

AGRICULTURE FOR RURAL TRANSFORMATION

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The Government adopted three pronged strategy to increase investment, better infrastructure and governance in agriculture for the sustainable rural development. While core production activities have been mainstreamed by the ongoing centrally sponsored schemes with broadening of their reach, the reforms in agriculture marketing, contract farming, land leasing, price and trade policy and agricultural credit have been introduced for inclusive development of rural India rather than agriculture as sector.

Agriculture and allied activities are the prime source for livelihood support to about 70% of India's population living in over 6.40 lakh villages (Census, 2011). Consequently, agricultural development is central to all strategies of rural development. Agriculture employs almost half of the workforce where alternate source of employment is limited and likely to remain limited in a low income country like ours. Rural India witnessed a very positive development during the last decade moving towards high income activities like dairying, poultry, horticulture, and aquaculture along with group formation. The income augmentation enterprises have shown positive dynamism with market innovations. Dominated by food security concerns, the policies in past were more centric to green revolution technologies and regions leaving behind sizeable geographies, which are water stressed.



While the average investments in the irrigated command development ranged from Rs. 2.5 to 3.0 lakh per ha, only Rs. 0.12 to 0.15 lakh/ha was invested in rainfed areas through integrated water management programme (IWMP). The estimates suggest that for unlocking the potential of rainfed agriculture, an investment of Rs. 0.50 lakh/ha or more is needed. Huge regional disparities were also observed in seed, fertilizer and marketing

Figure 1: Occupation and Income distribution of agriculture household

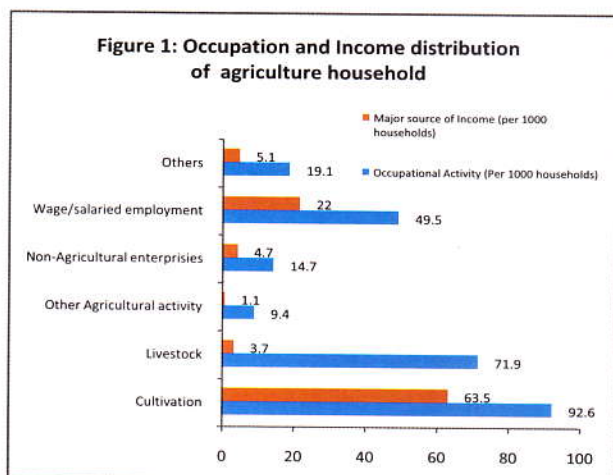
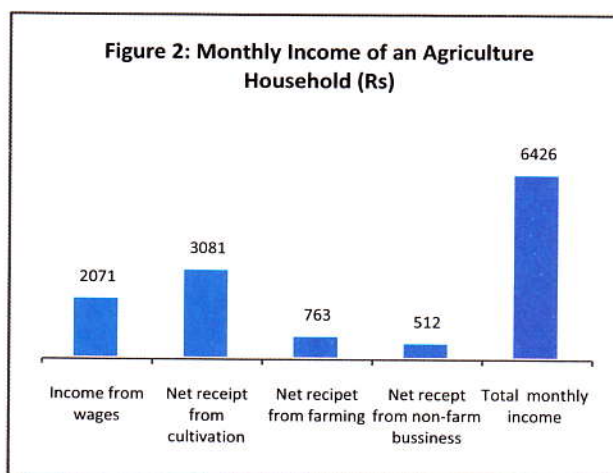


Figure 2: Monthly Income of an Agriculture Household (Rs)



services and infrastructure and the post-harvest infrastructure. The Government adopted three pronged strategy to increase investment, better infrastructure and governance in agriculture for the sustainable rural development. While core production activities have been mainstreamed by the ongoing centrally sponsored schemes with broadening of their reach, the reforms in agriculture marketing, contract farming, land leasing, price and trade policy and agricultural credit have been introduced for inclusive development of rural India rather than agriculture as sector.

Agricultural and Rural Prosperity:

The centrality of agricultural development for rural transformation is apparent from the NSSO data on distribution of agricultural households for income by major activities which indicated that more than 92% households in rural areas have agriculture as these major activity for income generation. The farming and livestock rearing together provide about 67.2 % of the income of the agricultural households (Figure 1). About 60% of the income per month is received from cultivation and farming followed by 32% from wages. The non-farm business provide only 8% of the monthly income to an agricultural households (Figure 2).

Higher Investment for Inclusive Development:

The public spending in agriculture and allied sectors has increased significantly by Central Government during 2014 to 2018. The cumulative allocation/expenditure of Ministry of Agriculture has been over Rs. 153100 crore during last three years (Figure 3). The sizeable increase has been effected in livestock sector to raise the income

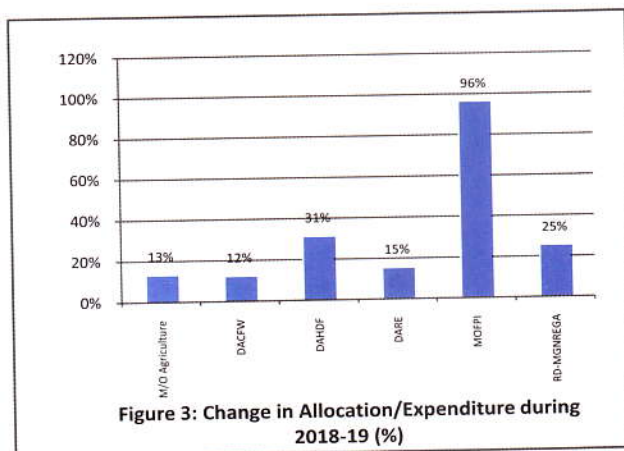


Figure 3: Change in Allocation/Expenditure during 2018-19 (%)

Expanding the Focused Funds

- Long Term Irrigation Fund with initial corpus of about Rs.20,000 crore was established in NABARD in 2015-16 which was further augmented with Rs. 20000 crore in 2016-17.
- Food Processing Fund of Rs. 2000 crore in NABARD for extending affordable credit to designated food parks and the individual food processing units in the designated food parks.
- Micro Irrigation Fund of Rs. 5,000 crores in NABARD to achieve the goal, 'per drop more crop'.
- Dairy Processing and Infrastructure Development Fund of Rs. 8,000 crores in NABARD. Initially, the Fund will start with a corpus of Rs. 2,000 crores. Dairy is an important source of additional income for the farmers. Availability of milk processing facility and other infrastructure will benefit the farmers through value addition. It will revitalize the milk processing units set up under the Operation Flood Programme.
- Fisheries & Aquaculture Infrastructure Development Fund (FAIDF) and Animal Husbandry Infrastructure Development Fund (AHIDF) for financing infrastructure requirement of fisheries animal husbandry sector. Total Corpus of these two new Funds is Rs. 10,000 crore.

of the farmers. Food processing is recognized as an employment intensive priority sector in the New Manufacturing Policy in 2011. The specific incentives to producers and entrepreneurs are put in place through PM SAMPADA scheme of Ministry of Food Processing Industries. The budgetary allocation of food processing has been almost doubled during 2018-19 to augment employment opportunities in rural areas.

Making Natural Resources More Productive and Rewarding:

A major part of rural population is primarily dependent on agri-based activities for their livelihood where land and water, due to depletion

and deterioration, has become the limiting factors. Integrated development of land and water is the pivotal to rural development. The availability of land per household is 1.16 ha and water at 1544 m³ per capita per annum. While land is unsustainable to support a normal family, India is a water stressed country with 1544 m³ per capita water availability annually. Many of the geographies are heading towards water scarce situation (below 1000 m³ per capita). For increasing the operational holdings, NITI Aayog suggested a Model Act on Agricultural Land Leasing. Consequently, Uttar Pradesh and Uttarakhand modified tenancy acts. Madhya Pradesh introduced separate bill on land leasing for optimum land use and occupational diversification. These interventions will have a strong impact in rural development in view of large landless households doing agriculture on leased-in land. The studies have established a strong inverse relationship of rural poverty with irrigation expansion. Bringing irrigation to a rainfed land increases the productivity by 2.5 times. Both the land productivity and scope for diversified farming gets enhanced with irrigation. During 2001-2012, the net irrigated area increased by about 11.4 million ha, dominated by tube wells and other sources (63.6%). The surface water irrigation has not yielded much in irrigation utilization out of the irrigation potential created. Understanding the potential of water in rural transformation, the Government undertook a much needed initiative to bring convergence within the water sector



through Pradhan Mantri Krishi Sinchai Yojana (PMKSY).

The PMKSY provides an overarching convergence amongst the programmes of agriculture, water resources and rural development. It aims at end-to-end solution in irrigation supply chain from source to farm level applications. The irrigation potential of 8.06 million ha has been targeted by 2020. The convergence with MGREGA has been envisaged to create about 5 lakh farm ponds annually. The micro-irrigation is the core focus to achieve *per drop more crop*. PMKSY-microirrigation has explicit focus on tools and techniques leading to protective irrigation and higher on-farm water use efficiency. Since 2015-16 about 17 lakh ha additional area has been added under micro-irrigation. Besides the corpus of Rs. 5000 crore, PPP model of micro-

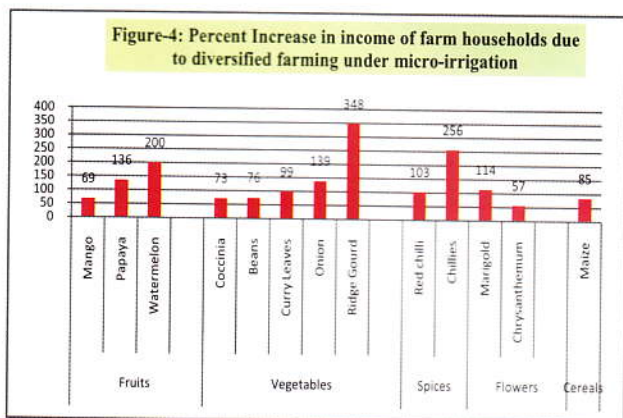


Table 1: All India Status of Soil Health Card

Particulars	Cycle-I (2015-2017)	Cycle-II (2017-2019)
Target for Soil Samples Collection & Testing (No)	25349546	28011869
No. of Samples Collected	25349546 (100 %)	23316624 (83.24 %)
No. of Samples Tested	25349546 (100 %)	14549698 (51.94 %)
Target for Printing & Distribution of SHCs	107389421	122045175
No. of SHCs Printed	107389421 (100 %)	50580440 (41.44 %)
No. of SHCs Distributed	107389421 (100 %)	46083032 (37.76 %)

irrigation with area approach is also being mainstreamed in several States. The success in augmenting the income of rural households and diversify agriculture through micro-irrigation has been rather encouraging. The income increased 69 percent to as high as 348 per cent (Rs 1.0 lakh to 1.5 lakh per acre) over traditional cropping at the farms of those household which adopted diversified cropping with fruits, vegetables and spices through drip irrigation in Chhattisgarh, Andhra Pradesh, Telangana and others States. The most encouraging benefits to rural poor happened where water for irrigation is needed the most (Figure 4). The benefit has spread over 13 states in varied agro-climatic zones. The phenomenal growth in return to farmers due to irrigation has evidenced the strongest impact that PMKSY-micro-irrigation is likely to make on rural economy.

Raising Farm Productivity to Boost Income of Rural Households:

Globally our productivity is lower in almost all the commodities than any global standards. Seed and fertilizers have been central to augmenting productivity. Government established 125 seed hubs in leading state Agricultural Universities and ICAR Institutes across the country to augment the availability of seeds of pulses. Additional 25 seed hubs have been introduced since 2018-19 for increasing the availability of quality seeds of nutri-cereals. Soil health card scheme is operational to economize the fertilizer use. The soil health card helps farmers know the fertility status of his farm and get crop-specific prescription for the right mix of fertilizers and manure needed to achieve

the higher productivity. Not only has his input mixed for fertilizer will get balanced saving on his costs but also improve the soil health. Over 10.73 crore soil health cards have been distributed amongst as many farm households (Table 1). Neem coating has been introduced to reduce the leakages in urea distribution and enhance on-farm use efficiency and cut the cost of cultivation. DBT in fertilizers linked with Aadhaar enabled soil health cards is to promote balanced use of nutrients and also bring in transparency in fertilizers distribution and sale. The present level of farm power usage is 1.84 kw/ha has to be raised to 2.2 kw/ha by 2020. It is established that farm productivity and farm power availability are strongly correlated as highly mechanized states such as Punjab and Haryana have very high productivity as compared to other States with low mechanization. Promotion of Custom Hiring Centre (CHC) for agricultural machinery is being implemented under National Mission for Agricultural Extension & Technology. The crop residue management in NCR region has been given top priority through a new scheme to manage the crop residue at farmers' fields through farm mechanization. Government introduced a Rs. 1151.80 crore scheme for in-situ management of crop residues through rural entrepreneurs.

Relieving the Rural Households from Risk:

Crop failure is a major stress which every household in the rural India faces at some point of time. The intensity and frequency is more in rainfed areas. This phenomenon affects both the farmers and the consumers in the rural areas. The Pradhan Mantri Fasal Bima Yojana (PMFBY) has been

Table 2: Achievements of Pradhan Mantri Fasal Bima Yojana in 2016-17

Coverage Details During 2016-2017	Kharif 2016	Rabi 2016-17 (Prov)	Total
Loanee applications (in lakh)	299.05	139.92	438.97
Non-loanee applications (in lakh)	102.48	32.8	135.28
Total farmer applications (in lakh)	401.53	172.78	574.25
Area insured (in lakh ha.)	385.34	195.82	581.16
Sum insured (Rs. in crore)	134582	66837	201420
Claims paid (Rs. crore)	6233.69	1493.38	7727.07
Farmers benefited (in lakh)	84.9	5.89	90.79

launched in January 2016 by subsuming multiple insurance schemes like National Agricultural Insurance Scheme, Modified NAIS, etc. PMFBY is an efficient and effective adaptation tool to cover the risk in the rural areas. It has been made more inclusive with a meagre premium of only 1.5 to 2.0 % for arable cropping and 5% of the sum insured for fruits, vegetables and plantation crops. The allocation of PMFBY has been almost tripled since 2016-17. So far the scheme has been implemented by 24 States and 3 UTs and about 5.8 million ha of cropped area brought under insurance during 2016-17. Interestingly, about 24% of the farmers applied for insurance were non-loanee farmers (Table 2).

Rural and Agriculture Financial Inclusion:

The empirical studies of the past indicated an increase of \$ 2 per capita per month income in a farm household due to institutional credit. The institutional flow of credit to farmers has increased over 18 folds since 2000-01 (Figure 3) to provide cheap credit to farmers. However, the access to credit to small and marginal farmers has been a concern along with the higher interest rates. Two significant steps were taken in the recent past-interest subvention on the short-term crop loan upto Rs. 3 lakh and broad basing the Kisan Credit Card (KCC) scheme to include term credit and consumption needs, besides some risk cover against accidental death. A farmer, who repays the loan on time, becomes eligible to get crop loan at 4 per cent rate of interest. Post-harvest loans are also being granted against Negotiable Warehouse Receipts (NWRs) with benefit of interest subvention.

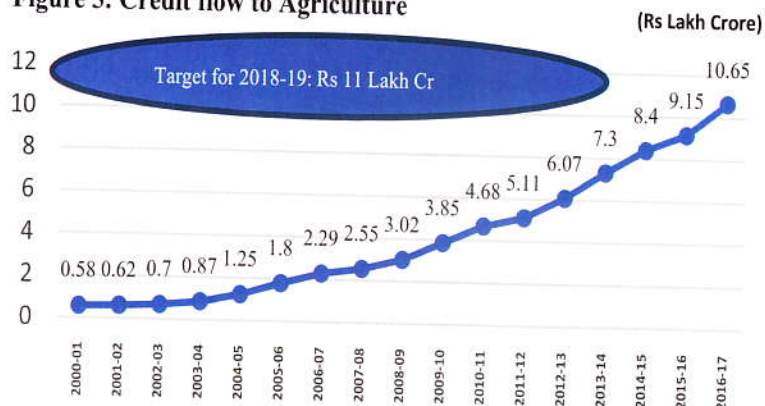
The Government made agricultural credit more inclusive by provision of institutional credit to tenants or lessee cultivators, animal rearers and the aquaculture. Recognizing the need for a legal arrangement that protects the land rights of the owner but also provide working facilitation to tenants, NITI Aayog prepared a Model Act on Agricultural Land Leasing in 2016 for facilitating the states to enact the land leasing laws for agriculture so as to enhance the operational holdings and investment in farming.

Diversified Income Augmenting Activities:

The pull factor of higher income in urban areas and push of lack or underemployment in rural areas are triggering migration to urban Centres. The process helps increasing the commercialization of agriculture. The reforms in contract farming, tariff and tax regimes, export promotion, credit have been done for achieving optimum commercialization in agriculture along with prioritizing of value chain development with a scale commensurate with national income and employment. Diversification towards high value commodities can enhance the income of farmers substantially as evident from the value of output data for year 2013-14 (CSO, 2013-14) The fruits and vegetable crops on average generate Rs. 3.30 lakh worth of output per ha compared to Rs 0.38 lakh by cereals, Rs 0.29 lakh by pulses and 0.49 lakh per ha by oilseeds. This suggests an attractive scope of raising the value of farm output by diversifying from field crops to fruits and vegetables. The rapid decline in rural poverty in Andhra Pradesh and Gujarat could be attributed to diversification in their farming during last 15

years. Even small farmers can benefit by shifting to high value commodities by utilizing large volume of family labour more effectively on small land. Special attention has been given to Medicinal & Aromatic Plants (MAPs) as a focus towards diversified farming and income augmentation. About 8,000 species of medicinal herbs and medicinal plants are reported in the country and the fragrance markets have showcased a steady growth in the past. The sales value of perfumes and fragrances in India is estimated at \$3169 million. A

Figure 5: Credit flow to Agriculture





sum of Rs. 200 crore has allocated for supporting organized cultivation of MAPs for the benefit of MSMEs in the associated industry. Mechanisms to sell surplus solar power by farmers to electricity grids and distribution companies instinctively combine income generation and sustainability targets. Galvanizing Organic Bio-Agro Resources (GOBAR) Dhan Scheme has been announced for management and conversion of cattle dung and solid waste on farms as compost, bio-gas and bio-CNG.

Rural Infrastructure Development:

The agro-based setting of rural economy is changing towards more diversified activities. However, such development is constrained by poor infrastructure as evidenced from rural road density, access to irrigation, power supply, market facility and network, godown, cold storages, cold chain and processing infrastructure. It is estimated that gap of 99% exists in pack houses, 85% in reefer vans, 10% in cold storages and 91% in ripening chambers. The primary space of marketing is market yards. On an average one market yard is distributed about 463 sq. km (12 km radius) against the desirable level of one at every 80 sq km (~5 km radius). The disparity is vast amongst states. One wholesale market at every 6 km radius exists in Punjab against one at 45 km radius in Assam. The farm mechanization is also very low at 1.84 kw/ha against 2.2 kw/ha envisaged by the experts. A number of centrally sponsored schemes and central sector schemes are under operation

which provides incentives to farmers and entrepreneurs for infrastructure development.

Reinvigorating Value Chain in rural areas:

The annual post-harvest loss is estimated at Rs. 92651 crore. The synergies amongst the programmes of Agriculture, Food Processing, and Commerce for developing effective procurement linkages, processing facilities, retail chains and export-import have been emphasised. Pooling of resources for cold chain and warehousing infrastructure development and PM Kisan Sampada Yojana of MOFPI could help mobilizing the initial funding. Specific targeted actions has been undertaken towards establishment of mega food parks, forming agro-processing clusters, modernizing abattoirs, establishing integrated cold chain and value addition infrastructure, technology upgradation for expansion of food processing, forming backward and forward linkages including warehousing, setting up food testing labs.

Strong linkage between the farmer and the wholesale markets has been long felt need for formation of an accessible, decentralised market structure. The Government has embarked upon an ambitious programme of upgrading 22000 rural periodic markets into Gramin Agricultural Markets (GrAMs) to serve as multipurpose platforms for assembly, aggregation and local retail. Rs. 2000 crores has been set aside for this purpose initially. GrAMs will provide systemic linkage to realise the vision of a unified national market by bringing primary post production activities to farmers at village level. A convergence with agricultural scheme and MGNREGA has been thought through built these GrAMs. Prime Minister Gram Sadak Yojana Phase 3 will put special attention to connecting habitations with GrAMs through all-weather roads.

Remunerative Price to Rural households:

The price policy has aimed to offer remunerative prices to producers through minimum support prices (MSP). However, the implementation of MSP has never been inclusive and limited to some produce

(rice, wheat, cotton and sugarcane) and geographies (Punjab, Haryana, Chhattisgarh, Madhya Pradesh, UP, Andhra Pradesh). It has been observed that farmers in all states and for almost all major agricultural commodities are seeking price guarantee like MSP. Government took a pathbreaking decision to provide Minimum Support Price (MSP) equivalent or more than 150% of the cost of production. The MSP so announced will change the entire canvass of rural income. The implementation of MSP, for the first time, is being made inclusive. A mechanism has been thought through to implement the MSP for all the 25 notified crops in all the States. NITI Aayog has suggested three mechanisms of market assurance, price deficiency payment and procurement by private stockists on MSP. A comprehensive mechanism integrating all three is likely to be rolled out shortly to target atleast 40% of marketable surplus of these crops.

To have agricultural markets and marketing modernized, a new Model Agricultural Produce and Livestock Marketing (APLMC) Act, 2017 was suggested. The out-of-mandi transactions and exemption of market fee on horticultural perishables along with the electronic marketing etc have been explicitly dealt in the Model Act. Government has also, in May, 2018, launched a model act on contract farming to facilitate the States to enact the contract farming acts for protecting the interests of producers and the buyers (sponsors). The model act provides an opportunity to farmers to decide their own price and negotiate with the sponsors for guaranteed price.¹ National Agriculture Market (e-NAM) was launched on 15th April, 2016 with an allocation of Rs.200 crore. It is an online inter-connectivity of e-mandis, aimed at ushering in much needed agriculture marketing reforms to enable farmers to get better price of their produce. It provides a single window service for all APMC related information and services. Farmers can showcase their produce online from their nearest market and traders can quote price from anywhere. 585 regulated wholesale markets in States/UTs across the country were connected with the common e-market platform by March 2018.

Integrating Small and Marginal Farmers with Value Chain:

Over 3500 FPOs formed under various initiatives in the country. They are real carrier of

transformation for small and marginal farmers of rural India. India. NABARD under its Producer Organisation Development Fund (PODF) has provided credit plus assistance to over 200 POs during the last 4-5 years. Based on the experiences gained under PODF, the Government created a dedicated corpus of Rs. 200 crore in NABARD in 2014-15 for promotion and nurturing of 2000 new FPOs. Subsequently, NABARD promoted 2174 new FPOs across 29 States. An explicit focus on cluster based approach to developing agriculture in a dispersed manner can potentially form the basis of future public and private agribusiness initiatives. Further, aggregation through Farmer Producer Companies (FPCs) has a dominant role in bringing forth specialisation and scale to an otherwise fragmented sector, along with necessary managerial and technical backing. Government has announced a 100 percent tax deduction to FPCs with turnover of less than Rs 100 crore during next 5 years. FPOs are also the cornerstone of newly launched Operation Greens for managing supply of Tomato, Onion and Potato (TOP) throughout the year. Rs. 500 crore is set aside for Operation Greens to promote agri-logistics, processing facilities and professional management for TOP crops.

Conclusion:

Agriculture, as a profession in rural space, has been progressing, albeit with a slower pace than other sectors of economy. The recent initiatives have made it more inclusive with suitable blend of food security along with income security priorities. While major initiatives and programmes are on course for creating an ecosystem to boost the income of the rural households, it will only sustain if reforms are mainstreamed along with developmental plans. The innovations for convergence of rural development priorities and programmes with farming technologies that economize the cost of inputs and produce more from less of natural resources will lead to rural prosperity while transforming the agriculture.

Endnotes

¹ Maharashtra has introduced contract farming of pulses and other commodities.

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