

Empowerment of marginal and small farmers

need for budgetary support

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As agriculture is the main source of livelihood for a majority of the rural population, dominated by small and marginal farmers, food security of the nation cannot be solved unless these farmers are empowered to enhance their income through agriculture. Although agriculture is a state subject, the Government of India has a major role in supporting the state initiatives through suitable policy measures and financial support through the annual budget. Based on the observations made by various stakeholders directly engaged in agricultural development in the country, the study identified where small and marginal farmers need support immediately.

Key words: Budgetary support, Empowerment, Marginal farmer

The problem of plenty

The year 2017-18, was a successful year of agricultural production. There was normal rainfall during the year and with 277.49 million tonnes of foodgrain production, the country broke all previous records. With production of 111.01 million tonnes of rice, 45.42 million tonnes of coarse cereals, 27.14 million tonnes of maize, 23.95 million tonnes of pulses, 353.23 million tonnes of sugarcane and 33.92 million tonnes bales (170 kg each) of cotton, the previous records in these crops were surpassed while there was a marginal decline in the production of wheat and oil seeds, with production of 97.11 million tonnes and 29.82 million tonnes respectively. In addition, with the harvest of 305.4 million tonnes of fruit and vegetables, horticultural crop production also excelled all earlier records, surpassing the average production of last five years by 8%. During the year 2017-18, the milk production also increased by 6.6% to 176.35 million tonnes, setting a new record. In spite of such significant increase in agricultural production, most of the small and marginal farmers, who

represent over 85% of the land holders in the country, were unhappy and dejected. Unable to sell their produce and realise reasonable price even to cover the cost of production, farmers came on the highways to throw their farm produce, to draw the attention of the policy makers and the general public. It was a strange year, when most of the farmers were in distress, while consumers were happy with their savings due to declining prices of farm produce.

Surplus farm production created a glut in village markets, while most of the small farmers were not organized to aggregate their produce for taking them to large *Mandis*. Due to the falling prices, a majority of the farmers could not take benefit of higher yields. The following year 2018-19 started with a delayed monsoon and prolonged dry spells in many parts of the country, which could not be precisely predicted even by the Meteorological Department. Unable to repay the loan taken during previous years, including the backlog caused by the drought in 2014 and 2015, there was a hue and cry for waiver of farm loans. There

were no serious considerations to address the problems of water scarcity, easy access to good quality seeds and agro-chemicals, timely release of farm loans, marketing of farm produce and timely settlement of crop insurance. There were hardly any technological developments to mitigate the ill-effects of global warming. Instead, unscientific lobbies taking advantage of their close proximity to those in power, confused the farmers with zero budget farming, cow urine therapy, organic farming, etc. without proper field validation.

Livestock sector has been a reliable source of finance, particularly during period of distress. Farmers generally sell a part of their herd during the years of poor monsoon, much before the beginning of fodder shortage. This gives some cash in hand while reducing the burden of feeding. With the restriction on cattle sale and transportation, it became extremely difficult for them to dispose off their cattle, which added to their misery. A baseless controversy on A1 and A2 types of milk confused the farmers about the type of cows to be maintained by them, while the

consumers were equally concerned about the quality of milk, which only benefitted the traders.

Major problems of small farmers

Major problems which have disturbed the income of small farmers during the last few years, can be summarized as below:

- Erratic climatic changes and lack of suitable technologies to cope with changing environment, thereby affecting crop yields.
- Poor irrigation facilities due to inefficient distribution of available water resources and slower progress of new irrigation projects. Interrupted supply of electricity further posed a hindrance in use of the available water resources for irrigation.
- Rising cost of inputs, small and fragmented land holdings and increasing labour costs have resulted in high cost of production and lower crop yields. Falling prices for farm commodities due to overall surplus production contributed by farmers in irrigated areas, poor supply chain to realise higher price for the produce and liberal imports, have turned agriculture uneconomical. Delay in providing minimum support price for major food grains and poor procurement by the Government nominated agencies in interior areas, suppressed the price further.
- In the absence of decentralised storage and processing facilities, small farmers could neither hold their produce till the realization of higher price nor process for value addition.
- Poor agricultural extension and information services about selection of suitable crops, improved technologies, weather forecasts, types of pests and diseases prevailing in the region, information on demand and price for various farm produce, etc. could not empower farmers to take suitable corrective measures on time.
- Lack of required credit to procure various inputs well in time, high premium for crop insurance, and delay in settling the claims of

farmers, created a cash crunch, beyond their ability to tide over the crisis.

- Low productivity of livestock, high cost of feeding due to shortage of feed and fodder, inability to dispose off old and unproductive cattle and lack of clarity about the economics of dairy husbandry, created uncertainty about the future.

It was clear that the country had the capacity to enhance the food production to meet the growing demand. However, there was a dearth of infrastructure and support services to develop a strong value chain for various agricultural commodities.

Support needed for increasing the income of small and marginal farmers

To improve agricultural production and enhance the income of farmers, it is necessary to review specific problems encountered in different sectors such as land holding and soil productivity, water resources availability, selection of suitable crops and varieties, availability and quality of farm inputs, availability of appropriate technologies, farm implements and labour availability, protection against pests, diseases and natural calamities, post-harvest management to reduce wastage, storage, processing and marketing, finance and insurance and above all, building the capacity of small farmers to take timely decisions and operate their farming as a commercially viable enterprise. Following are the specific issues which need to be addressed on priority.

Problems of small land holdings: Although the average size of land holdings of 24.5 million small farmers and 92.35 million marginal farmers are 1.42 ha and 0.38 ha respectively, these lands are further fragmented into several pieces, subjected to heavy soil erosion and neglect, because of non-viable scale of operation, lack of mobility and lack of cooperation of neighbouring farmers to carry out operations such as fencing, pest and disease control, rain water harvesting, etc. While it is difficult to mechanise the farming operations on small fields, it is also difficult for these farmers to carry out

all the field operations manually, well in time. However, they continue to cultivate and often keep the lands fallow, without leasing to other farmers, due to the fear of losing their ownership.

A suitable policy to encourage small farmers and absentee land owners to lease their lands, can help to pool several small plots, by progressive farmers or corporates, under the contract farming agreement. This can help to introduce mechanization and high value crops without any risk of failures. Small farmers unable to sustain their livelihood on their lands can engage in other activities, while earning an assured income from land lease. Increased scale of operation can reduce the cost of agricultural production and marketing, while realising higher price for the produce.

Soil productivity and nutrition management: Soil erosion is a major problem across the country particularly in rainfed areas. It can be said that the quantity of nutrients lost with the eroding soils is equivalent to almost 80% of total fertilizers produced in the country every year. Significant quantity of organic carbon is also lost every year, which is essential to maintain water holding capacity and to improve the productivity. Therefore, farmers should be supported to take up land development activities such as contour bunding, land levelling and shaping, establishment of trees on field bunds as shelter breaks and soil erosion control barriers, particularly under the watersheds and unirrigated areas. Ongoing schemes such as *Mahatama Gandhi National Employment Rural Employment Act Guidance* (MGNREGA) and climate resilience agricultural projects can also be extended to support these activities. Increase in crop production demands nutrients such as nitrogen (N), phosphorus (P), potassium (K) and a wide range of micro-nutrients, which have to be applied to the field from organic and inorganic sources. While organic sources are healthy for the soil and human beings, it is difficult to meet the entire nutrient requirement for crops from organic sources only. However, farmers can



be encouraged to increase the production of organic manure by giving incentives, for production of farm yard manure, particularly by using biogas slurry, NADEP compost, PROM (Phosphate Rich Organic Manure), green manures, biofertilizers, etc. Animal dung and organic matter like green and dried leaves of tree and crop residues are the best source of organic manure, which can be produced in plenty, if small farmers are encouraged to take up dairy husbandry and planting trees, wherever possible.

Biodegradable urban wastes and garbage can be another source of organic manure. However, garbage disposal is a serious problem in most of the urban areas, in the absence of suitable infrastructure, investment and incentives for transportation, segregation and conversion into organic manure. The Government should come forward with attractive schemes and incentives for production of organic manure from garbage and other wastes. There is scope for promoting micro-enterprises in peri-urban areas, if model units are developed by designing a suitable protocol. Collection of dung from urban and peri-urban areas and production of enriched farmyard manure with mineral nutrients and friendly micro-organisms, should also be supported as a micro-enterprise.

The Government of India has introduced a brilliant scheme of supplying neem coated urea, which will slow down the process of denitrification of urea, thereby reducing the wastage. For monitoring the soil health, decentralised soil testing laboratories have also been established in the recent past. This has helped to prepare a nutritional deficiency map of the country. As a step forward, the Government may further recommend mixing critical micronutrients for specific regions, wherever the soil is deficient in certain micro-nutrients. This can help in improving the crop production, without heavy investment.

Water resources development and utilisation: Water is a major constraint for agricultural production and India has almost reached the condition of

water stress, inspite of fairly good average annual rainfall of 1,170 mm. This is mainly because of our inability to make best use of the rain water, as well as the stored surface and ground water for agricultural production. Watershed development is the most efficient method to harness the rain water, which needs to be supported with a precise plan to address the local problems. Support should also be given for deepening of the ponds and water bodies constructed earlier as a source of water for irrigation, construction of percolation tanks, farm ponds and water storage tanks lined with suitable plastic sheet for critical uses. Farmers wanting to recharge their open well and bore well and establishing farm ponds up to 30 lakh litre capacity, should be given support in the form of wages and cash assistance up to 75% of the investment to encourage water storage at the micro-level.

For preventing wastage of irrigation water, all the water canals should be lined with plastic or cement, till we are able to transport water through pipe lines, preferably by using plastic pipes which are faster, safer and cheaper. The time is now ripe to ban flood irrigation, but the best way is to provide the better alternative of micro-irrigation. Earlier, the Government provided 50-75% subsidy, which may be extended up to 90% for small and marginal farmers. The irrigation kit for marginal farmers may include water storage tanks of 5,000 -10,000 litres to facilitate irrigation even in the absence of power supply. Use of waste water both from domestic and industrial sources must be treated and recycled for irrigation. Israel has been using almost 100% sewage water by installing simple treatment plants in all the cities. This will not only provide additional source for irrigation but also drastically reduce the pollution of rivers and improve the community health. Simultaneously, greater awareness on water use in urban areas is essential by installing water meters and incentives for water saving, by charging higher rate for excessive water use.

Small farmers should also be

supported for installing solar pumps of 3 – 5 HP capacity, instead of giving free power supply, to make efficient use of the available water. This will be a progressive step to make best use of the water.

Selection of suitable cropping systems and crops: To cope up with consumer preference, hazards of climate change and availability of resources with farmers of different categories, there is a need to guide small and marginal farmers to adopt a suitable cropping system and cultivate suitable crops and varieties. Greater emphasis should be given for mixed farming, where farmers can maintain a small herd of livestock and cultivate suitable crops such as organic vegetables and fruits, or cash crops and food crops which also have high fodder yield. The advantage of mixed farming is to make best use of even the worst land for fodder production and efficient use of manure for growing high value crops at least cost. Tree based farming system is another important system which is less prone to the hazards of climate change. Farmers in different regions have demonstrated the feasibility of earning ₹ 1.5 to 2.0 lakh net income per acre, through vegetables and fruit production, inspite of inefficient market chain. Cultivation of high value crops in green houses has proved to be successful in producing better quality produce with marginal higher cost. Hence, these systems should be recognized to get priority lending.

Promotion of climate resilient short duration crops, preferably pulses, oilseeds and millets should be undertaken through awareness about the importance and profitability, while the local farmers' organizations should be supported to take up seed production and marketing of these varieties. There is also a need for taking a close review about the use of genetically modified (GM) crops which have high yields and resistance to drought, pests and diseases. Although many GM varieties of cotton have failed in India, there are many crops which are cultivated in the developed countries, benefitting the farmers significantly. An unbiased scientific approach will certainly help

our farmers to compete in the international market. Farmers organizations should be supported to build village level collection, grading and storage facilities to ensure successful marketing of the produce.

Supply of farm inputs and services: Most of the small farmers suffer due to non-availability of good quality inputs at an appropriate time. They suffer due to poor quality and high cost, as well as lack of finance to buy across the counter. Supply of farm inputs through farmers' organizations with a provision for loan can be a great help to increase the production at lower cost.

With the promotion of organic farming, many agencies are promoting their own agenda, which are often unscientific and ineffective. Therefore, it is desirable to entrust the responsibility of validation of such products and guide farmers to the *Krishi Vigyan Kendra* (KVK) in every district, who should closely associate with the Agricultural Extension Network in the district. It is desirable to advise the agencies and service providers to register with the KVK, who can verify their claims and guide the farmers accordingly. In recent years, several organic and bio-fertilizers and bio-pesticides have been developed and sold at a very high price. The reason for higher price is believed to be the cost of procuring the production licence and basic infrastructure required for production. There is an urgent need to simplify the licencing procedure and control on the quality of the products instead of insisting on production facilities.

Procurement of suitable farm machinery and implement are essential in the absence of bullock power. However, this involves heavy capital investment, which is beyond the means of small farmers. Hence, it is necessary to develop light machinery like efficient power tillers and tractors of very low power, which can also be used for post-harvest operations and transportation. Small farmers should be supported to procure essential farm implements by providing interest free loan, payable in easy installments. This will reduce their hardship and

improve efficiency.

There is good scope for promoting custom hiring services of farm equipment, and promotion of service providers for carrying out various field operations, including maintaining drip irrigation installation, plant protection, harvesting, threshing etc. Suitable incentives should be provided to promote these services as a means of rural enterprises. Unemployed educated rural youth should be trained and provided financial support in the form of venture capital to establish their start-ups in the areas of agricultural input production and marketing, farm equipment hire services, plant protection, installation of solar pumps and drip irrigation units, agricultural produce processing and marketing, etc., which will strengthen the value chain, while generating rural employment.

Livestock Development: Over 125 million families, comprising mostly of the small and marginal farmers in the country, own livestock, but their productivity, particularly of cattle, has been very low. This is because over 50% cattle are low yielding nondescript animals, although there are several good quality native breeds of cattle and buffaloes. Hence, incentive should be given for conserving elite milch breeds while the progeny of the nondescript cattle must be improved through upgrading with native breeds and cross breeding.

A ban on cow slaughter introduced recently, posed a serious shortage of feed and space for farmers. Hence, it is necessary to arrange for procuring unwanted animals from farmers and maintain them in *Goshalas*, managed by the charitable organizations or the Government. It is also desirable to permit the export of live animals to neighbouring countries to reduce the increasing livestock population, which contributes to global warming to a great extent. To reduce the population of unwanted male population, it is now possible to produce only female calves by using sexually sorted semen. This technology assures the birth of 90% female calves, but the cost of semen is

very high, in the range of ₹ 1,000 to 1,500 per dose. As it is very difficult for the farmers to perceive the long term benefit of this technology at this stage, they are not willing to pay such a price. Hence, the Government should consider subsidising the cost of sexed semen through the semen production laboratory to enable them to supply at a normal price. Simultaneously, there should be a provision for import of superior quality semen of exotic breeds whenever necessary.

There is a strong lobby in the country, which wants to protect native breeds of cattle and who consider crossbred cows as unsuitable and harmful. As the Government has been very sympathetic to these feelings, although it has no scientific basis, atleast in the interest of reducing the cattle population, export and slaughter of crossbred cattle should be permitted, without hurting the sentiments of cow savers.

To boost the livestock services in the private sector, support should be given to establish Animal Breeders' Societies, who can support self-employed *paravets* to provide breeding, minor veterinary services, establishment of fodder banks, decentralised complete feed production units and block level cattle markets in remote rural areas. There is a need to consider animal husbandry as a priority sector for lending soft loans and financial support for purchase of animals, equipment and construction of cattle sheds, biogas plant and silage pits. Attractive animal insurance schemes should be introduced for landless and small farmers.

Infrastructure to support small farmers: Lack of institutional support for forward and backward integration, particularly for marketing of the produce has been the major crisis faced by a majority of the farmers in the recent past. There will not be any stability in farm income unless farmers are able to sell their produce at a remunerative price. Several improvements have been made in the Agricultural Produce Marketing Committee Acts to ensure better price for the produce but small farmers have not been successful in



higher price realisation. Hence, it is necessary to strengthen the supply chain for agricultural produce grown by small farmers.

One of the earlier options was processing and marketing through cooperatives, which has been a grand success in sugarcane and dairy sectors. There were several such successful initiatives, but the crisis in cooperatives emerged due to lack of transparency and integrity of the leaders. There is a need to study the weaknesses of the present models of cooperatives and improve the systems to become an efficient marketing agency. *E-Choupalis* another successful model, where farmers could take a sample of the produce to negotiate the price and then bring their produce. In Punjab, Haryana and several other states, the Food Corporation of India has been buying the produce at the minimum support price.

For better price realization, the Government should consider fixing minimum support for important crops grown in each district and identify procurement agencies on their behalf. These agencies can then have their own storage to stock the produce and take up either processing or marketing of the produce, as needed. If the Cooperative is not geared up to manage this task,

Farmers' Producer Organisations (FPOs) can be established to work with village level producers' groups for forward and backward integration, including processing and marketing of the produce. FPOs can also mobilize crop loans and provide all the inputs and technologies to their farmer members. Farmers should be able to get additional loan against the produce stocked in the warehouse. Support should be given to expand the scope and capacity of FPOs on priority.

Information and extension services: The concept of agricultural extension services has been passing through modification since the 1950s and the time has now come to take a fresh review of its functions to match the needs of the farmers. With digital technology, farmers can be easily communicated through web portals and electronic media. Simultaneously, KVKs, who are involved in conducting field demonstrations and training, can work closely with the Extension Agency. There is good scope for merging these two services into one unit of Farmers' Advisory Service, where farmers can ask technical and market related questions and receive immediate answers. This centre can also provide weather advice, information on new varieties, pests and diseases and new

technologies. Interested farmers can visit the KVK for further training. Clubbing the role of extension services and district information and communication services with KVK can be very effective while reducing the unassayed costs.

Conclusion

The success of Indian agriculture lies in organizing small farmers to make best use of their land resources to increase food production. They should be a part of the value chain for forward and backward integration. This can be achieved through Cooperative or preferably through Farmers' Producing Company. Special efforts are needed to motivate small farmers through hand holding at every step to grow suitable crops, having good demand. Choice of technologies, procurement of inputs at competitive price, timely crop husbandry operations through labour efficient tools and collective market, can help them to maximise their profits. In this process, a sustainable grass root level infrastructure can be developed through policy and budgetary support to empower small and marginal farmers.

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Agriculture GDP Projections

All figures in crore of Rupees, at constant 2004-05 Series					
Year	GDP Agri. (assume 4%)	GDP Agri. (assume 2%)	Difference	GDP Agri. (assume 6%)	Difference as % of GDP
2012-13 (CSO figure)	649,424	649,424	-	5,482,11	-
2012-13	675,401	662,412	12,988	5,811,038	0.22
2013-14	702,417	675,661	26,756	6,159,700	0.43
2014-15	730,514	689,174	41,340	6,529,282	0.63
2015-16	759,734	702,957	56,777	6,921,039	0.82
2016-17	790,124	717,017	73,107	7,336,301	1.00
2017-18	821,729	731,357	90,372	7,776,479	1.16
2018-19	854,598	745,984	108,614	8,243,068	1.32
2019-20	888,782	760,904	127,878	8,737,652	1.46
2020-21	924,333	776,122	148,211	9,261,911	1.60
2021-22	961,306	791,644	169,662	9,817,626	1.73
2022-23	999,758	807,477	192,281	10,406,683	1.85
2023-24	1,039,749	823,627	216,122	11,031,084	1.96
2024-25	1,081,339	840,099	241,240	11,692,949	2.06
2025-26	1,124,592	856,901	267,691	12,394,526	2.16
2026-27	1,169,576	874,039	295,537	13,138,198	2.25
2027-28	1,216,359	891,520	324,839	13,926,490	2.33
2028-29	1,265,013	909,350	355,663	14,762,079	2.41
2029-30	1,315,614	927,537	388,076	15,647,804	2.48
The 2012-13 RE figures are based on the Quick Estimates of the CSO. Agriculture excludes fishery & forestry. If agricultural GDP were to grow at 4% till 2029-30, it would mean 41.83% more income than if it were to grow at 2%. At present (2012-13), 41.84% more income agriculture translate into Rs. 278,113 crore, which is 5.073% of the GDP.					