice plantations suffered the most. Approximately 45,000 acres of rice harvest has been gutted, over 23,000 acres of sago harvest, 1,500 acres of paddy plantations, 17,700 acres of coconut trees, 1,300 coconut plantations and 10,000 acres of vegetable harvest have been washed away. Around 75,000 pepper vines, 27,000 rubber trees, 15,000 nutmeg plants, 12,000 cocoa trees, 9,000 arecanut trees, 3,000 coconut trees and 1,455

coffee plants have been damaged due to the floods. Pepper production in 2019 calendar year is expected to hover around 45-50,000 tonnes as the floods in Kerala and Karnataka have impacted the crop, posting an overall damage of 40 per cent. The production in 2017 was 64,000 tonnes.

Cyclone Gaja, which made landfall near Vedaranyam in Nagapattinam in Tamil Nadu in the wee hours of November 16 claimed 45 lives across the state. The cyclone, which went on to affect many other districts, including Tiruvarur, Thanjavur, Pudukkottai, Dindigul and Trichy destroyed property. Extensive damage to agricultural lands were also reported. Gaja has impacted the entire Cauvery Delta region severely damaging agricultural crops such as coconut, banana and sugarcane, besides standing crops like paddy. The damage has been extensive in the Pudukkottai districts - Alangudi, Aranthangi, Peravurani and Pattukottai coconut belt. Tamil Nadu, which has the third largest area under coconut after Kerala and



Karnataka, is the second largest producer of the nuts due to higher yields. At least 100,000 ha of paddy crops is estimated to have been damaged in Thanjavur alone.

Cyclone Titli was another major event in India affecting the states of Andhra Pradesh, Odisha and West Bengal. An estimated number of 60 lakh people have been reported to be affected by the calamity in Odisha. At least 202 villages in Andhra Pradesh have been affected by the cyclone and rise in water level of major rivers in the state which caused floods. As per a preliminary assessment, the loss suffered in different sectors, including infrastructure and agriculture, is estimated to be worth around Rs 2,200 crore. The cyclone

and subsequent flood have damaged crop in 2.6 lakh hectare of land and destroyed 56,930 houses, and killed 34,951 domestic animals. More than 22,000 acres of vegetable crops, 3,380 acres of paddy crop, 194 acres of banana plantation, 330 acres of cotton crops have been destroyed by the cyclone across three mandals of Srikakulam. Nagaland and Arunachal Pradesh also survived one of the worst floods affecting the states' population and their property.

Floods thus formed a very important part of 2018 adding misery to the farmers woes. As the climate changes, India must prepare itself to more such events.

The year 2018 was not particularly an impressive years for the farmers. They bore the brunt of weather extremities, natural calamities, policy changes and market fluctuations. Their income levels did not improve. However, their resolve to fight against the oddities have strengthened. They will emerge as a prominent collective in future discourses in polity and policy decisions.

“Doubling real income of farmers by 2022-23 over the base year 2015-16, requires an annual growth of 10.41% in the real income of farmers. Strong measures are required to harness all possible sources of growth in farmers' income within as well as outside the agriculture sector. The major source of growth operating within the agriculture sector includes, among others, improvement in productivity and resource use efficiency or saving in cost of production. Agriculture faces many challenges like small and scattered land holdings with 85% farmers possessing less than 2 hectares of land, water scarcity and dependency on rain, scarcity of labour with growing rural to urban migration by farmers and high equipment cost and poor after-sale services. Financing of farm equipment is one of the biggest impediments to the increasing mechanisation levels in India. Agriculture Mechanisation is an essential input in modern agriculture to increase the productivity and for making judicious use of inputs like seeds, fertilisers, chemical & pesticides and natural resources like water & soil nutrients etc. National Cooperative Development Corporation (NCDC) is supplementing the efforts of the Government of India in doubling farmers' income. An ISO 9001:2015 compliant organisation, NCDC has extended financial assistance over Rs.63700 crore in the last 4½ years which amounts to more than 58% of its cumulative disbursements since in its inception in 1963. To mitigate the hardship faced by farmers, NCDC has embarked upon supporting establishment of 'Farm Mechanisation Hubs'(FMH) by cooperative societies with the objective of developing the cooperative societies as effective Farmers' Services Centers which caters to a wide range of essential agriculture inputs and also to meet the non-credit needs of farmers”.



**SH. SUNDEEP KUMAR
NAYAK, IAS**
Managing Director
National Cooperative
Development Corporation

With an estimated milk production of about 176 million tonnes in 2017-18, India continues to be the largest milk producer in the world – accounting for little over one-fifth of world milk production. Dairying can be an effective tool for poverty alleviation in the hinterlands, as animal assets are more equitably distributed than farm lands. It also provides a steady alternate source of income especially during stressful times such as crop failures, flood or drought. “Animal farming” contributes about 12% of the household income and income in the rural areas can further be enhanced by providing access to organised market to millions of farmers. It has been experienced that simply providing market access even in low milk potential areas induces milk production and surplus. In order to further increase the cooperative reach and make dairying more economically viable activity, NDDB is implementing National Dairy Plan Phase I (NDP-I) - a scientifically planned multi-state initiative that is being executed through End Implementing Agencies (EIAs) with the twin objectives of i) increasing productivity of milch animals to help increase milk production to meet the rapidly growing demand for milk and ii) providing rural milk producers with greater access to the organised milk processing sector. On the dairy infrastructure front, there is a challenge to revitalise decades old processing infrastructure to improve the efficiency inter-alia better return to milk producers. In spite of robust domestic growth in supply, weak international market continues to pose many challenges to the dairy sector. Despite many adversities the dairy sector is facing currently, the dairy cooperatives continue to provide higher procurement price of milk. Considering that milk production in recent years has been growing at a faster rate, the need of the hour is to expand marketing of milk and milk products. Indian dairy market is expected to grow by 15% annually during the next couple of years. The value added products like cheese, flavoured milk, flavoured yoghurt, UHT milk etc. are likely to grow above 25%. Therefore, further investments for manufacturing of value added products must be undertaken to tap this potential.

As we know, dairy has played and would continue to play a significant role in securing the food and nutritional security of millions of our countrymen. Government policies providing an enabling environment along with government funded programmes and schemes would continue to help bolster the dairy sector to reach new heights in the coming years.



SH. DILIP RATH
Chairman, NDDB

“Agriculture and allied sectors are the backbone of the Indian economy since they account for 18% of the GDP. This year, agriculture received a huge fillip when the government announced several pro-farmer policies. In 2018, the government is targeting a record food grain production of 285.2 million tonnes. In this backdrop, the agro-chemical industry also improved its performance this year, growing at 6 to 8%. The 2018 Budget gave a major boost, with the govt increasing agriculture credit to Rs 11 lakh crores. Other factors included the contract farming law, followed by higher MSP rates and a new procurement policy. However, uneven distribution of the monsoon limited growth pace as expected during the first half of the year. Nevertheless, India’s per hectare agrochemical consumption is set to rise significantly in the coming years. Obvious factors such as increasing population, decreasing per capita availability of arable land and focus on increasing agricultural yield will fuel demand for agrochemicals. India is the fourth largest producer of agrochemicals globally, but consumption is amongst the lowest with only 600 grams per hectare (much below US, Japan and China). Seven states, including Andhra Pradesh (AP), Maharashtra, Punjab, Madhya Pradesh and Chhattisgarh (counted as one), Gujarat, Tamil Nadu and Haryana account for usage of 70 per cent crop protection chemicals. Andhra Pradesh is the leading consumer of agrochemicals with a share of 24 per cent. We expect the agrochemical market will grow at 8 to 10 % in next year. With more effective and innovative policy announcements by the government, Dhanuka will also be able to achieve better growth going forward with our new products and technology”.



SH. RG AGARWAL
Chairman
Dhanuka Agritech

'A few key reforms should be pursued in the coming year'

Mr Ajay S Shriram, Chairman & Sr Managing Director, DCM Shriram Ltd.



Agriculture is a complex subject, and therefore any solution to address the challenges facing the sector, need to recognize this. One size fits all, will not work. The requirement of the sugar farmer in central UP is very different than that of a tomato grower in south Andhra, the jute farmer in Bengal faces issues that are not relevant for the grape farmer of Nasik and the poultry farmer of Coimbatore has little in common with the apple grower of Kashmir. Yet all these activities come under the umbrella of Agriculture.

Most countries support agriculture to ensure food security, and India is no exception. The focus so far has been to increase production and keep consumer prices at reasonable level. The main policy instruments to support farmers in India include subsidised fertilisers, power, agri-credit and crop insurance on the input side, and minimum support prices for major crops on the output front. However, in attempting this balancing act, farmer income has not received the attention it warrants. It is this aspect that is leading to farm distress. Some of the subsidies have in fact had unintended ecological cost on account of over use of urea and water. The spate of farm loan-waivers does give temporary relief, but agriculture is unlikely to be revitalized by such measures. In fact, banks may become hesitant to lend to farmers and thereby restrict further loans.

Therefore farming needs to be viewed not just a production activity, but as a viable business. Freedom to price, choice of customer and an efficient supply chain is the cornerstone of any profitable business, and agriculture is no exception. Such a framework has often eluded the Indian farmer because of various restrictions.

A few key reforms should be pursued in the coming year. The Government has announced MSPs that are at least

50 per cent above the cost. This is especially true for those cultivating cotton, maize, groundnut, soyabean, jowar, bajra, mustard etc. Given the limited reach of the government's procurement mechanism, benefits are likely to be restricted to a limited number of farmers in select states. On the other hand an efficient and sustainable solution for better prices lies in "getting the market right". In a globalised market and with government wanting to double agri exports, increasing, MSPs can make Indian Agriculture uncompetitive. High sugarcane prices are an example of such policies. Essential Commodities Act is a big deterrent to companies undertaking export commitments because of the fear of stock limits. This Act has served its purpose in an era of shortages, and should be now be repealed or changed substantially. Productivity and competitiveness is the key, as artificially raising prices will be counter to market forces. Food processing industry has played an important role in raising productivity and creating direct links with the farmers. Sugar, Dairy, Tomato processing, Menthol, Seed production, Poultry are examples where industry intervention has made Indian agriculture globally competitive. This can be extended to other agriculture commodities, particularly fruits and vegetables. FDI in organised retail needs to be encouraged to shrink the chain between the farmer and the consumer. It will give a fillip to food processing and provide farmers with a higher percentage of retail price.

Introduction of AMPC Model Act has been on the cards for a long time. So far, only Maharashtra has amended the law to completely decontrol fresh produce. Other states need to follow this example. This will reduce middlemen, cut transit costs, minimize losses and bridge the gap between farmer realization and consumer price. Most importantly, it will encourage food

processors to engage directly

with farmers to improve quality and productivity, with assured prices. Investments need to be prioritized towards agricultural research, development of roads and farmer education. Interestingly, at the global level, the private sector is leading in Agri-R&D. If India needs to access that technology, it needs to develop a proper IPR regime, which is in the interest of farmers as well as investors. The current regulatory framework is not favourable to research. AgTech is the next emerging frontier where AI, digital sensing, drones and satellite imaging can take productivity to the next level. Some start ups are already doing exciting works in this space and will play an important role in the future.

The PM's Fasal Bima Yojana, Krishi Sinchayee Yojana and the National Agriculture Market are excellent initiatives, but all of them require better implementation at the ground level so that these schemes can deliver the intended benefits.

Various States Governments have tried to support farmers with subsidies, procuring at high MSPs, and direct transfer benefits. So far, it seems the DBT (Direct Benefit Transfer) scheme as formulated and implemented Telangana has worked best, as it is well-targeted with minimum leakages. Equally important, it does not saddle the government with the logistic nightmare of procurement nor does it artificially raise prices for exports. Further, it also supports farmers who do not have marketable surplus.

The above suggestions are just a few policy interventions that can be rolled out. However, as mentioned earlier, the farmer will certainly need tailor made solutions for each State and each crop. The State Governments must play a very important role in this endeavour.