

Doubling the Farmers Income and Maharashtra's Agriculture

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Abstract

The Maharashtra State has 234 lakh ha of land under cultivation and area under forest is 52.1 lakh ha. Many irrigation projects are being implemented to improve irrigation facilities. A watershed development programme is being implemented to ensure that soil and water conservation measures are implemented speedily in the unirrigated area. The State's share in livestock and poultry population in India is about 6.3 per cent and 10.7 per cent, respectively.

In the current series, i.e from 2011-12 to 2015-16, the GSVA of 'Agriculture & Allied Activities' sector has average share of 11.5 per cent in total GSVA (gross state value added) for the State and its average growth at constant (2011-12) basic prices is (-)2.0 per cent. The average share of 'Agriculture & Allied Activities' sector in GVA (gross value added) at basic prices is 17.9 per cent and it is growing at an average rate of 1.6 per cent. The agriculture sector has always remained a focal point of our economy. It embodies the three thrust areas viz. promotion of inclusive growth, enhancement in rural income and sustenance of food security. Since 1960, after the 'Green Revolution', the country has not witnessed any major technological breakthrough in agriculture except in few crops.

The food safety net for the millions of citizens requires enhanced agricultural production and productivity with special attention towards pulses, oilseeds, fruits and vegetables which are essential for nutritional security. Various schemes are being implemented to improve performance in agriculture.

Agricultural credit is one of the inputs for improving production & productivity and reducing farmers' distress. The Government of India is aiming to cover about 50 per cent of farmers in the next two-three years through the ambitious Crop Insurance Scheme viz. 'Prime Minister Fasal Bima Yojana'. The crop insurance schemes are useful to overcome the uncertainties in agriculture.

Keywords: Cultivation; Agricultural Credit; Nutritional Security.

Key Points to Double the Farmers Income

Increase in Irrigation Facilities

Timely availability of water is the most critical element in raising the yields. Various schemes are being implemented to increase area under irrigation and also to improve existing irrigation system. Government of Maharashtra has launched an ambitious project viz. 'Jalyukta Shivar Abhiyaan' to make the State 'a drought-free state by 2019'. The

project aims to make 5000 villages free of water scarcity every year. Drip irrigation is also being promoted, especially for sugarcane, to increase the available irrigation to cover more crops per drop of water.

More Electricity for Agricultural Sector

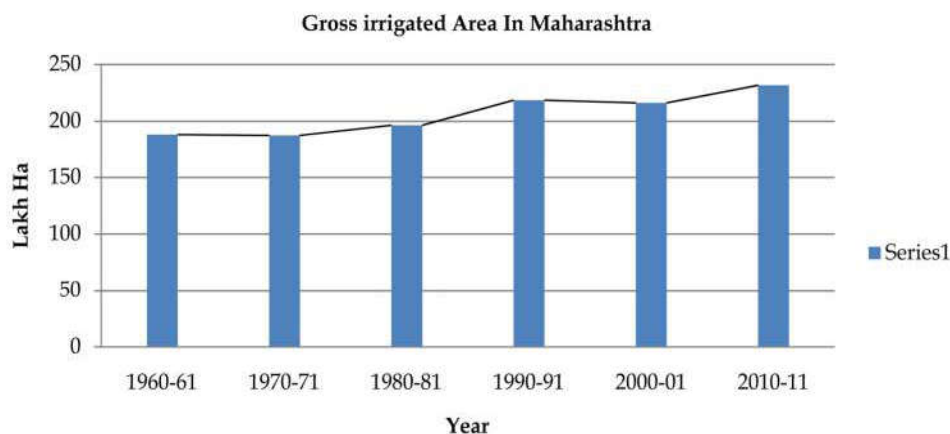
To provide more electricity to the farmers, use of Solar energy should be incorporated in the farming, which will reduce the expenditure on Diesel and other costs.

Table 1: Area Irrigated by various sources in Maharashtra

(000 Ha)

Year	Wells	Area irrigated		Gross (GIA)	Irrigation Intensity (%)	Gross cropped area (GCA)	Percentage of GIA to GCA
		Other sources	Net (NIA)				
1960-61	595	477	1072	1220	114	18823	6.48
1970-71	768	579	1347	1570	117	18737	8.38
1980-81	1055	780	1835	2415	132	19462	12.30
1990-91	1672	999	2671	3319	124	21859	15.18
2000-01	1912	1047	2959	3647	123	22256	16.39
2003-04	1931	1040	2971	3668	123	22387	16.38
2005-06	2077	1070	3147	3810	118	22556	16.89
2010-11	2159	1162	3321	4050	122	23175	17.47

Source: Economic Survey of Maharashtra-2015-16, Directorate of Economics & Statistics, Government of Maharashtra, Mumbai.



Interest Free Crop Loan

During 2014-15, Commercial banks disbursed crop loan of ' 17,986.56 crore, Regional Rural Banks disbursed ' 1,690.53 crores and Maharashtra State Co operative Bank, District Central Co-operative Banks and Land Development Banks together disbursed ' 14,423.30 crores.

These banks together also disbursed agricultural term loans of ' 23,191.61 crores. During 2014-15, Primary Agricultural Credit Co operative Societies disbursed loans of ' 14,030 crores to farmers, of which, loans of ' 6,388 crores were disbursed to small and marginal farmers.

Dr. Punjabrao Deshmukh Interest Rebate Scheme

Interest subsidy is given to motivate farmers for timely repayment of the short term crop loan. Under this scheme, three per cent interest subsidy is given for the loan up to ' one lakh and one per cent interest subsidy is given for loan amount exceeding ' one lakh but less than ' three lakh. The farmer has to repay the loan by 30th June of each year. For 2014-15 an expenditure of ' 127.99 crore is incurred and 11.84 lakh beneficiaries are covered whereas, in 2015-16 (upto January) an expenditure of ' 67.29 crores is incurred and 1.08 lakh beneficiaries are covered. (Economic Survey of Maharashtra 2015-16).

Table 2: Dynamics of Land utilization in Maharashtra

(lakh ha)

Year	Net Cropped Area (NCA)	Double Cropped Area	Gross Cropped Area (GCA)	Net Irrigated Area (NIA)	Area irrig. more than once	Gross Irrigated Area (GIA)	Cropping Intensity (%)	% of GIA to GCA	% of NIA to NCA
1960-61	178.8 (100)	9.44 (100)	188.2 (100)	10.72 (100)	1.48 (100)	12.20 (100)	105.28	6.48	6.00
1970-71	176.7 (-1.18)	10.69 (13.24)	187.4 (-0.46)	13.47 (25.65)	2.23 (50.68)	15.70 (28.69)	106.05	8.38	7.62
1980-81	180.1 (0.72)	16.34 (73.09)	196.4 (4.35)	18.35 (71.18)	5.80 (291.89)	24.15 (97.95)	109.07	12.30	10.19
1990-91	185.7 (3.84)	32.94 (248.94)	218.6 (16.13)	26.71 (149.16)	6.48 (337.84)	33.19 (172.05)	117.74	15.18	14.39
2000-01	178.84 (0.02)	37.75 (299.89)	216.19 (14.87)	32.49 (203.07)	6.03 (307.43)	38.52 (215.73)	121.13	17.81	18.16
2010-11	174.06 (-2.65)	57.69 (11.12)	231.75 (23.14)	33.21 (209.79)	7.29 (392.36)	40.50 (231.96)	133.16	17.47	19.07

Source: Economic Survey of Maharashtra-2015-16, Directorate of Economics & Statistics, Government of Maharashtra, Mumbai.

With this scheme, there are some other interest subvention schemes in Maharashtra only for the farmers which make repayment timely by considering all these interest subventions farmers will get the interest free crop loan.

Increase in Area under Agriculture

From table 2 it can be revealed that the area under agricultural cultivation has increased by 23.14 percent as compared to 1960-61 in the year 2010-11, with the continuous increase in cropping intensity (133.16 per cent) and area under irrigation (40.15 Lakh ha).

Mechanization of Agriculture

Mechanization of Agriculture by group farming, Contract farming activities will lead to the timely availability of machines for the completion of Agricultural Activities in the field and leads to not only to minimize the labour cost but also to increase the efficiency of machine and farm labour in the field.

Entrepreneurship Development

Improve the productivity of smallholders, paying particular attention to rural women and young people. Promote on and off-farm economic and employment opportunities through technical advice, increased market access, more inclusive financial services (including risk management), provision of infrastructure that links rural and urban regions and

human resource development. Such improvements, along with coherent employment policies, can facilitate the transition from the informal economy to the formal economy, particularly for women farmers and allow workers in food production systems to access services and earn a decent income.

Provide entrepreneurship and skills training for smallholders, waged agricultural workers and rural workers in general, paying special attention to women and youth, to acquire the skills necessary to improve productivity, start their own businesses and take up employment opportunities in other sectors of the economy. Promote enterprise development and employability among women by providing financial assistance to small businesses improve skills and literacy, paying particular attention to such factors as local customs and culture and promoting measures such as equal pay, child care, flexible working hours and options for part-time work, which tend to enhance women's participation. Improve women farmers' access to productive resources to sustainably increase yields and raise total agricultural output.

Support financial inclusion of smallholders and rural people through increased and sustainable access to a variety of financial services – savings, credit, remittances and insurance, etc. – to enable them to invest in productive activities, both agricultural and non-agricultural and protect themselves against risk.

The heavy pressure on farm activities should be diverted towards non-farm activities viz, value

addition, Processing, Warehousing, Cooperative marketing, Future Marketing, E-trading, Contract Farming etc.

Extension of High Yielding Varieties

Invest in agricultural research systems to support development of improved crop varieties and livestock breeds that are more resilient to climate shocks and to the projected increase in global temperatures. Climate change is projected to reduce agricultural productivity, particularly in the poorest regions. More investment in improved seeds and livestock can help offset these negative impacts on productivity growth.

Improvement in Total Factor Productivity

TFP is the important source of output growth which directly contributes to cost saving and thus increases income. TFP is the portion of output not explained by the amount of inputs used in the production. TFP growth represent the effects of technological change, skill infrastructure, etc which are not counted in the set of inputs. The increase in TFP at the rate of 2.62 per cent per annum will also increase the income of the farmer at the same rate. If TFP grows at the same rate as per year 2015-16, it will lead to 26.30 percent increase in farmers income by the year 2022-23 (Gulati Ashok and Sweta Saini, 2016).

Improving Soil Health

Vegetative Filter Strip in place of diversion drain, Vegetative Contour Hedges with Furrows, Gully Control Measures, Continuous Contour Trench, Pasture Development, Forestation, Tree Plantation along with Nalabank, Contour Vegetative Hedges (4% Slopy Land), Contour Vegetative Hedges Supported by Trenches, Ditches, bund (4-8% Slopy Land), Repairs of Existing Conservation Measures Built by Farmers, Contour Dead Furrows and Contour Cultivation etc are the agronomical practices followed in Maharashtra for improving soil health.

Area Specific Technology

Dry Land Technology: In Maharashtra state, 82 per cent area under dryland agriculture, so to increase the production and productivity, the dry land technologies i.e. crop production, stress sustained varieties, residual moisture, climate sustained technologies etc., will help to increase the farm income.

Hi-Tech Farming: The area under agriculture has been declining day by day because of non-agriculture use of land, has increased. Therefore, the Hi-tech farming plays important role by increasing more role under limited land i.e. precision farming, Meadow orchard, polyhouse & green house technology etc.,

Micro-Irrigation Technology: For increasing the more area under irrigation the micro-irrigation plays crucial role. Now a day's Government of Maharashtra has made compulsory to use drip irrigation for sugarcane. Micro-irrigation helps, to increase productivity of crops, which leads to increase in farm income.

Location based technology adoption and implementation is a urgent need from producer point of view to increase the productivity and ultimately his income.

Crop Planning according to different agro-climatic zones, soil, climate, rainfall situation and crop specific technology be given to farmers to increase farm income.

Organization of Farmers – Producers Companies

Direct linking of farmers and producers Companies will lead to better agricultural situation to both the farmers or getting input in the subsidiary rate and selling the produce with good rate and for the Producers Companies, they will get the produce of good quality with reasonable rate.

Diversification towards High Value Crops

Offers a great scope to improve farmers Income. The staple crops (cereals pulses oilseeds) occupy 77 per cent of total gross cropped Area (GCA) but contributes only 41 per cent of total output of the crop sector.

The High value crops (Fruits, Vegetables, Spices, Sugarcane etc.) just occupies 19 per cent of GCA and contribute largely to output.

With availability of the irrigation, short duration crops (Vegetables and Flowers etc.) should be grown throughout the growing seasons; it will increase the farmer's income. Besides this, the high-tech cultivation can be brought under cultivation. Introduction of Vertical Farming, Introduction of Hydroponics and Intercropping will push it further.

Development of Organic Farming

For promotion of organic farming, various activities like providing guidance, getting

certification, marketing of the organic farm products are included in National Mission on Sustainable Agriculture (NMSA). Under organic farming about 7.51 lakh ha area of the State is covered. There are more than 17,704 organic farming groups, of which 1,683 organic farming groups (comprising of more than 44,551 farmers) are certified.

Insurance in Agriculture Sector

The GoI is aiming to cover about 50 per cent of farmers in the next two-three years through the ambitious crop insurance scheme viz. 'Prime Minister Fasal Bima Yojana'. The crop insurance schemes are useful to overcome the uncertainties in agriculture. With this, there is weather based crop

insurance scheme and Gopinath Munde Farmer Accident Insurance Scheme and Livestock Insurance Scheme for the benefit of the farmers'.

Development of Agricultural Marketing Sector

The Maharashtra State Agricultural Marketing Board (MSAMB) is mainly entrusted with activities such as keeping necessary coordination in working of market committees, development & promotional activities of Agriculture Produce Marketing Committee (APMC), establishment of agro-export zones, horticultural training centres and grading & packing facilities, etc. The quantity and value of arrivals in all the market committees are given in Table 3.

Table 3: Quantity & value of arrivals in all the market committees

Year	Quantity (lakh T)	Values (₹ crore)
2012-13	360.50	38,895.19
2013-14	242.65	44,977.48
2014-15	219.58	65,367.63

Source: Maharashtra State Agricultural Marketing Board, 2015

Under the Maharashtra Agricultural Produce Marketing (Development & Regulation) Act, 236 direct marketing licenses have been issued upto December, 2015, of which 128 are functional. Apart from these, 41 private market licenses have also been issued, of which 32 markets are functioning and the National Commodity & Derivatives Exchange (NCDEX) is operating through internet.

Amendment of APMC Act done by Maharashtra Government for betterment of the farmers, it includes insertion of provisions for enabling e-Marketing of agricultural produce which will allow establishment of virtual markets, wherein the overheads will be minimized and farmers will get reasonable price for their produce.

For liberalization of trade of fruits and vegetables and permitting lawful transactions outside the market established under section 5, amendments are being proposed. Due to the proposed amendments, the regulation of marketing of fruits and vegetables only within the market shall be done by the concerned Market Committee. The amendment aims at providing alternative marketing channel for providing greater freedom to the farmers along with the protection provided by the market.

For free flow and smooth trade of agricultural produce, provision of Single Point Levy of fees in the State of Maharashtra is being incorporated.

Animal Husbandry and Daring

Livestock plays an important role in the development of agrarian rural economy. It also supplements farm income, resulting in growth of rural economy by creating employment opportunities. Flow of income to the owners through livestock production is continuous throughout the year, irrespective of season. Animal Husbandry and the livestock production are thus, playing a vital role in the sustainable economic upliftment of the rural masses.

Dairy is a supplementary activity to Agriculture, which offers the potential for generating additional income & employment opportunities for the rural households besides improving nutritional standards. The State ranks seventh in milk production in India. Under RKVY, during 2015-16 grant of ₹ 9.90 crore has been given to four dairy projects upto December, 2015. National Project for Cattle and Buffalo Breeding, National Livestock Mission and Poultry Development

Fishery

The State has a coastline of 720 km with 173 fish landing centres and the area suitable for marine fishing is 1.12 lakh sq km. There are 15,686 marine fishing boats in operation, of which 12,831 are mechanised. In addition to this, the area suitable for inland and brackish water fishing in the State is 3.17

lakh ha and 0.10 lakh ha respectively. There are 30 fish seed production centres in the State with 2,414 lakh spawn production capacity per year for catering to inland fishing. During 2014-15, State's contribution in marine, inland and total fish production (provisional) of India was 13.1 per cent, 2.2 per cent and 6.0 per cent, respectively.

Sericulture

Mulberry silk development programme is implemented in 25 districts of the State. Tasar silk development programme is implemented in four districts viz. Gadchiroli, Chandrapur, Bhandara and Gondia. Area under plantation of Ain and Arjun trees (on which Tasar silkworms are grown) is 18,866 ha in these four districts. During 2014-15, production of raw Tasar silk was 18.97 MT while during 2015-16 upto December, it was 5.41 MT.

Cost Reduction

The farm income can be increased by reducing the cost of cultivation by judicious and balanced use of fertilizers through use of Soil Health Card promoting Organic manure on own farm. Mechanization should be done to reduce the labour cost. (Use of machinery instead of human and Bullock labour) through custom hiring or through joint venture.

Price Parity

The Input Prices are increasing in geometric proportion, whereas Output Prices are increasing in arithmetic proportion. MSP as well as Market Prices are not sufficient to cover the cost of production of the crops. Hence on the basis of Swaminathan Committee, the 50% profit margin should be included in MSP.

Conclusion

1. Integration of Total Factor Productivity with increased productivity and value addition will be the source for increasing the farm income.
2. Increased crop intensity, crop diversification and High density planting will help the farmers to increase the income.

3. Subsidiary occupation will give the continuous flow of income throughout the year.
4. Processing, value addition and storage will give the good prices to the agricultural commodities, thereby increase the Farmers Income.
5. Marketing: Tomatoes, Onion and Milk are thrown on the streets in recent years. Perfections in Marketing, Market reforms, Government intervention including export and imports will lead to more returns from the same output to farmers.

Policy Implication

1. Market reforms and Model Market Act throughout India.
2. Technology adaption, risk management (Specially dry land Agriculture), water recycling, integrated nutrient, water, pest, disease and marketing management to be the core of policy crux.
3. Recommendations of Swaminathan Committee to be incorporated for MSP of the crops.
4. Investment in the Agricultural and Processing and Ware-housing sector to be increased, strengthened and its efficient working to insure backward and forward linkages.
5. Currently cost reduction, Co-operative (Joint, collective, contract farming etc) covering input and output marketing with major emphasis on post harvest management, marketing to be given highest priority in policy formulation and implementation.

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