



AGRICULTURAL SITUATION IN INDIA

JUNE, 2016

FARM SECTOR NEWS

GENERAL SURVEY OF AGRICULTURE

ARTICLES

Impact of Participatory Approach and Empowerment of Local Institutions Under IWMP (Integrated Watershed Management Programme) in Bihar

NBFCs in India - A Viable Alternative For Value chain Financing

Status of Agricultural Marketing Reforms in Tamil Nadu

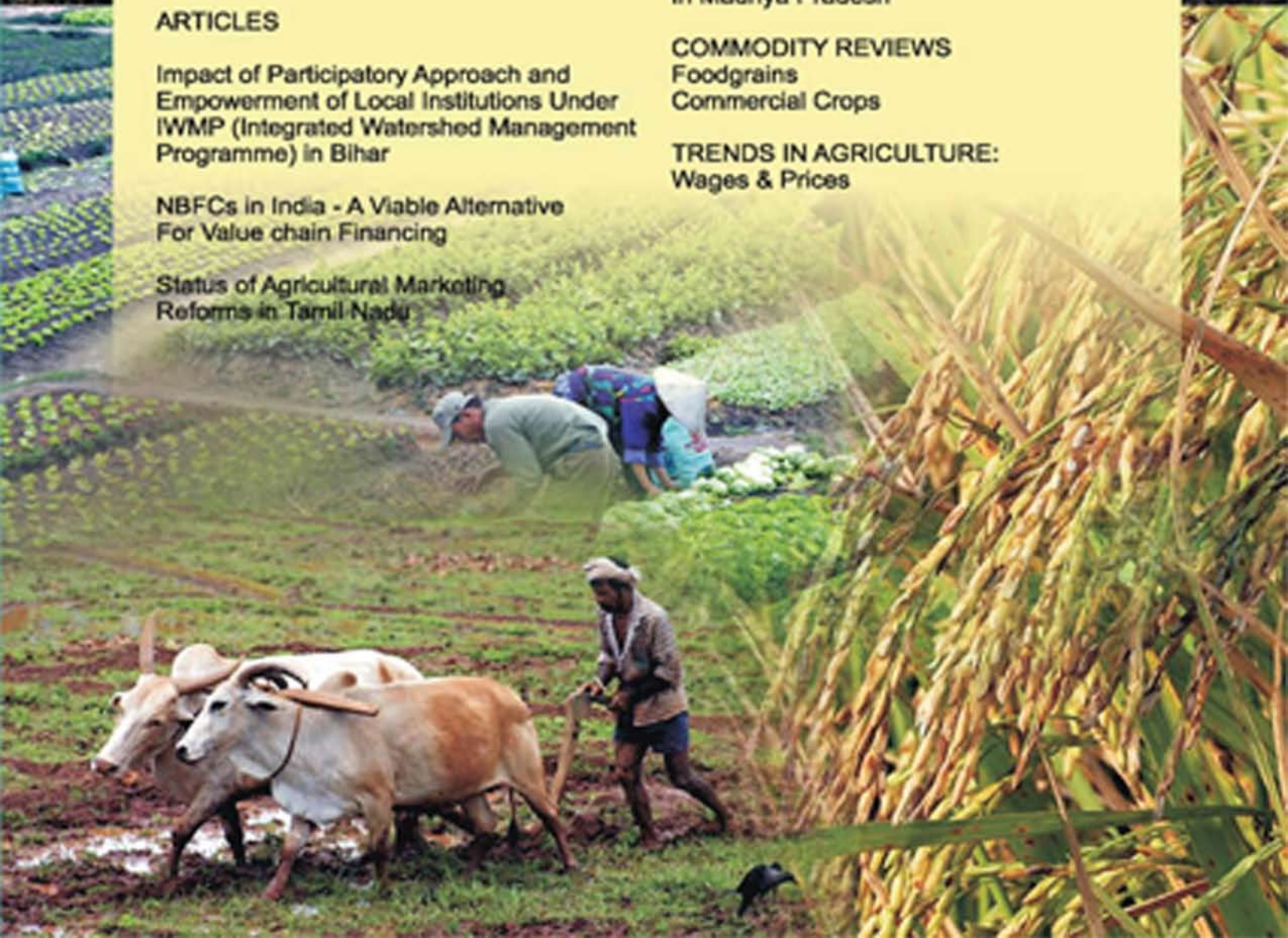
AGRO - ECONOMIC RESEARCH

Impact of Soil Testing Analysis In Madhya Pradesh

COMMODITY REVIEWS

Foodgrains
Commercial Crops

TRENDS IN AGRICULTURE:
Wages & Prices



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NOTE TO CONTRIBUTORS

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Disclaimer: Views expressed in the articles and studies are of the authors only and may not necessarily represent those of Government of India.

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Abbreviations used

N.A.	—	Not Available.
N.Q.	—	Not Quoted.
N.T.	—	No Transactions.
N.S.	—	No Supply/No Stock.
R.	—	Revised.
M.C.	—	Market Closed.
N.R.	—	Not Reported.
Neg.	—	Negligible.
Kg.	—	Kilogram.
Q.	—	Quintal.
(P)	—	Provisional.
Plus (+) indicates surplus or increase.		
Minus (-) indicates deficit or decrease.		

We are pleased to inform that our monthly journal *Agricultural Situation in India* has been accredited by the National Academy of Agricultural Sciences (NAAS) and it has been given a score of 2.76 out of 6. The score is effective from January, 2016 onwards. The score may be seen in the following website: www.naasindia.org

Soft copy of the journal may be seen in PDF at the following URL : eands.dacnet.nic.in/publication.htm

Farm Sector News

Union Agriculture and Farmers Welfare Minister, on 31st May, 2016, briefed the press about the achievements of the Ministry during past two years

The first priority of the central government was to take up effective initiatives to fight the challenges prevailing in agricultural sector. These challenges have been bifurcated in two parts so as to work on them in mission mode. The government has chalked out a plan to reduce the input cost in the agriculture sector and to provide farmers better return for their produce. Union Agriculture and Farmers Welfare Minister Shri Radha Mohan Singh said that Hon'ble Prime Minister Shri Narendra Modi has taken initiatives to double the income of farmers. The government is also giving priority to the enterprises linked to agricultural sector so as to achieve this target.

Government is taking a number of initiatives to minimize the cost for agricultural production. With this goal in mind, 14 crore farmers in the country are being given Soil Health Cards. Apart from this, Paramparagat Krishi Vikas Yojana has been launched to promote organic farming. Neem Coated Urea, improved varieties of seeds and planting material, schemes like Pradhan Mantri Krishi Sinchayee Yojana have been introduced. Farmers are also being provided agricultural loans on concessional rate. The norms related to disaster relief have been altered to help the farmers affected by natural calamities so that they are compensated for the losses appropriately. The discrepancies existing in crop insurance schemes have been removed and a new scheme called Pradhan Mantri Fasal Beema Yojana has been launched.

The Government has taken a historical initiative to provide farmers better return of their produce. The concept of "one nation and one mandi" has been taken ahead. Hon'ble Agriculture and Farmers Welfare Minister said that long pending mandi/ marketing reforms process has been accelerated. The pilot project related to e-mandi has been launched in the current financial year. Under this, 21 mandis of 8 states have been linked so far. The government is continuously making efforts to bring uniformity in the rules and regulations pertaining to various mandis in various states. Most of the states have expressed willingness to participate in this project. As of now, proposals of 365 mandis in 12 states have been sanctioned. Ministry of Agriculture has set a target of establishing unified e-trading platform in 585 mandis throughout the country by 2018.

The Minister has said that states are expected to rectify three rules and regulation related to mandis. One is to impart permission to e-trade, second is to implement mandi tariff on single window and third is to implement single licence across the state to carry out the trade. So far, 17 states have started working in this direction. The amendment of mandi related rules and regulations will pave way for achieving appropriate price of agricultural produce.

To promote agricultural sector, the government has enhanced the allocation to this field from Rs. 15809 crore to Rs. 35984 crore which is more than double. The government has made an allocation of Rs. 9 lakh crore to provide farmers cheap and concessional loan while accelerating the inflow of agricultural credit. The government has made provision for farmer credit cards as well as relaxation in payment of interests at the time of calamities.

Shri Singh said that Hon'ble Prime Minister Mr. Narendra Modi has chalked out a target to double farmers incomes by 2022. The Ministry of Agriculture and Farmers Welfare is making focused efforts in this direction. The government is also imparting priority to the ancillary areas of agricultural sector. Under this, horticulture, livestock, dairy, beekeeping as well as poultry have been promoted. A new scheme called National Agro Forestry has been initiated for planting trees over the meadows. The dairy and fisheries sectors have made greater strides in terms of growth and development. The government has accelerated second green revolution in the North Eastern region to achieve food security in the country which will lead to enhancement in the agriculture productivity on the one hand and on the other will result in improvement of the farmers' economy in North Eastern region. A number of schemes have been launched to promote the production of pulses and oilseeds so that dependence on imports can be reduced.

Initiatives taken by Ministry of Agriculture to increase farmer incomes have begun to show results on ground. A number of important measures have been taken to preserve the agriculture and farmers from the adverse affect of climate change. A number of gao palan schemes have been commenced for for maintaining milk productivity. 35 projects have been approved in 29 states for this purpose. Approvals have also been given to establish 14 Gokul Villages in the states.

To remove the scarcity of manpower in agricultural sector, the government has opened two central agriculture

Source: www.pib.nic.in

universities, 14 agriculture colleges and various agriculture research institutes. Recruitment of scientists has been increased.

Union Agriculture and Farmers Welfare Minister's Direct Dialogue with the People, Across the Nation through Face Book

Union Agriculture and Farmers Welfare Minister, Shri Radha Mohan Singh said that future of agriculture in India is great and people are very much hopeful about it. Shri Singh clarified the status of various agriculture schemes being implemented in the country in the interactive session on face book and also took cognizance of the reach of the schemes to the farmers.

Minister of Agriculture and Farmers Welfare said that the implementation of the agriculture schemes takes place through states. Therefore, based on the questions asked we get to know extent of agricultural progress in states. Shri Singh said that he would hold direct question - answers session on face book regularly.

The Gross Production of Maize in Kharif and Rabi is Estimated at 21.02 Million Tones for the Year 2015-16— said by Shri Radha Mohan Singh

Union Agriculture and Farmers Welfare Minister, Shri Radha Mohan Singh, on 26th May, 2016 said that Narendra Modi Government has initiated a number of significant schemes in last two years to strengthen villages, poor and the farmers. The positive results of these schemes have started showing up. The Minister said that despite two successive droughts, the gross production of maize in Kharif and Rabi is estimated at 21.02 million tones, for the year 2015-16.

Shri Singh added that due to the hard works carried out by the farmers, scientists and policy makers the area of maize farming has increased 2.9 times, the productivity 4.8 times, and yield has been 14 times more after 1950. He observed that this is a great achievement of the farmers. More than 308 improved maize hybrid/mixed varieties have been distributed for various climate related conditions in the country after 1957. During the last five years 30 high yielding hybrids and 10 mixed varieties have been released. The Agriculture Minister stated it in "India Maize Summit", organized by FICCI.

Agriculture and Farmers Welfare Minister said that keeping in view the varied experiments of maize the Central Government is promoting maize farming with different schemes. The government is imparting subsidy on maize seeds through National Food Security Mission (NFSM) (Rs.50 per kg on hybrid seeds and Rs. 15 per kg on composite seeds). Central Government is providing machineries like seed/grain dryers, sheller and seeds planters etc. to promote the farming of maize in the original states of Green Revolution (Punjab, Haryana and Uttar Pradesh) so as to encourage varied crops of maize.

Shri Singh informed that Bihar has emerged as a power house of maize on global scenario. Now this state is posing challenge to the Mid-Western States of USA in the prospective of maize production. The Northern side of the Ganges and on either side of Kosiriver, a stretch from Katihar, Bhagalpur to Madhepura, Seharsa, Khagaria and Samastipur has been converted into a maize producing zone. The farmers over here are yielding more than 50 quintal maize per acre.

The Minister said that government is encouraging public-private partnership in maize farming so that maize farming and related enterprises are strengthened. Shri Singh called FICCI to join this initiative and play a significant role in the field.

Union Agriculture and Farmers Welfare Minister has Approved the Target Production Prescribed for Different Crops for the Year 2016-17

Union Agriculture and Farmers Welfare Minister, Shri Radha Mohan Singh, on 25th May, 2016 said that the country will have record production of foodgrains during 2016-17. The Minister added that a good monsoon is expected in coming months and target of foodgrains production is set as 270.10 million tonnes for the year 2016-17. Union Agriculture and Farmers Welfare Minister observed that this is an ambitious target for the food grains production. The Minister has given his approval for the target production of different crops for the year 2016-17.

Shri Singh said that a target of 108.50 million tonnes rice production has been fixed for the year 2016-17, whereas it is 96.50 million tonnes for wheat. For all kinds of pulses, the target has been fixed 20.75 million tonnes whereas it is 35 million tonnes for oilseed. A target of 355 million tonnes production of sugarcane has been earmarked.

Union Agriculture and Farmers Welfare Minister said that despite two consecutive droughts, production of foodgrains went up in comparison to last year. It is estimated at 252.23 million tonnes of food grains in 2015-16.

Government Policy Targeted Towards Increasing the Storage of Perishable Agricultural Products—Said By Shri Radha Mohan Singh

Union Agriculture and Farmers Welfare Minister, Shri Radha Mohan Singh said that Government is working expeditiously for the storage of perishable agricultural products so that the farmers may get better return for their produce by adopting better market practices. Agriculture and Farmers Welfare Minister stated this in a meeting of Food, Civil Supply and Consumer Affairs incharge State Ministers and related Union Ministers on 21st May, 2016.

Shri Singh said that India has acquired largest cold storages capacity in the world which is 32 million tons during last two years. Nearly 250 projects comprising of more than one million capacities have been developed.

Now, horticulture sector has become the largest source of income within the precincts of agriculture sector. He further stated that the farmers should expand their marketing approach for their perishable crops. For this purpose, focus should be concentrated on cold storages and other related infrastructures.

The Minister added that Hon'ble Prime Minister has launched National Agriculture Market Portal formally on 14th April, 2016 for 21 mandis of 8 states. As a whole, 25 agricultural commodities for which commercial parameters have been framed out are being given permission for online trade under the scheme.

Shri Singh informed that Department is implementing sub scheme of Agriculture Marketing Infrastructure Integrated Scheme for agricultural marketing across the country so as to construct a number of storages of adequate capacity in rural areas and to provide scientific facilities in these storages. 37795 storage projects with 619.49 lakh metric tonnes capacity have been approved. As on 31.03.2016, a provision of 2199.07 crore rupees subsidy has been made.

The Minister informed that during 2016-17, 14 districts of Kerala and 2 districts of Goa have been included additionally under NFSM Pulse Seeds scheme. With this, 638 districts of 29 states have now come under cumulative coverage. In this respect, production of hybrid pulse seeds, seed production subsidy, establishment of seed centres in KVK and SAU, distribution of seed mini kits of pulse seeds, industrial demonstration, INM, IPM promotion, utilization of rice fallow area and irrigation promotion of pulse seeds like new schemes under PMKSY have been proposed to be implemented during 2016-17. A group has been constituted for the enhancement of pulse production for which a 5 year action plan has been formulated to get a production of 24 million tonnes by 2020-21.

Shri Singh informed that target has been chalked out to enhance vegetable oil production up to 2.45 million tonnes by the end of 12th plan. To achieve this target national oilseeds and oil palm mission is being implemented in the country.

Union Agriculture and Farmers Welfare Minister stated that the Govt. always focused its attention on maximizing production of food grains. He further said that food grains should not be wasted and awareness should be created on this subject. This way, we will be able to reduce burden on ecological infrastructure by saving adequate food. He further added that Ministry of Food is specially driving a campaign titled "Stop Food Wastage" in urban areas through big programs/groups.

Shri Singh requested the states on this eve that they should work together for the effective implementation of agriculture schemes so that food production is enhanced. Minister also said that the implementation of National

Agricultural Market is also necessary to ensure best price of farmers products.

Dairy Provides Livelihood to 60 Million Farmers in India-said by Shri Radha Mohan Singh

Shri Radha Mohan Singh, Union Agriculture and Farmers Welfare Minister, on 16th May, 2016, during the One Day National Conference on Gauvansh / Gaushalas mentioned that livelihood of 60 million rural households depend upon dairy sector. Out of this, two third are small, marginal and landless labourers.

Agriculture and farmers Welfare Minister mentioned that India is a global leader amongst dairying nations and produced 160.35 million tonnes of milk during 2015-16. The dairy cooperatives of the country have the singular distinction of providing seventy five percent of their sales, on an average, to the farmers.

Shri Singh informed that as many as 75 million women are engaged in the sector as against 15 million men. There is an increasing trend towards participation of women in livestock development activities. This has led to empowerment of women-headed households in the rural communities.

Agriculture and farmers Welfare Minister has mentioned that India with 30 crore bovines has 18% of the world's bovine population. Cattle Genetic Resources have been evolved by the farmers/cattle rearers/breeders using traditional and scientific knowledge, and today we have 39 breeds of cattle.

Shri Singh informed that indigenous breeds are robust and resilient and are particularly suited to the climate and environment of their respective breeding tracts. They are endowed with qualities of heat tolerance, resistance to diseases and the ability to thrive under extreme climates and low plane of nutrition.

Agriculture and farmers Welfare Minister stated that studies on impact of Climate Change and effect of temperature rise on milk production of dairy animals indicate that temperature rise due to global warming will negatively impact milk production. The decline in milk production and reproductive efficiency will be highest in exotic and crossbred cattle followed by buffaloes. Indigenous breeds will be least effected by global warming. In order to develop heat tolerant and disease resistant stock countries including United States of America, Brazil and Australia have imported our indigenous breeds.

Shri Singh also stated that the indigenous breeds of cows are known to produce A2 type protein rich milk which protects us from various chronic health problems such as Cardio Vascular Diseases, Diabetes and neurological disorders besides providing several other health benefits. Earlier Hon'ble Minister had spoken with scientists and people engaged in marketing of Milk who were of opinion

that A2A2 rich milk should be separately marketed in the country. Hon'ble Minister informed the house that Department of Animal Husbandry, Dairying and Fisheries has sanctioned Rs. 2 cr each to Odisha and Karnataka for marketing of A2A2 rich Milk of our indigenous breeds.

Inter-Governmental Agreement between India and Mauritius on Cooperation in Cooperatives and Related Fields

The Union Cabinet chaired by the Prime Minister Shri Narendra Modi has given its approval for signing of an Inter-Governmental Agreement between India and Mauritius on cooperation in cooperatives and related fields.

The Agreement between the two countries will be for a duration of five years after which it will be automatically extended for another five years. The Agreement provides for promoting cooperation through short and medium term programmes within the framework of the joint activities mentioned in the Agreement. A work plan will be drawn up by mutual Agreement between the two parties to give effect to the objectives of this Agreement.

Rajendra Agriculture University, PUSA, Samastipur of Bihar gets the Central University Status.

Union Agriculture and Farmer's Welfare Minister Shri Radha Mohan Singh, on 12th May, 2016 said that the Rajendra Agriculture University, PUSA, Samastipur has been given the status of Central University. He added that with this, long pending demand of the people of Bihar has been fulfilled. He said that Hon'ble Prime Minister, Shri Narendra Modi has fulfilled a big dream of the people of Bihar.

Parliament cleared Dr. Rajendra Prasad Central Agriculture University Bill-2015, on the 11th May, 2016. After passing the bill in both the Houses, Union Agriculture and Farmers Welfare Minister said that Central Agriculture University is a big gift for the people of the state. Shri Singh said that this University will be known as Dr. Rajendra Prasad Central Agriculture University. This is the first Central Agriculture University of the State and the second Central Agriculture University of the country.

After getting the status of central university, the centre has opened two universities, namely, Mahatma Gandhi Central University, Motihari and Central Agriculture University, PUSA, within a period of two years and with this, Modi Government has given a great gift to the people of Bihar. Minister added that with this, the controversy, which has been going on since 2009 between the State and the Government of India, has now come to an end with a splendid gift to the farmers and agriculture.

Marine Fish Production in the Country Stand at 35.83 lakh Tonnes (Provisional) in 2015-16

The marine fish production in the country during the last four years has been reported as 33.20 lakh tonnes in

2012-13; 34.39 lakh tonnes in 2013-14; 36.55 lakh tonnes (Provisional) in 2014-15 and 35.83 lakh tonnes (Provisional) in 2015-16 respectively, against the potential yield of 44.12 lakh tonnes estimated for the Indian Exclusive Economic Zone (EEZ). The variations in fish production may be attributed to several reasons such as high fishing pressure, changes in fishing gear dimensions, over capacity, pollution, environmental factors, climate change etc. Deep-sea fishing vessels (DSFVs) in the Exclusive Economic Zone are only allowed to carry out resource-specific fishing beyond 12 nautical miles from the territorial limits. Apprehensions of local fishing community, if any, regarding poor fish yield in territorial waters due to operation of these DSFVs are largely unsubstantiated, as the areas of operation as well as targeted resources are different in case of DSFVs and the local traditional fishing communities.

A committee had been constituted on 28th July, 2015 under the chairmanship of Dr. S. Ayyappan, former Director General, Indian Council of Agricultural Research (ICAR) with terms of reference to inter alia ascertain the present status of exploitation of marine fishery resources by various sectors, namely, traditional sector, mechanized boats sector and deep-sea fishing vessels; and to consult all stakeholders for preparing a draft National Policy on Marine Fisheries for over-all development of marine fisheries in India.

Government has Identified Three Areas for use of Information Technology (IT) in Fisheries

The Department of Animal Husbandry, Dairying & Fisheries, Ministry of Agriculture and Farmers Welfare has identified three areas for use of Information Technology (IT) in fisheries, namely, (i) dissemination of information to marine fishers on Potential Fishing Zone (PFZ), (ii) weather assessment, forecasting & forewarning and (iii) real time monitoring and tracking of fishing vessels. Indian National Centre for Ocean Information Services (INCOIS), Ministry of Earth Sciences (MoES) presently provides the "Potential Fishing Zone (PFZ) Advisories" using satellite data and Geographic Information System (GIS). The INCOIS has reported that currently, about 2, 50,000 fishermen in the country are using this information. Presently, the Potential Fishing Zone (PFZ) advisories are disseminated through Electronic Display Boards installed at fishing harbours/fish landing centers/ fishing hamlets/ fishermen cooperative societies, local cable TV networks, radio, INCOIS web site, email, Interactive Voice Response System (IVRS), mobile applications viz. Fisher Friend Mobile Application (FFMA) etc. Besides, the dissemination of fishery related information is also being done through web based media networks like mKRISHI, NeGPA and other web portals including social media.

The Department of Animal Husbandry, Dairying and Fisheries, Ministry of Agriculture and Farmers Welfare under the Centrally Sponsored Scheme on Development

of Marine Fisheries, Infrastructure and Post Harvest Operations provide financial assistance for supply of safety kit consisting of GPS, Communication equipment, echosounder and search and rescue beacon to fishermen.

Government is Promoting Inland Water Fishing in Reservoirs, Wetlands and Rivers in the Country

The Department of Animal Husbandry, Dairying and Fisheries, Ministry of Agriculture and Farmers Welfare is promoting inland water fishing in reservoirs, wetlands and rivers in the country, including rural areas, by providing financial assistance for stocking of fish fingerlings, river ranching, procurement of craft and gear, construction of landing centres, conducting training & demonstration to farmers under the schemes on Development of Inland Fisheries and Aquaculture and the National Fisheries Development Board. For promoting aquaculture activities, the Department is also providing assistance for installation of cages in reservoirs, construction and renovation of fish ponds & tanks, construction of fish hatcheries, fish seed rearing farms, raceways etc.

The Government has recently approved a restructured scheme on 'Blue Revolution: Integrated Development and Management of Fisheries' by merging and integrating the existing schemes of fisheries of the Department, for integrated & holistic development of fisheries and aquaculture.

Schemes to Improve the Condition of Cooperative Milk Federations and to Promote Milk Production in the Country

The estimated milk production in the country was 146.31 million tonnes in 2014-15. The State-wise estimated milk production during 2014-15 is given below.

The per-capita availability of milk in the country was 322 gram/day in 2014-15. The consumption of milk and milk products varies from place to place and within different sections of people in the country.

The Department of Animal Husbandry, Dairying & Fisheries is implementing following schemes to improve the condition of cooperative milk federations and to promote milk production in the country:

1. National Dairy Plan (Phase-I):

The Government of India has approved National Dairy Plan Phase- I (NDP-I) with an outlay of Rs 2242 Crore for a period of six years from 2011-12 to 2016-17 on 16th March, 2012 as a Central Sector Scheme.

The Scheme is implemented through National Dairy Development Board and the objectives of the National Dairy Plan, Phase I are:

- (i) To increase the productivity of milch animals and thereby increase milk production to meet the rapidly growing demand for milk.

- (ii) To provide rural milk producers with greater access to the organized milk-processing sector.

National Programme for Bovine Breeding and Dairy Development:

The new Scheme National Programme for Bovine Breeding and Dairy Development (NPBB&DD) was launched during 2013-14 by merging four existing schemes i.e. Intensive Dairy Development Programme (IDDP), Strengthening Infrastructure for Quality & Clean Milk Production (SIQ&CMP), Assistance to Cooperatives and National Project for Cattle & Buffalo Breeding with the budget provision of Rs.1800 crore for implementation during 12th Plan. The objective of the scheme is to enhance productivity of milch animals and create dairy infrastructure for improved procurement, processing and marketing of milk. Under this scheme, there is provision for rehabilitation assistance to improve the condition of sick milk cooperatives by providing a central grant up to 50 % of the cost of the rehabilitation project with a maximum financial ceiling of Rs.5.0 crore.

2. Dairy Entrepreneurship Development Scheme

Dairy Entrepreneurship Development Scheme (DEDS) is implemented from September, 2010 through National Bank for Agriculture and Rural Development (NABARD) across the country with an aim to generate self employment opportunities in the dairy sector, covering activities such as enhancement of milk production, procurement, preservation, transportation, processing and marketing of milk by providing back ended capital subsidy @ 25% of the project cost to the General Category (@33.33% of the project cost to SC/ST category) farmers/beneficiaries for bankable projects through NABARD subject to the norms of the scheme. The budget provision during 12th plan is Rs 1400 crore.

Periodic Stock Assessment Reports by Fishery Survey of India

Fishery Survey of India, Department of Animal Husbandry, Dairying & Fisheries, Government of India, responsible for the marine fishery resource survey in the country, have not reported any depletion in fish species in their periodic stock assessment reports. However, according to the fish landing statistics collected by the Central Marine Fisheries Research Institute (CMFRI), Kochi some of the marine species are reported to be depleted during the last few years with overfishing as one of the reasons cited. The major species/groups reported by the CMFRI to be affected are oil sardine, croakers and some clupeids.

Measures taken up by the Government to increase the fish stock of such affected species are:

- i. Observation of Uniform fishing ban in all coastal states and Union Territories

- ii. Awareness campaign and stakeholders meeting in all maritime states on importance of conservation and sustainable use of marine fishery resources are being arranged
- iii. Deployment of Artificial Reefs (ARs) along coastal waters by the State Government concerned
- iv. Restriction on catching of juveniles by below minimum legal size of fish species by the State Government concerned.

Enhancing Insurance Coverage of Farmers

About 20% of the farmers and 23% of total cropped area in the country has been insured so far. Improvement in crop insurance schemes to make them serve the interests of the farmers better, is a continuous process and steps are taken in this regard by the Government from time to time. Accordingly, Crop Insurance Schemes viz. National Crop Insurance Programme (NCIP) with its three component schemes viz. Modified National Agricultural Insurance Scheme (MNAIS), Weather Based Crop Insurance Scheme (WBCIS) & Coconut Palm Insurance Scheme (CPIS) and National Agricultural Insurance Scheme (NAIS) were comprehensively reviewed and Government of India has approved the Pradhan Mantri Fasal Bima Yojana (PMFBY) to replace National Agricultural Insurance Scheme (NAIS) & Modified National Agricultural Insurance Scheme (MNAIS) from Kharif 2016. Premium rates under Weather Based Crop Insurance Scheme (WBCIS) have also been reduced and brought at par with new scheme. The scheme envisages coverage of 50% of the total cropped area under Crop Insurance in the country within next 2-3 years.

To enhance the coverage of farmers under Crop Insurance Schemes, Government is undertaking a comprehensive publicity and awareness programme to educate the farmers about the benefit of crop insurance schemes. Capacity building and training programmes for other stakeholders are also being organized. The salient activities under awareness campaign, involve the publicity of features & benefits of the scheme through advertisements in leading National/Local News Papers, telecast through audio-visual media, distribution of pamphlets, participation in agriculture fairs/mela/gosti and organization of workshops / trainings and SMS through Kisan Portal etc. State Governments/UTs are also being regularly persuaded to increase the coverage including notifying more crops under crop Insurance schemes. Recently, one day seminar/ kisan fair especially on the PMFBY had been organized at various Krishi Vigyan Kendras (KVKs) between 30th March to 5th April, 2016 throughout the country.

All the crop insurance schemes including PMFBY, restructured WBCIS and erstwhile NAIS, NCIP component schemes of MNAIS and WBCIS are compulsory for loanee farmers availing crop loan/Kisan Credit Card for notified crops in notified areas.

Salient Features of PMFBY

- i) To provide comprehensive insurance coverage against crop loss on account of non-preventable natural risks, thus helping in stabilising the income of the farmers and encourage them for adoption of innovative practices.
- ii) Increase the risk coverage of Crop cycle - pre-sowing to post-harvest losses.
- iii) Area approach for settlement of claims for widespread damage. Notified Insurance unit has been reduced to Village/Village Panchayat for major crops.
- iv) Uniform maximum premium of only 2%, 1.5% and 5% to be paid by farmers for all Kharif crops, Rabi Crops and Commercial/ horticultural crops respectively.
- v) The difference between premium and the rate of Insurance charges payable by farmers shall be provided as subsidy and shared equally by the Centre and State.
- vi) Uniform seasonality discipline & Sum Insured for both loanee & non-loanee farmers.
- vii) Removal of the provision of capping on premium and reduction of sum insured to facilitate farmers to get claim against full sum insured without any reduction.
- viii) Inundation has been incorporated as a localized calamity in addition to hailstorm and landslide for individual farm level assessment.
- ix) Provision of individual farm level assessment for Post harvest losses against the cyclonic & unseasonal rains for the crops kept in the field for drying upto a period of 14 days, throughout the country.
- x) Provision of claims upto 25% of sum insured for prevented sowing.
- xi) "On-Account payment" upto 25% of sum insured for mid season adversity, if the crop damage is reported more than 50% in the insurance unit. Remaining claims based on Crop Cutting Experiments (CCEs) data.
- xii) For more effective implementation, a cluster approach will be adopted under which a group of districts with variable risk profile will be allotted to an insurance company through bidding for a longer duration upto 3 years.
- xiii) Use of Remote Sensing Technology, Smartphones & Drones for quick estimation of crop losses to ensure early settlement of claims.

- xiv) Crop Insurance Portal has been launched. This will be used extensively for ensuring better administration, co-ordination, transparency and dissemination of information.
- xv) Focused attention on increasing awareness about the schemes among all stakeholders and appropriate provisioning of resources for the same.
- xvi) The claim amount will be credited electronically to the individual farmer's Bank Account.
- xvii) Adequate publicity in all the villages of the notified districts/ areas.
- xviii) Premium rates under Weather Based Crop Insurance Scheme (WBCIS) have also been reduced and brought at par with new scheme. Further, capping on Actuarial premium and reduction in sum insured has been removed in this scheme also.
- xix) In addition, a Unified Package Insurance Scheme (UPIS) has also been approved for implementation on pilot basis in 45 districts of the country from Kharif 2016 season to cover the other assets/activities like machinery, life, accident, house and student-safety for farmers alongwith their notified crops (under PMFBY/ Weather Based Crop Insurance Scheme - WBCIS).

Schemes for Welfare of Fishermen

The Government has approved a restructured Central Sector Scheme (CSS), namely, 'Blue Revolution: Integrated Development and Management of Fisheries' with 'National Scheme of Welfare of Fishermen' as one of the components. The National Scheme of Welfare of Fishermen provides financial assistance to fishers during the lean fishing season/ fishing ban period. In addition, financial assistance is also provided for construction of houses for fishers and creation of other basic amenities such as drinking water facility & community halls. Besides this, insurance coverage for fishers is also provided under the scheme.

The Blue Revolution Scheme also aims for integrated development and management of the fisheries sector covering inland fisheries, aquaculture, marine fisheries, mariculture, cage/pen culture and creation of fisheries infrastructure through central financial assistance towards sustainable livelihood to fishermen. It has the following components namely, (i) National Fisheries Development Board (NFDB) and its activities, (ii) Development of Inland Fisheries and Aquaculture, (iii) Development of Marine Fisheries, Infrastructure and Post Harvest Operations, (iv) National Scheme of Welfare of Fishermen, (v) Strengthening of Database and Geographical Information System of the Fisheries Sector and (vi) Monitoring, Control

and Surveillance (MCS) and other need based interventions.

Doubling the Income of Farmers by 2022

Government is aware of the need to review the strategy and programmes to double the farmers income by 2022. A Committee has been constituted under the Chairmanship of Additional Secretary, Department of Agriculture, Cooperation and Farmers Welfare for examining the following aspects to double the farmers income:

- (i) To study the current income level of farmers/ agricultural labourers.
- (ii) To measure the historical growth rate of the current income level.
- (iii) To determine the needed growth rate to double the income of farmers/agricultural labourers by the year 2021-22.
- (iv) To consider and recommend various strategies to be adopted to accomplish (iii) above.
- (v) To recommend an institutional mechanism to review and monitor implementation to realise the goal.
- (vi) To examine any other related issue.

Three Improved Varieties of Khesari Dal Have Been Released for General Cultivation

Three improved varieties of Khesari dal, namely, "Ratan", "Prateek" and "Mahateora" have been released for general cultivation in Chhattisgarh, MP, Bihar, Jharkhand and West Bengal, which have been found safe for human consumption due to presence of very low level (0.07-0.1%) of a neurotoxin called Beta-ODAP (?- N oxalyl- L-B-diaminopropionic acid), that is within limit.

Production of pulses in the country during the last 4-5 years has been quite encouraging, increasing from 14.7 million tonnes in 2009-10 to highest ever 19.3 million tonnes in 2013-14. However, in 2014-15, it reduced by about 12 per cent to 17.2 million tonnes owing mainly to adverse weather conditions and the second advance estimates for total pulses production in 2015-16 is about 17.3 million tonnes.

There is no ban on cultivation of Khesari dal, only its sale and storage are prohibited.

Relief/Assistance Approved as Agriculture Input Subsidy in 2014-15 and 2015-16 for Drought Affected States

The State Government is primarily responsible for taking necessary relief measures in the wake of natural calamities. For undertaking relief measures, funds are available with the State Government in the form of State Disaster Response Fund (SDRF). Additional financial assistance,

over and above SDRF, is considered from National Disaster Response Fund (NDRF) for natural calamities of severe nature and is approved on the basis of Memorandum received from State Government in accordance with established procedure.

The details regarding relief/assistance approved as agriculture input subsidy in 2014-15 and 2015-16 for drought affected States are given below. The main objective of the relief fund is to assist the affected persons to re-start their economic activities. The State Governments are to take utmost care and ensure that all individual beneficiary-oriented assistance from SDRF/NDRF is necessarily/mandatorily disbursed through the bank account of the beneficiary.

To deal with the situation, the following measures have been taken:—

- Intervention made in drought affected areas during 2015-16 by Implementation of diesel subsidy scheme, enhancement of ceiling on seed subsidy, Implementation of interventions for saving perennial horticulture crops, implementation of additional fodder development programme.
- Central Research Institute of Dryland Agriculture (CRIDA), in collaboration with State Agricultural Universities has prepared contingency plans for 600 districts for implementing location specific interventions to sustain agriculture production in the eventuality of any extreme climatic events.
- Pradhan Mantri Krishi Sinchayee Yojana (PMKSY) has been launched with the objective of extending the coverage of irrigation in a focused manner. Under PMKSY focus has been given for: Creation of new water sources; Repair, restoration and renovation of defunct water sources; Construction of water harvesting structures, secondary & micro storage, ground water development and enhancing potentials of traditional water bodies at village level.
- Central Government has relaxed the norms under MGNREGA to provide additional employment of 50 days over and above the 100 days per household in the areas affected by natural calamities including drought during 2015-16.
- In order to protect farmers against crop failure due to natural calamities, pests & diseases, weather conditions, Government of India recently introduced the Pradhan Mantri Fasal Bima Yojana (PMFBY) for implementation from Kharif 2016.

Implementation of PMKSY

Pradhan Mantri Krishi Sinchayee Yojana (PMKSY) has been operationalised from 1st July, 2015 with the objective of enhancing irrigation coverage and improving the delivery system at farm level. The programme aims at end-to-end solutions in irrigation supply chain, viz. water sources, and

distribution network and farm level applications. All the States and Union Territories are covered under the programme. The scheme envisages decentralized state level planning and projectised execution, allowing the states to draw their irrigation development plans based on district/blocks plans with a horizon of 5 to 7 years.

The scheme has four components which are as under:

- i. Accelerated Irrigation Benefit Programme (AIBP): To focus on faster completion of ongoing Major and Medium Irrigation including National Projects.
- ii. Har Khet Ko Pani (HKKP): Creation of new water sources through minor irrigation (both surface and ground water); repair, restoration & renovation of traditional water bodies; command area development; strengthening and creation of distribution network from sources to the farm etc.
- iii. Per Drop More Crop (PDMC): Precision irrigation systems, efficient water conveyance & application, micro level storage structures, topping up of input cost beyond Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS) permissible limits, secondary storage, water lifting devices, extension activities, coordination & management etc..
- iv. Watershed Development (WD): Ridge area treatment, drainage line treatment, soil and moisture conservation, rainwater harvesting and other watershed interventions.

Major, medium and minor irrigation projects are covered under PMKSY to bring more areas under irrigation and increase agricultural production. Major and Medium irrigation projects are incorporated under Accelerated Irrigation Benefit Programme (AIBP) and Minor irrigation along with Command Area Development (CAD) comes under Har Khet Ko Pani component of PMKSY both components being administered by Ministry of Water Resources, River Development & Ganga rejuvenation.

Action Plan for Fodder Development

Secretary, Department of Animal Husbandry, Dairying and Fisheries, Ministry of Agriculture & Farmers Welfare, Shri Devendra Chaudhry, on 5th May, 2016 held a video conference with the Principal Secretaries of Animal Husbandry of all the States/UTs. Important decision taken:

- (i) Allocation of Rs. 292 crores of funds under the National Livestock Mission to various States/UTs. Use of these funds can be immediately made for taking up fodder development (growth and cultivation related activities) for which the NLM Action Plan (NAP) need to be prepared immediately so that the same is useful for ensuring fodder availability for the animals should the rainfall be deficient especially in States where

there is already a shortage of fodder such as in Maharashtra, Karnataka, Rajasthan, Telangana, Madhya Pradesh etc.

- (ii) Rs.100 crores have been separately allocated under the Rashtriya Kisan Vikas Yojana (RKVY) under the sub-scheme of Fodder Development Programme under which assistance of up to Rs.3,200/- is provided per hectare (for a maximum up to 2 hectares) for fodder development in drought affected areas. Both these schemes NLM and RKVY can be dovetailed with MNREGA and an Integrated Plan inter alia are made.
- (iii) Fodder can be moved from surplus areas to the shortage areas and DAHDF would coordinate with the Ministry of Railways for transport of such fodder as may be required from surplus to the deficient States on payment basis to the Railways.

National Agriculture Drought Assessment and Monitoring System

The 14 States covered under NADAMS are Andhra Pradesh, Bihar, Chhattisgarh, Gujarat, Haryana, Jharkhand, Karnataka, Madhya Pradesh, Maharashtra, Odisha, Rajasthan, Telangana, Tamil Nadu and Uttar Pradesh. The drought assessment for 14 States is carried out at District level. However, out of these 14 States in 5 States (Andhra Pradesh, Haryana, Karnataka, Maharashtra and Telangana) drought assessment is carried out at Sub-District level.

The agriculture drought assessment and monitoring, under NADAMS project, is carried out using multiple satellite data, rainfall, soil moisture index, potential sowing area, irrigation percentage and ground observations. A logical modeling approach is followed to classify the districts into Alert, Watch and Normal during June, July and August and Severe, Moderate and Mild drought conditions during September and October. The monthly Drought Assessment Reports are communicated to all concerned State and national level agencies and also kept on the MNCFC website (www.ncfc.gov.in).

NADAMS project provides an early assessment of drought situation and thus helps the State Governments to take remedial measures and also use this information for drought declaration. This way, the assessments provided by NADAMS Project are beneficial for the farmers. But since the benefits accrued to farmers are indirectly as a result of remedial measures taken by the State Governments, so there is no system of collecting actual number of farmers benefited. Hence, no such information is being maintained.

Promotion of green house technologies under the component 'protected cultivation'

The Ministry of Agriculture and Farmers Welfare, Government of India under the scheme Mission for Integrated Development of Horticulture promotes green

house technologies under the component 'protected cultivation'. Assistance to the extent of 50% is provided to the farmers for establishment of various types of greenhouses upto 4000 sq. mts. per beneficiary.

The Indian Council of Agricultural Research (ICAR) has standardized low cost net and poly houses for cultivation of important high value vegetable crops like green and coloured capsicum, english cucumber, bottle gourd, brinjal and tomato which are being disseminated to the farming community. These protected structures are good for off-season production, help in improvement of yield by 65-80%, improve quality and protect from insects and diseases.

Development of High Yielding Varieties of Coconut

Research for developing high yielding varieties of coconut in the country is undertaken by Indian Council of Agricultural Research (ICAR) - Central Plantation Crops Research Institute (CPCRI), Kasaragod, State Agricultural Universities and Coconut Development Board. 36 high yielding coconut varieties have been released by ICAR Research Institutes and State Agricultural Universities.

Central Plantation Crops Research Institute (CPCRI), Kasaragod has undertaken research for developing tissue culture technology for rapid multiplication of coconut planting material and has also conducted research in collaboration with CDB for production of drought tolerant palms.

Tamil Nadu Agriculture University has undertaken research on "Standardization of in vitro culture techniques through somatic embryogenesis for propagation of elite coconut cultivars".

Five drought tolerant, tall varieties from ICAR Institutes and one variety from Tamil Nadu Agricultural University, Coimbatore have been released for cultivation.

Coordinated Programme on Horticulture Assessment and Management using geoInformatics

Since many of the horticulture crops are grown in small plots, road side or in the back of the houses and do not have single harvesting, it is difficult to assess their production. Many horticulture crops have multiple pickings in a single season. In view of above difficulties, the Department of Agriculture, Cooperation and Farmers' Welfare has launched a project called Coordinated programme on Horticulture Assessment and Management using geo-iNformatics (CHAMAN). The programme has the objective to develop and firm up scientific methodology for estimation of area and production under horticulture crops. It has two main components namely: (1) Remote sensing (RS) Technology and (2) Sample Survey (SS) methodology for estimation of area and production of horticultural crops. Using both of these methodologies, assessment of area and production of major horticulture crops is being done on pilot basis in 11 states.

General Survey of Agriculture

Trends in foodgrain prices

During the month of April, 2016, the All India Index Number of Wholesale Price (2004-05=100) of Foodgrains increased by 1.09 percent from 256.1 in March, 2016 to 258.9 in April, 2016.

The Wholesale Price Index (WPI) Number of Cereals increased by 0.25 percent from 236.8 to 237.4 and WPI of Pulses increased by 3.98 percent from 346.6 to 360.4 during the same period.

The Wholesale Price Index Number of Wheat decreased by 0.50 percent from 222.0 to 220.9 while that of Rice increased by 0.04 percent from 235.0 to 235.1 during the same period.

Weather, Rainfall and Reservoir Situation during May, 2016

Rainfall Situation

Cumulative Pre-Monsoon Season (March to May) rainfall for the country as a whole during the period 01st March to 25th May, 2016 has been 3% lower than Long Period Average (LPA). Rainfall in the four broad geographical Regions of the during the above period has been lower than the LPA by 18% in Central India, 12% in South and in North-West India. However, the rainfall has been higher than the LPA by 4% in East & North East India.

Out of a total of 36 meteorological Sub-divisions, 21 subdivisions received excess/normal rainfall and 15 Sub-divisions received deficient/scanty rainfall.

Water Storage in Major Reservoirs

Central Water Commission monitors 91 major reservoirs in the country which have total live capacity of 157.80 Billion Cubic Metre (BCM) at Full Reservoir Level (FRL). Current live storage in these reservoirs (as on 26th May, 2016) is 26.82 BCM as against 49.12 BCM on 26.05.2015 (last year) and 33.76 BCM of storage (average storage of last 10 years). Current year's storage is 55% of the last year's storage and 79% of the normal storage.

Sowing Position during Kharif, 2016

As per latest information available on sowing of crops, around 16% of the normal area under Kharif crops has been sown up to 31.05.2016. Area sown under Kharif crops taken together has been reported to be 59.35 lakh hectares at All India level as compared to 56.66 lakh hectares in the

corresponding period of last year i.e. lower by 2.7 lakh ha. than the last year. Area reported was higher by 3.1 lakh ha. under sugarcane and was marginally lower by 0.3 lakh ha. under jute & Mesta as compared to normal area as on date. In case of Kharif Oilseeds and Cotton, sowing is in very initial stage.

1. Economic Growth

- As per the Advance Estimates of National income released by Central Statistics Office on 8th February 2016, the growth rate of Gross Domestic Product (GDP) at constant (2011-12) prices for the year 2015-16 is estimated to be 7.6 per cent as compared to the growth of 7.2 per cent, 6.6 per cent and 5.6 per cent respectively for the year 2014-15, 2013-14, and 2012-13. (Table 1).
- The growth in Gross Value Added (GVA) at constant (2011-12) basic prices for the year 2015-16 is estimated to be 7.3 per cent as compared to the growth of 7.1 per cent, 6.3 per cent, and 5.4 per cent respectively for 2014-15, 2013-14, and 2012-13. At the sectoral level, the growth rate of GVA at constant (2011-12) basic prices for agriculture & allied sectors, industry and services sector for the year 2015-16 are estimated to be 1.1 per cent, 7.3 per cent, and 9.2 per cent respectively (Table 1).
- The share of total final consumption in GDP at current prices in 2015-16 is estimated to be 70.5 per cent as compared to 68.5 per cent in 2014-15. though the share of fixed investment rate (Gross fixed capital formation to GDP) is estimated to decline in 2015-16, its growth rate is estimated to improve to 5.3 per cent in 2015-16 as compared to 4.9 per cent in 2014-15.
- The saving rate (gross saving to GDP) for the years 2014-15 and remained at 33.0 per cent as compared to 33.8 per cent in 2012-13. The investment rate (gross capital formation to GDP) in 2014-15 was 34.2 per cent, as compared to 34.7 per cent and 38.6 per cent respectively in 2013-14 and 2012-13.

2. Agriculture And Food Management

- **Rainfall:** The cumulative rainfall received for the country as a whole, during the period 1st March-11th May, 2016, has been 12.0 per cent below normal. The actual rainfall received during this period has been 77.3 mm as against the normal at 88.2 mm. Out

of the total 36 meteorological subdivisions, 4 subdivisions received excess season rainfall, 13 subdivisions received normal season rainfall and the remaining 19 subdivisions received deficient/scanty/no season rainfall.

All India Production of Foodgrains: As per the 3rd Advance Estimates released by Ministry of Agriculture & Farmers Welfare on 9th May 2016, production of foodgrains during 2015-16 is estimated at 25.2 million tonnes compared to 252.0 million tonnes in 2014-15 (Table 3).

Procurement: Procurement of rice as on 9th May 2016 was 32.2 million tonnes during Kharif Marketing Season 2015-16 (KMS is under progress) and procurement of wheat as on 9th May 2016 was 22.1 million tonnes during Rabi Marketing Season 2016-17 (Table 4).

Off-take: Off-take of rice during the month of February, 2016 was 25.4 lakh tonnes. This comprises 22.3 lakh tonnes under TPDS/NFSA (off-take against the allocation for the month of March, 2016), and 3.1 lakh tonnes under other schemes. In respect of wheat, the total off-take was 37.1 lakh tonnes comprising of 21.1 lakh tonnes under TPDS/NFSA (Offtake against the allocation for the month of March, 2016) and 16.0 lakh tonnes under other schemes. cumulative Off-take of foodgrains during 2015-16 (till February, 2016) is 621 lakh tonnes (Table 5).

Stocks: Stocks of food-grains (rice and wheat) held by FCI as on April 1, 2016 were 42.4 million tonnes, as compared to 41.0 million tonnes as on April 1, 2015 (table 6).

TABLE 1: GROWTH OF GVA AT BASIC PRICES BY ECONOMIC ACTIVITY (AT 2011-12 PRICES) (IN PER CENT)

Sector	Growth			Share in GVA		
	2013-14	2014-15	2015-16 (AE)	2013-14	2014-15	2015-16 (AE)
Agriculture, forestry & fishing	4.2	-0.2	1.1	17.5	16.3	15.3
Industry	5.0	5.9	7.3	31.6	31.2	31.2
Mining & quarrying	3.0	10.8	6.9	2.9	3.0	3.0
Manufacturing	5.6	5.5	9.5	17.4	17.1	17.5
Electricity, gas, water supply & other utility services	4.7	8.0	5.9	2.2	2.2	2.2
Construction	4.6	4.4	3.7	9.0	8.8	8.5
Services	7.8	10.3	9.2	51.0	52.5	53.4
Trade, hotels, transport, Communication and services related to broadcasting	7.8	9.8	9.5	18.4	18.9	19.2
Financial, real estate & professional services	10.1	10.6	10.3	20.3	21.0	21.5
Public administration, defence and other Services	4.5	10.7	6.9	12.3	12.7	12.7
GVA at basic prices	6.3	7.1	7.3	100.0	100.0	100.0
GDP at market prices	6.6	7.2	7.6	—	—	—

Source: Central Statistics Officer (CSO). AE: Advance Estimates.

TABLE 2: QUARTER-WISE GROWTH OF GVA AT CONSTANT (2011-12) BASIC PRICES (PER CENT)

Sectors	2013-14				2014-15				2015-16		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3
Agriculture, forestry & fishing	2.8	3.3	5.7	4.3	2.3	2.8	-2.4	-1.7	1.6	2.0	-1.0
Industry	3.1	3.9	4.0	1.7	8.0	5.9	3.8	5.7	6.8	6.4	9.0
Mining & quarrying	2.2	-3.0	0.5	7.2	16.5	7.0	9.1	10.1	8.6	5.0	6.5
Manufacturing	-0.8	0.5	2.4	-0.7	7.9	5.8	1.7	6.6	7.3	9.0	12.6
Electricity, gas, water supply & other utility services	-2.6	1.0	-1.5	0.4	10.2	8.8	8.8	4.4	4.0	7.5	6.0
Construction	13.3	14.6	9.9	5.2	5.0	5.3	4.9	2.6	6.0	1.2	4.0

TABLE 2: QUARTER-WISE GROWTH OF GVA AT CONSTNAT (2011-12) BASIC PRICES (PER CENT)—CONTD.

Sectors	2013-14				2014-15				2015-16		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3
Services	8.7	9.3	7.7	5.4	8.6	10.7	12.9	9.3	9.0	9.4	9.4
Trade, hotels, transport, Communication and services related to broadcasting	6.8	8.4	9.2	6.9	11.6	8.4	6.2	13.1	10.5	8.1	10.1
Financial, real estate & professional services	9.8	14.0	9.1	6.9	8.5	12.7	12.1	9.0	9.3	11.6	9.9
Public administration, defence and other services	9.6	2.9	3.2	1.2	4.2	10.3	25.3	4.1	6.1	7.1	7.5
GVA at Basic prices	5.9	6.7	6.1	4.0	7.4	8.1	6.7	6.2	7.2	7.5	7.1
GDP at market prices	6.2	7.7	6.0	4.4	7.5	8.3	6.6	6.7	7.6	7.7	7.3

Source: Central Statistics Officer (CSO).

TABLE 3: PRODUCTION OF MAJOR AGRICULTURAL CROPS (3RD ADV. EST.)

Crops	Production (in Million Tonnes)			
	2012-13	2013-14	2014-15	2015-16 (3rd AE)
Total Foodgrains	257.1	265.0	252.0	252.2
Rice	105.2	106.7	105.5	103.4
Wheat	93.5	95.9	86.5	94.0
Total Coarse Cereals	40.0	43.3	42.9	37.8
Total Pulses	18.3	19.3	17.2	17.1
Total Oilseeds	390.9	32.8	27.5	25.9
Sugarcane	341.2	352.1	362.3	346.7
Cotton#	34.2	35.9	34.8	30.5

source: DES, DAC&FW, M/o Agriculture & Farmers Welfare, 2nd AE: Second Advance Estimates., #Million bales of 170 kgs. each.

TABLE 4: PROCUREMENT OF CROPS IN MILLION TONNES

Crops	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17
Rice#	35.0	34.0	31.8	32.2	32.2#	—
Wheat@	28.3	38.2	25.1	28.0	28.1	22.1#
Total	63.4	72.2	56.9	60.2	60.3	—

Source: DEPD, M/o consumer Affairs and Public Distribution;
#Kharif Marketing Season (October-September),
@Rabi Marketing Season (April-March), Position as on 09.05.2016.

TABLE 5: OFF-TAKE OF FOOD GRAINS (MILLION TONNES)

Crops	2012-13	2013-14	2014-15	2015-16 (Till February)
Rice	32.6	29.2	30.7	31.4
Wheat	33.2	30.6	25.2	30.7
Total (Rice & Wheat)	65.9	59.8	55.9	62.1

Source: DFPD, M/o Consumer Affairs and Public Distribution

TABLE 6: STOCKS OF FOODGRAINS (MILLION TONNES)

Crops	April 1, 2015	April 1, 2016
1. Rice	17.1	22.2
2. Unmilled Paddy#	10.0	9.9
3. Converted Unmiled Paddy in terms of Rice	6.7	6.7
4. Wheat	17.2	14.5
Total Rice & Wheat) (1+3+4)	41.0	43.4

Source: FCI;

#Since September, 2013, FCI gives separate figures for rice and unmilled paddy lying with FCI & state agencies in terms of rice.

Articles

Impact of Participatory Approach and Empowerment of Local Institutions under IWMP (Integrated Watershed Management Programme) in Bihar

DR. RANJAN KUMAR SINHA*, DR. BASANT KUMAR JHA**

1.1 Introduction

As per the ICAR (2010) estimates, out of total geographical area (328.73 mha) of the country about 120.40 mha (36.62%) is affected by various kind of land degradation and 85 mha (25.85%) is rainfed arable land. An insight into the rainfed regions reveals a grim picture of poverty, water scarcity, rapid depletion of ground water table and fragile ecosystems. Land degradation due to soil erosion by wind and water, low rainwater use efficiency, high population pressure, acute fodder shortage, poor livestock productivity, underinvestment in water use efficiency, lack of assured and remunerative marketing opportunities and poor infrastructure are important concerns of enabling policies. The challenge in rainfed areas, therefore, is to improve rural livelihoods through participatory watershed development with focus on integrated farming systems for enhancing income, productivity and livelihood security in a sustainable manner. During 1985-95, rainfed regions witnessed higher agricultural growth rate of 4.01 per cent compared to 2.90 per cent in the irrigated areas. However, during the post-liberalization, the growth in rainfed agriculture decelerated to almost zero, as against that of the irrigated regions to 2.07 per cent (Sharma, 2009). The challenge before Indian agriculture is to transform rainfed farming into more sustainable and productive systems and to better support the population dependent upon it. It is, therefore, imperative for the government to focus on watershed development in rainfed areas. Watershed development refers to the conservation, regeneration and the judicious use of all the resources i.e., natural (like; land, water, plants & animals) and human within the watershed areas. Watershed management tries to bring the best possible balance in the environment between natural resources on the one side and between man and animals on the other. Since it is the people who are primarily responsible for degradation of environment; regeneration and conservation can only be possible by promoting awakening and participation among the people who inhabit the watersheds.

Keywords- Participatory approach, Integrated watershed Management programme, Rain fed agriculture, Soil erosion.

1.2 Evolution of Watershed Development in India

The earlier pre-independence incarnation of the present day watershed development consisted of preventing soil erosion in the catchment of River Valley Projects (RVPs) and various schemes on dry land agriculture, soil and moisture conservation. The objectives were empirical, thematic, commodity centric and lacked comprehensiveness of generating income, employment, equity & livelihood and integrated as well as sustainable use of natural resources including the soil capital.

The community participatory process of developing all inclusive resources within a natural geo-hydrological unit of watershed is being experimented since 1974 by different research and development endeavors. After 1982; NGOs, (Government Organizations) and donor driven resources also jumped on the bandwagon of refining the watershed development projects. Centrality of the role of gender, poverty, landless labour, indigenous technical knowledge, artisan, craft, local skills, resources and tribal people were recognized. In post 1989, the MoA, MoRD and MoEF invested in integrated natural resources management in watersheds with the aim of enhancing productivity, income, employment and environmental externalities. These ministries devised their own guidelines with a common philosophy of participation of community. Subsequently, the Hanumantha Rao Committee (1994) nailed down the principles of transparency by operating joint accounts, contribution of people's participation, role of Gram Sabha, women, landless, NGOs, SHGs, UGs and other innovative alternative institutions. It was a significant step to rechristen the role of the Government as a service provider and accommodative to Panchayati Raj Institutions.

1.3 Development of Watershed Development Programmes (WDPs)

The MoA, MoRD and MoEF along with their respective departments in the states are the three main ministries in charge of WDPs. These WDPs are NWDPR (National Watershed Development Project for Rainfed Areas) RVP & FPR (River Valley Project & Flood Prone River), RADAS (Reclamation and Development of Alkali & Acid Soils), WDPSCA (Watershed Development Project in Shifting Cultivation Areas) and IWMP (Integrated

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Watershed Management Programme). Under these WDPs, since their inception to the end of Eleventh Five Year Plan (2007-12), an area of about 58 mha has been developed. It is further revealed from a series evaluation studies conducted by ICAR institutes, SAUs, NRSC (National Remote Sensing Centre) and impact assessment studies carried out by MoA, MoRD, Planning Commission, ICRISAT (International Crop Research Institute for Semi-Arid Tropics) and the Technical Committee of the Department of Land Resources (DOLR) that the implementation of the programme has been effective for natural resource conservation by increasing the productivity of the land, bringing additional areas under agriculture, employment generation and social upliftment of beneficiaries living in the rural areas. But these successes have been sporadic and intermittent. The overall impact at the state and national levels have generally been inadequate. Additional demand and supply driven socio-economic and risk management paradigms are emerging (GoI, 2011).

It is in this context that in co-ordination with the Planning Commission, an initiative has been taken to formulate "Common Guidelines for Watershed Development Projects (CGWDPs)," which was brought out in 2008 and subsequently revised in 2011, in order to have a unified perspective by all ministries. The guiding principles of the CGWDPs are as follows:

- Equity and Gender Sensitivity
- Decentralization
- Facilitating Agencies
- Centrality of Community Participation
- Capacity Building and Technology inputs
- Monitoring, Evaluation and Learning
- Organizational Restructuring

In a nutshell, intensive facilitation for enhanced livelihood opportunities within the overall framework of the Panchayati Raj Institutions (PRIs) to the community, accountable to the Gram Sabha, is the soul of the CGWDPs.

1.4 Objectives of the Paper

The present paper seeks to examine the outreach of Integrated Watershed Management Programme (IWMP), a centrally sponsored programme launched in the year 2011-12 by the Ministry of Rural Development under the CGWDPs at the grassroot level and to suggest measures for improvement. It is based on a research study, titled "A Preparatory Phase Evaluation of IWMP for 2011-12 in Banka District of Bihar," sponsored by Directorate of Soil Conservation, Department of Agriculture, Government of Bihar, conducted during 2014-15 by Agro-Economic Research Centre for Bihar & Jharkhand, T M Bhagalpur University, Bhagalpur, Bihar.

1.5 Methods and Sources of Data

The method of preparatory phase evaluation of IWMP includes review of records and reports, used data base, minutes of meetings, focus group discussions with the primary beneficiaries, dialogue and multi stakeholders meetings and physical verification of activities with the help of a duly structured schedule; consisting of 07 components viz., Entry Point Activities (EPAs), Village Level Institution Building (VLIB), Project Implementing Agency (PIA), Capacity Building (CB), Detailed Project Report (DPR), Watershed Work (WW) and Fund Utilization (FU). Out of the total 08 projects in Banka District spread over 38004.09 hectare of treatable area, only 03 projects (IWMP-III, IV & VIII) covering 12478.8 hectare (32.84%) were selected for in depth enquiry. The scale of status and performance of the activities used under the programme in the projects area has been assessed under the categories of Excellent, very good, good, satisfactory and poor.

1.6 Study area: A Brief Profile

Banka is a newly constituted district formed in February, 1991 and is located in south-eastern part of Bihar. It has 11 blocks/talukas, 185 gram panchayats and 2114 revenue villages, constituting 1,682 (79.56%) inhabited and 432 (20.44%) un-inhabited villages. As per the Census 2011, the district has a total population of 20,34,763 persons. The literacy rate is 58.17 per cent and the population density is 674/sq km. The total geographical area of the district is 3019.04 sq kms, having 68.00 per cent total culturable land and 32.00 per cent net sown area. The cropping intensity is 135.00 per cent. The average rainfall in the district is 1156.3 mm, a little less than the state's average (1176.4 mm). The district falls in eastern sub-zone of zone-III (south zone) in the middle Gangetic plains of Bihar. Despite having natural and human endowments, Banka is one among the three bottom districts in Bihar in terms of per capita GDDP i.e., Rs. 7764 at 2004-05 prices in 2011-12 (Economic Survey of Bihar, 2013-14). A brief detail of them is as follows:

TABLE NO. 1: DETAILS OF THE SAMPLED IWMPs

SN	IWMP	Block(s)	Tot. Geo Area (ha)	Tot. Treatable Area (ha)	% of Treatable Area of the Total Geog. Area
1.	III	Banka & Katoria	8148.70	4050.93	49.71
2.	IV	Katoria	5407.38	4014.70	74.24
3.	VIII	Chandan	7124.48	4413.17	61.94

Source: DSCO Office, Banka, Bihar.

1.7 Role of Gram Panchayat

The Gram Panchayat is mandated to perform the following important functions:

- i. Supervise, support and advise Watershed Committee from time to time.
- ii. Authenticate the accounts/expenditure statements of Watershed Committee and other institutions of watershed project.
- iii. Facilitate the convergence of various projects/schemes to institutions of watershed development project.
- iv. Maintain asset registers under watershed development projects with a view to retain it after the watershed development project.
- v. Provide office accommodation and other requirements to Watershed Committee.
- vi. Allocate usufruct rights to deserving UGs/SHGs over the assets created.

1.8 Result and Discussions

The major activities of the IWMP are sequenced into (i) preparatory (1-2 years) (ii) works (2-3 years) & (iii) consolidation and withdrawal phase (1-2 years). This paper is based on evaluation of preparatory phase only. The major thrust of this phase is to build appropriate mechanisms for adoption of participatory approach and empowerment of local institutions *viz.*, WC (Watershed Committee), SHGs & UGs. Watershed Development Team (WDT) consisted of 03 members *viz.*, Engineering Expert, Social Mobilizer and Financial Expert; is an integral part of the PIA (Project Implementing Agency), assumes a facilitating role during this phase. In this phase, the main components are:

I. Entry Point Activities (EPAs)

EPAs use to establish credibility of Watershed Development Team (WDT) and create rapport with the village community, which includes;

- i. Work based on urgent needs of the local communities such as revival of common natural resources, drinking water, development of local energy potential, augmenting ground water potential etc.
- ii. Repair, restoration and upgradation of existing common property assets and structures (such as village tanks).
- iii. Productivity enhancement of existing farming systems.

Under these activities, on the recommendation of respective Mukhia of the Panchayat; repairing of wells, construction of bathrooms and pucca floor (22' x 22'),

installation of hand pumps and distribution of horticultural and nutritional plants and solar lights along with solar charging point were undertaken. The overall situation of these activities is depicted in the table as below:

TABLE NO. 2: SITUATION OF EPAs IN SAMPLED IWMP PROJECTS AREA

SN	IWMP	Quality of EPAs	Participatory Process adopted In identifying EPAs	Overall Remarks
1.	III	Good	Satisfactory	Good
2.	IV	Satisfactory	Satisfactory	Good
3.	VIII	Satisfactory	Satisfactory	Good

Source: Primary Data.

Table No. 2 indicates that the quality of the activities is good to satisfactory level. The process adopted in identifying these beneficiaries/user groups (UGs) is satisfactory, which implies that the selection of the UGs is not proper may be due to some extent of biasness of the Mukhia for transferring the benefits of the programme to his/her kith and kins or near and dear ones. Transparency in selection was lacking, as revealed from the field investigations. As regards the usage of these activities are concerned, it was at the overall level satisfactory but not excellent except in case of the selection of UGs of bathrooms, which were not found in use at the beneficiary level. It reveals the there is some understanding between the Mukhia and the PIA of the Projects.

II. Village Level Institution Building (VLIB)

The major work under these activities is to build or develop village level institutions such as Watershed Committee (WC), SHGs and UGs and capacity building of different stakeholders on institutional and work related aspects. Watershed Committee is constituted by Gram Sabha to implement the watershed project with the technical support of the WDT in the village.

i. Watershed Committee

As per the CGWDPs, WC will be a sub-committee of the Gram Panchayat and the Chairman of committee will be selected by the gram sabha in its meeting. But in Bihar, under a circular of the Government of Bihar, Mukhia becomes the Chairman of the respective watershed committee and he/she jointly operates the fund of the project with the Secretary of the respective watershed committee, appointed by the PIA from the project area. It consisted of 12 members. Of them, nine members are nominated by the gram sabha and remaining 03 members are consisted of Mukhia of the panchayat as Chairman, Secretary and one WDT member.

The study appreciates the decision of State Level Nodal Agency (SLNA) to appoint Mukhia as a Chairman

of the watershed committee. The Mukhia has the power to set priorities of the works in his/her panchayat, which minimizes the time to be spent in planning and prioritizing of the proposed works. Besides, involvement of Mukhia very much helps in office accommodation and its management through his/her power within the panchayat. Mukhia-Cum-Chairman of the watershed committee has helped the implementation of the programme, otherwise the institution of Mukhia in the panchayat would not have played positive role in implementation of the programme, as observed during our field study.

ii. Self Help Groups

Further, the watershed committee constitutes SHGs in the

watershed area with the help of Watershed Development Team (WDT), amongst poor, small and marginal farmer households, landless poor agricultural labourers, women and SC/ST members. These groups are homogenous having common identity and interest, which are dependent on the project area for their livelihood. Besides, vocational trainings, a lump-sum revolving fund is being given to the selected SHGs for undertaking livelihood support activities.

In this regard the study finds that the formation of SHGs is in accordance with the mandate. The details of them are as below:

TABLE NO. 3: SHGs PROFILE

SN	IMWP	No. of SHGs	Total Numbers	Composition of Members				
				MF	SF	LL	W	SC/ST (In %)
1.	III	100	1140		1018 (89.30 %)		1140	122 (10.70)
2.	IV	100	1110		530 (47.75%)		1110	580 (52.25)
3.	VIII	100	1100	670 (60.90)		300 (27.28%)	1100	130 (11.82)

Source: Office of the DSCO, Banka, Bihar

Out of 100 SHGs formed in each IWMP projects, 10 SHGs in each project area have been given a revolving fund of Rs. 25,000/- with a view to support their livelihood activities. These funds have been utilized in purchasing of 10 she-goats, which were found available with the 10 SHG members. Besides, 30 solar lights have also been given to 30 SHG members of each project along with one charging station. Out of the 30 solar lights, nearly half of them were not found in use due to mechanical faults. Remaining 90 SHGs in each project area were found inactive in their operational activities. They were claiming to get the same revolving fund to start their activities. Till the date of field investigation, no SHGs were found to be working under SHGs bank credit linkage. It reveals that SHGs are only formalized but not in operation in their activities, despite various trainings imparted to them for their livelihood support. It further showed that the outreach of the programme is not positive rather a circumstantial effort to achieve the targets in both terms i.e., physical & financial. It may be due to lack of motivational factors for undertaking the livelihood support activities.

iii. User Groups (UGs)

Alike SHGs, UGs have also been constituted by the Watershed Committee (WC) in the watershed area with the help of WDT. These are to be homogenous groups of persons affected by each work/activity having land holdings within the watershed areas. Each UG is consisted of those who are likely to derive direct benefits from a particular watershed work or activity. The watershed committee with the help of the WDT facilities resource use agreements among the user groups based on the principles of equity and sustainability. The UGs become responsible for the operation and maintenance of all the assets created under the project in close collaboration with the gram panchayat and gram sabha.

The study finds that the UGs have been formed by the watershed committee keeping in assignment with the interest of the Mukhia-Cum-Chairman of the respective WCs. The details of UGs are as below:

TABLE NO. 4 DETAILS OF USER GROUPS (UGs)

SN	IMWP	No. of SHGs	Total Numbers	Composition of Members				
				MF	SF	LL	W	SC/ST
1.	III	19	139	67	60	12	8	79
2.	IV	28	275	233	42	--	28	237
3.	VIII	18	139	87	52	--	24	56
Total		65	553 (100.00)	387 (69.98)	154 (27.85)	12 (2.15)	60 (10.85)	372 (67.27)

Source: PIA, DSCO Office, Banka, Bihar.
In parentheses percentage figures are shown.

Table 4 reveals that out of the 65 UGs formed in the sampled IWMPs, there are 553 members/users. Of them, 69.98 per cent are from marginal farmers, 27.85 per cent small farmers and 2.17 per cent landless labourers. In terms gender proportion, women constitute only 10.85 per cent. SC/ST's share was 67.27 per cent amongst the users. The main assets created for them are repairing of old wells, construction of bathrooms along with the repaired wells, construction of pucca floors, installation of hand pumps etc. The quality of these assets is moderately good. As regards the usage of these assets is concerned, it is good to satisfactory level. It further reveals that the civil works are mostly done by the local contractors, where as it should be done by one of the members of the respective user group. The arrangement of civil works has been made by the WDT members by taking in confidence the Mukhia-Cum-Chairman of the respective watershed committee. In a nutshell, institutional arrangement at the village level and participatory approach were not found working as have been mandated in the CGWDPs due to poor resource base of the members of the UGs and connivance of Mukhia and PIA.

III. Capacity Building (CB)

Capacity building of different stakeholders on institutional and work related aspects is one of the components of preparatory phase of IWMP projects. Under this, awareness programme (wall writings, prabhat ferry, etc.), exposure visits (for PIA, WDT, WC & Primary beneficiaries) and workshops/trainings (for primary beneficiaries) are being arranged. The overall performance in terms of quantity and quality of this component is depicted as below:

TABLE NO. 5: PERFORMANCE RATINGS OF CB PROGRAMMES

SN	IWMP	Performance
1.	III	Excellent
2.	IV	Very Good
3.	VIII	Very Good

Source: Primary data.

The capacity buildings initiatives of the stakeholders of almost all the institutions from the district to project

TABLE NO. 6: COMPONENT WISE ALLOCATION AND UTILIZATION OF THE FUND (IN LAKH RS.)

SN	IWMP	EPAs (4%)		CB (5%)		DPR (1%)	
			%	A	U (%)	A	U (%)
1.	III	19.44	18.35 (94.39%)	15.05	14.22 (94.49%)	15.19	11.81 (77.75%)
2.	IV	19.27	18.99 (98.55%)	15.12	14.25 (94.25)	15.03	11.06 (73.59%)
3.	VIII	21.18	19.17 (90.51)	15.99	14.08 (88.06%)	16.63	12.38 (74.44%)

A = Allocation, U = Utilization

Source: PIA, DSCO Office, Banka, Bihar.

area/grass root level have been taken up at large. The performance of the same as revealed from above table is very good (80-90%) to excellent (> 90%) in terms of quantity and quality of the programmes. In fact it has manifested positive effects, particularly on WDT members. But its impact on primary beneficiaries is disappointing mainly because of faulty formation of UGs, illiteracy, lack of community ownership, etc.

IV. Detailed Project Report (DPR)

DPR preparation is a crucial activity which lies with the PIA at the district level which is to be facilitated by the WDT for an identified area. It is necessary to capture the entire database of DPR in a systematic manner as a structured document at the initial stage itself. It requires a strong Participatory Rural Appraisal (PRA) exercise. After approval of the gram sabha, it is placed before the District Planning Committee, headed by the District Magistrate/Collector for its approval and thereby forwarded to SLNA for its approval. Thereafter the DPR is uploaded on the programme's site.

In the sample district, the DPR of the sample projects area have been prepared, which includes the Livelihood Action Plan & Production Enhancement Action Plan. But the process of PRA technique, presentation of the same before the gram sabha and inclusion of convergence plan were found lacking. It has been simply prepared on base line data with the help of a Lucknow based professional body. The Mukhia-Cum-Chairman has approved without organizing the gram sabha in real sense. It signifies the violation of the mass voice and priorities of the works of the respective community despite 1.00 per cent allocation of the total budget of the respective IWMP projects.

1.9 Fund Utilization

The Department of Land Resources (DoLR), allocates the budgetary outlay of the projects to the states on the basis of state level perspective and strategic plans in watershed based development projects. Similarly the state allocates to the districts. The distribution of budget for specific watershed projects for preparatory phase is only 10.00 per cent of the total costs of the projects consisting of EPAs (4%), Institutional & capacity building (5%) and DPR (1%). The project wise details of allocations and utilizations are presented in table below:

Table 6 reflects the project and component wise utilization of the fund against the allocations is satisfactory. But it should not be understood that the state government in Bihar has been initializing many measures to make local governance successful. In spite of all these steps, it cannot be told that everything is going right. Governance does not only mean managing some resources and people for a particular tenure of an institution, it is more than that. In fact the local institutions will continue to implement the schemes with government money only without blossoming into institution of self-government.

1.10 Lessons Observed

The vision of the programme was found lacking in all the Village Level Institutions such as Watershed Committee (WC) headed by the Mukhia of the respective Panchayat, SHGs and UGs. Many failures were revealed in course of the evaluation. These may be outlined as below:

i. Information Failure

Lack of awareness due to low capacity building and inadequate facilitation through the PIA was revealed in the area. In fact, the Mukhia-Cum-Chairman of the Watershed Committee was supposed to identify the entry point activities (EPAs) in the Gram Sabha, so that a good rapport of the programme could be built in the project area. But identification of these EPAs was not made in the Gram Sabha rather done at his/her personal level for outreaching of the programme to his/her Kith & Kins or dear ones. This has resulted bitterness between the UGs & Non-UGs. While going into depth, it reveals that Mukhia-Cum-Chairman of WC was told by the PIA to identify EPAs at his/her felt needs of the activities in the project area. Mukhia-Cum-Chairman was not fully aware its implications may be due to lack of awareness of the programme and low and poor capacity building exercises, which were supposed to be extended by the PIA. It was done in bureaucratic manner and hit and run method.

ii. Design Failure

It implies in the sense that local institutions have not been empowered plantation in DLH (Dry Land Horticulture) intervention of the IWMP through participatory approach. The PIA used to distribute nutritional and horticultural plant without keeping in mind the plantation suitability of the area. In fact local/village level institutions should be consulted before that. In some of the watershed areas, it was reported that plantation needs are area specific. It should be agro-forestry based plants for plain area and horticultural and nutritional based plants for undulated terrains. Besides, leveling and bunding of land in general and in undulated terrain in particular lacks in the programme.

iii. Motivational Failure

Knowing fully the responsibilities, the task is not done, for example, preparation of shelf of schemes or improper

selection of SHGs, & UGs. Motivational factors were found quite absent among the SHGs & UGs. If SHGs would have been adequately motivated; it would have linked with SHG-Bank-Linkage Credit Programme. Involvement of UGs was enriched. Out of 300 SHGs in the sampled area, none were found in undertaking any of the activities for economic emancipation. Similarly, out of 65 UGs in the study area, only a few were found to be aware about the benefits of the programme, which they have accrued.

iv. Failure in Framing Laws

The Watershed Committee (WC) is the main committee at the grass root level for planning and execution of the programme, which operates without laws. The SLNA has nominated Mukhia as Ex-officio Chairman of the Watershed Committee. No doubt, it is an appreciable decision but the question arises that how a WC will function without having its own bye-laws. The need of bye-laws was seriously felt in the project area.

1.11 Suggestions

If the failures, as discussed in preceding section, are not corrected, the governance of the local area by local institutions will remain a miss-match. It is, therefore, imperative to make necessary corrections in the implementation of the IWMP, which may be suggested as below:

- i. Local plans are to be framed on the basis of local priority and strictly through the Gram Sabha.
- ii. The WC should convene meetings of the Gram Sabha, Gram Panchayat, Watershed Committee for facilitating the decision making process in the context of Watershed Development Project.
- iii. Bye-laws for Watershed Committee should be framed as early as possible so that local governance may not be diluted.
- iv. Instead of emphasizing the number of trainings and awareness programmes, focus should be given on increasing the quality and duration of the programmes.
- v. Efforts should be made to bring, SHGs under the 'SHG-Bank Linkage Credit Programme' for their sustainability and undertaking diversified income generating activities.
- vi. Exposure visits to model project area, where grass root level local institutions are highly functional, should be arranged for the stakeholders involved in village level institutions of the IWMP.
- vii. Regular visits of the professionals/experts from the research institutes should be ensured by the SLNA & PIA.

- viii. Last but not the least, village level institutions need basic infrastructure, and proper & regular trainings to its functionaries.

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NBFCs in India¹ - A Viable Alternative for Value Chain² Financing

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Abstract

Development objectives can be accomplished through sustainable value chain models. The available institutional support to agriculture deserves comprehensive study that ratifies the functional survival of those institutions in terms of agricultural scaffolding and thereby value addition. Value chain activities generally became lifeless due to acute shortage of funds in time. Commercial banks are criticized here to bring the idea of Non-Banking Finance Companies- as viable intermediaries for value chain construction. The study recognizes the quantity of food grains produced as proxies of value chain creation. Direct and indirect finance available to agriculture is analyzed. By using secondary data and simple statistical tools, this study endeavours to determine the viability of NBFCs in mediating value chains finance.

Keywords: Non-Banking, Finance companies, Value chain finance, Agriculture.

Introduction

As Quality perceptions play a critical role in purchase decisions of locally produced agricultural products, pursuing value based strategy like, Credence attributes³ is imperative (Jekanowski, Williams II, & Schiek, 2000; Dentoni, 2009). Brand agriculture represents a general strategy for a community based rural development (Fujita, 2006), as it expands domestic and international demand (Haimid, Rizky, & Dardak, 2012). For this, farmer collectives play a significant role in productivity enhancement, access to finance and improving income realization through taking up value addition activities (Srinivasan, 2012). Thus one of the significant components of rural finance is Value chain finance, (Khan, 2014) which is basically—the flow of funds to and among the various links within a value chain comprise. It is a comprehensive and holistic approach (Miller & Jones, 2010), which integrates small and marginal farmers through various

market linkages, with the help of agricultural enterprises for high value commodities and based on market demand, comparative advantage and farmer preferences in a given area (Saleque, 2007). Development objectives can only be accomplished through sustainable value chain models, which are driven by internal arrangements, such as linkages among various operators and external factors-business environment (Noni & Rugamba, 2013). Micro Finance Institutions usually trigger initialization and strategic development of value chain activities in agriculture as these institutions help to create a link between primary producers and successive upper echelon players in the chain (UNDP, 2012). Global agriculture-for-development agenda requires specialized institutions that have long term support and commitment (World Bank, 2008). So, the available institutional support to agriculture deserves attention that ratifies the functional survival of those institutions in terms of agricultural scaffolding and thereby value addition.

Literature Review

It was Wilkinson and Rocha (2009) who identified a high correlation between the ratio of food-processing to agricultural value added and income per capita for a sample of developing countries. The idea regained importance when Borbora (2014) established the fact by empirical evidence and suggested careful analysis and selection of value chains for inclusive growth. Interconnectedness between economies poses a challenge of transmission of economic shocks along the value chains (Backer & Miroudot, 2014). It demands micro finance institutions, which are shifting from social institutions to more profitable ventures (Tiwari, 2012). Intermediary institutions, which mobilize farmers work and their interest, would bring inclusive growth and income enhancement in the hands of small farmers (Srinivasan, 2012). This paper is based on the concept that ratifies importance of NBFCs in Value chain Finance.

¹ Apart from Non Banking Finance Companies (NBFCs), other micro finance alternatives are there, and are performing better in providing specified advances to needy without considering collaterals. Although, some of the NBFCs are labeled as shadow banks in India, genuine intermediation is possible by these institutions under a genial regulatory framework. Authors are heavily indebted to Viral V Acharya, New York University Stern School of Business, NBER and CEPR, pioneer in establishing true characteristics of shadow banks in India.

² Agricultural value chain involves in the activities ranging from of the input suppliers, of intermediaries, producers and of the provider to ultimate consumers.

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³ Credence attributes are product features that consumers cannot verify before, during or after the consumption, but still can perceive and value.

Rationale behind participation of NBFCs in value change finance mechanism

Loans from banks to NBFCs⁴ for on-lending to agriculture are considered as indirect finance to agriculture. Such on-lending will strengthen the functioning of NBFCs and offer an efficient channel to banks for deploying the earmarked funds in priority sector that would bring about financial inclusion. Provision of credit and other financial services and products of very small amounts not exceeding Rs. 50,000 per borrower, either directly or indirectly through a SHG/JLG mechanism or to NBFC/MFI for on-lending up to Rs. 50,000 per borrower, will constitute micro credit. Commercial banking and other financial institutions alone will not produce the desired results. Value chain activities generally became lifeless due to acute shortage of funds in time. NBFCs are viable intermediaries that regularly connect the poor with various financial institutions and help to avail the required resources (Pandey & Kumar, 2011). Recent period witnessed drastic fallout in agricultural production accompanied with insufficient intermediation entertained by commercial banking sector in India. NBFCs are rare models that came into discussions where the authorities think about alternatives. The approach legitimately reflected when the participation of NBFCs in on-lending restricted from 2011 onwards. At the same context, inabilities of commercial banks are regularly made out by the reconstruction of monetary policies. In this study, we try to establish the viable role of NBFCs in providing agricultural value chain finance, especially in the form of indirect finance.

Methods

Primary food grains production will definitely determine the volume of value chain activities. The available financial

infrastructure to the agriculture and allied activities is in the form of direct and indirect finance. The study is exploratory in nature as it tries to identify the viable role of NBFCs in agricultural value chain finance. Shortcomings of existing intermediation in the field of agricultural finance, especially of commercial banks are criticized here to bring the idea of Non Banks viable intermediaries for value chain construction. Data gathered from secondary sources are analyzed using simple statistical tools such as percentage and growth analysis. As mentioned earlier, the study recognizes the food grains productions as proxies of value chain creation. Although Past five years data is analyzed to reach at conclusions, in certain areas, it is supplemented with the data starting from 1976 onwards. Majority of the data gathered from the publications and data bank of Reserve Bank of India (RBI), National Bank for Agriculture and Development (NABARD), Planning Commission and Ministry of Agriculture. Indirect finance available to various states, total finance available from different institutions, total food grains production, total direct and indirect finance from commercial banks and NBFCs participation in on-lending activities are studied as variables to determine the viable role of NBFCs in agricultural value chain finance.

Spatial Distribution of Finance and Agricultural Production in India

Delhi (18%) and Maharashtra (17%) are the two states that got major shares of indirect finance for agriculture from scheduled commercial banks during the year 2004-05.

TABLE 1 STATE WISE DISTRIBUTION OF SELECT ITEMS OF SCHEDULED COMMERCIAL BANKS' ADVANCES TO AGRICULTURE

(Rs In Millions)

Year	2004-05 Amount Outstand- ing	2005-06 Amount Outstand- ing	2006-07 Amount Outstand- ing	2007-08 Amount Outstand- ing	2008-09 Amount Outstand- ing	2009-10 Amount Outstand- ing	2010-11 Amount Outstand- ing	2011-12 Amount Outstand- ing	2012-13 Amount Outstand- ing
1	2	3	4	5	6	7	8	9	10
NORTHERN REGION	131053	238060	292265	285281	293776	478257	441328	367659	185189
Chandigarh	18627	26810	34894	29173	31880	56889	58832	21666	15049
Delhi	65363	144108	160085	136631	128855	237957	192694	128352	43182
Haryana	7987	12079	22231	34156	43174	63527	69499	71572	41122
Himachal Pradesh	1044	3126	3801	2911	1638	4984	3640	7535	2999
Jammu & Kashmir	4919	3737	3301	3364	4126	3425	3702	3333	5260
Punjab	19663	27390	33762	41447	48970	83647	80647	94574	44650

⁴ Although the indirect finance leads to synchronization of loans and advances available to different categories of micro finance institutions, in this context, the share of funds available to Non Bank intermediaries is important. It deserves attention, as the other counter parties in micro finance category functions within the prescribed frame work- envisaged for specific activity.

TABLE 1 STATE-WISE DISTRIBUTION OF SELECT ITEMS OF SCHEDULED COMMERCIAL BANKS' ADVANCES TO AGRICULTURE—*Contd.*

1	2	3	4	5	6	7	8	9	10
Rajasthan	13449	20811	34191	37599	35131	27829	32314	40626	32925
NORTH EASTERN REGION	1219	1366	1576	2109	4640	6192	7903	10313	6617
Arunachal Pradesh	5	15	5	27	119	126	162	192	55
Assam	536	800	916	1489	3198	4539	5667	7812	5452
Manipur	54	39	81	20	69	84	198	105	162
Meghalaya	387	324	430	369	643	683	747	134	123
Mizoram	5	13	6	-	130	156	184	165	42
Nagaland	54	91	59	49	242	284	334	1181	170
Tripura	177	84	79	155	238	321	611	724	613
EASTERN REGION	23754	36427	40238	71561	105680	136570	158113	155519	134960
Andaman & Nicobar	10	29	19	5	37	33	45	23	141
Bihar	2255	7313	3987	5139	7870	11973	16118	19890	20635
Jharkhand	763	817	824	1328	3031	4068	5364	14200	6200
Orissa	2021	2773	4232	10285	20905	36417	45809	20776	24113
Sikkim	11	18	193	209	156	56	140	76	66
West Bengal	18693	25477	30983	54595	73682	84022	90638	100554	83805
CENTRAL REGION	19408	42027	63861	72524	116473	163800	184363	179517	162204
Chhattisgarh	492	2642	7053	6696	12565	35334	22391	13226	17516
Madhya Pradesh	8403	12843	11572	20438	38333	46940	55888	63298	52409
Uttaranchal	748	612	874	2326	3871	6091	8757	8991	20448
Uttar Pradesh	9765	25930	44362	43065	61705	75436	97327	94002	71831
WESTERN REGION	81763	130638	249614	283108	218587	263381	241219	249519	247677
Dadra & nagar Haveli	0	1	1	2	6	4	13	64	60
Daman & Diu	-	2	2	8	14	7	11	1	1
Goa	17	99	72	893	2636	4317	3929	999	3199
Gujarat	20636	25115	34831	36097	48385	65241	68825	111667	86270
Maharashtra	61110	105420	214708	246109	167545	193811	168440	136788	158146
SOUTHERN REGION	103514	158946	178085	219846	298922	407041	436301	463326	374373
Andhra Pradesh	35843	55620	44148	67880	103732	151378	173574	226876	168101
Karnataka	34348	41948	45342	52763	57241	66902	76706	82076	74983
Kerala	6699	13177	23520	34280	38793	52739	56482	35330	32191
Lakshadweep	-	1	1	0	0	0	0s	14	10
Pondicherry	131	352	348	236	425	883	1104	1205	639
Tamil Nadu	26492	47848	64726	64686	98731	135138	128435	117824	98448
ALL INDIA	360711	607463	825639	934430	1038077	1455242	1469227	1425853	1111018

The share of Delhi again increased to 24% during 2005-06. Again, Maharashtra got 17% of total indirect finance in the year 2005-06. The two regions are epitome of urbanization in India and sufficiently backed by fair number of micro finance institutions. During that time, commercial banks in particular regions were groping for eligible borrowers and, total area under cultivation was fairly high, excluding Delhi. The evidence build up on the fact that the agricultural finance can be regarded as a subset of rural finance whereas the larger companies at the ends of value chains are commonly located in large towns/cities (Hollinger, 2011). During 2011-2012, Andhra Pradesh got

highest share (16%) while North eastern states are the least beneficiaries of indirect finance. This reimburses the position of middle players in the value chain activities. There is no doubt that the beneficiaries in Andhra Pradesh are largely the proxies of priority sector. Apart from large plantations, small value chain ventures shall be promoted with the assistance of indirect agricultural finance. Indirect finance for agriculture again tended swiftly to southern region as Andhra Pradesh (15%) became the largest consumer in the year 2012-13. The distribution of finance through commercial banks to agriculture and value chain is in a more skewed manner profoundly towards the industrial areas, supporting the literature.

TABLE 2: FLOW OF INSTITUTIONAL CREDIT TO AGRICULTURE SECTOR

	(Rs Crore)					
Particulars/ Agency	1999-00	2004-05	2010-11	2011-12	2012-13	2013-14*
(a) Production(ST) Credit						
Cooperative Banks	14771	17157	69038	81829	102592	113574
RRBs	2423	10010	38121	47401	55957	70697
Commercial Banks	11697	36793	NA	266928	314951	388730
Other Agencies	74	104	0	0	0	0
Sub Total(a)	28965	74064	107159	396158	473500	573001
(b) MT/LT Total						
Cooperative Banks	3489	4074	9083	6134	8611	6389
RRBs	749	2394	6172	7049	7724	11956
Commercial Banks	13036	44688	NA	101688	117540	120275
Other Agencies	29	89	0	0	0	0
Sub Total(b)	17303	51245	15255	114871	133875	138620
ST+MT/LT Credit						
Cooperative Banks	18260	31231	78121	87963	111203	119963
RRBs	3172	12404	44293	54450	63681	82653
Commercial Banks	24733	81481	345877	368616	432491	509005
Other Agencies	103	193	0	0	0	0
Grant Total(a+b)	46268	125309	468291	511029	607375	711621
Percentage Increase		170.83	273.71	9.13	18.85	17.16

*Provisional, NA:Not Available, ST:Short Term, MT:Medium Term, LT:Long Term

Source: Department of Agriculture and Cooperation, Credit Division, Ministry of Agriculture.

Post liberalisation era was sufficiently supported with institutional finance to agriculture. The period from 1990 to 2005 witnessed a 170.83 percentage increase in total finance available to agriculture. It is presumed that the financial coverage was not solely focused on mere primary agricultural activities. The idea of value chain development and arrangement of concerned financial infrastructure was one of the predominant conditions

stipulated by world level agencies and prominent trading partners. A period of six years from 2005 to 2011 again benefited with fair consideration by authorities, policy makers and intermediaries, as the increase in institutional finance was spectacular one, viz 273.71%. The period 2011-12 witnessed a moderate increase in institutional support, unexpectedly affected food grain producers (Table 2). The consequences largely affected the coming years also.

Quantity of short term finance did not raise or even reach timely to the value chain producers. Here, the primary food grain supply will surely represent the much related value chain activities.

TABLE 3. FOOD GRAIN PRODUCTIONS AND GROWTH

Year	Food Grains (million tonnes)	Increase/Decrease	Percentage increase/decrease
1950-51	50.8		
1960-61	82	31.2	61.41
1970-71	108.4	26.4	32.19
1980-81	129.6	21.2	19.55
1990-91	176.4	46.8	36.11
2000-01	196.8	20.4	11.56
2009-10	218.1	21.3	10.82
2010-11	244.5	26.4	12.10
2011-12	259.3	14.8	6.05
2012-13	257.1	-2.2	-0.84
2013-14	264.77*	7.67	2.98

Source: Economic Survey 2013-14 and CSO

* 4th advance estimate

Contradictory movement in food grains production is visible in two extreme periods a pre and post liberalized periods. Drastic decrease in food grains production after liberalization was one of the compelling factors increase subsidies and also priority sector lending. Direct loss is

visible in the case of subsidies, and indirect drainage-priority sector lending often hidden in the name of national interest and social welfare or somewhat else. In fact, a three dimensional credit system operates here direct credit, indirect credit and subsidized inputs. The period 2011-12 and 2012-13 are the real documents of uncontrollable and ill comprehensive organized lending to agriculture. There is no doubt that these grains are the fundamentals of value chain activities in our economy. Lenient encouragements in the form of direct and indirect credit are a dominion feature, with these producers in India. Accumulated assistance to food grain producers definitely backed by the augmented value addition, rather than inclining on the justification of mere poverty eradication strategy.

Expectation and Materialization: Backing of Commercial Banks

Agricultural credit flow has increased consistently and it reached Rs. 5,11,029 crore during 2011-12 comprising 108% of the target and in 2012-13 at Rs.6,07,375 crore against the target of Rs.5,75,000 crore comprising 106% of the target. Against the target Rs.7,00,000crore during 2013-14, the achievement was Rs.711,621 crore. A target of Rs. 8,00,000 crore had been fixed for 2014-15 and the achievement was Rs.5,45,744.12 crore (provisional) upto December, 2014⁵. Literature supports the positive role of agricultural finance in overall agricultural production in India. But the presented facts contradict the idea. Changes in approaches are necessary and the proportion of direct and indirect credit will largely affect the aggregate agricultural production. Best proportion is one which prudentially relies on extra determinants especially the global practices.

TABLE 4. SCHEDULED COMMERCIAL BANKS' OUTSTANDING ADVANCES TO AGRICULTURE

Year (end-March)	Total Direct Finance	Distribution of Fertilisers and Other Inputs	Indirect Finance			Total Indirect Finance (3+4+5+6)	Total Direct & Indirect Finance (2+7)	Increase/Decrease	Percentage increase/decrease
			Loans to Electricity Board	Loans to Farmers through PACS/ FSS/ LAMPS	Other type of Indirect Finance				
1	2	3	4	5	6	7	8	9	10
1976-77	10.06	1.08	0.9	0.46	0.95	3.37	13.43		
1977-78	12.85	1.31	0.8	0.62	1.78	4.55	17.4	3.97	29.56069
1978-79	17.29	1.09	0.9	0.86	2.92	5.79	23.08	5.68	32.64368
1979-80	27.89	2.06	1.5	1.17	3.16	7.84	35.73	12.65	54.80936
1980-81	28.88	2.13	1.8	1.13	3.74	8.83	37.71	1.98	5.541562
1981-82	40.61	3.01	2.7	1.55	5.05	12.27	52.88	15.17	40.22806
1982-83	49.03	2.67	3.6	1.68	5.41	13.3	62.33	9.45	17.87065
1983-84	61.36	3.07	4.3	1.78	5.7	14.86	76.22	13.89	22.28461
1984-85	76.12	4.01	3.9	1.93	4.34	14.2	90.32	14.1	18.49908
1985-86	91.6	4.35	3.7	2.03	4.15	14.25	105.85	15.53	17.19442

⁵Annual Report 2014-15, Department of Agriculture and cooperation, Krishibhavan New Delhi, 2015, Ministry of Agriculture.

TABLE 4. SCHEDULED COMMERCIAL BANKS' OUTSTANDING ADVANCES TO AGRICULTURE—*CONTD.*

1	2	3	4	5	6	7	8	9	10
1986-87	106.07	3.87	4.8	2.37	4.18	15.2	121.27	15.42	14.56778
1987-88	124.01	3.9	4.7	2.66	4.26	15.55	139.56	18.29	15.08205
1988-89	138.44	4.47	3.3	2.6	5.03	15.41	153.85	14.29	10.23932
1989-90	155	3.35	5	2.67	3.31	14.29	169.29	15.44	10.03575
1990-91	161.45	3.29	3.6	1.99	2.99	11.89	173.34	4.05	2.392344
1991-92	173.97	2.41	6.6	1.77	3.6	14.33	188.3	14.96	8.630437
1992-93	189.49	2.68	7.1	1.83	3.92	15.52	205.01	16.71	8.874137
1993-94	194.65	3.64	9	2.05	6.35	20.99	215.64	10.63	5.185113
1994-95	213.34	5.36	12	2.24	9.4	28.65	241.99	26.35	12.21944
1995-96	238.14	7.56	11	2.85	15.75	36.74	274.88	32.89	13.59147
1996-97	274.48	9.68	12	2.85	25	49.86	324.34	49.46	17.99331
1997-98	294.43	12	14	3.63	33.55	63.35	357.78	33.44	10.31017
1998-99	330.94	14.9	16	4.07	45.92	81.17	412.11	54.33	15.18531
1999-00	364.66	16.8	17	4.49	91.21	129.68	494.34	82.23	19.95341
2000-01	404.85	23	17	3.77	144.47	188.25	593.1	98.76	19.97815
2001-02	465.81	33	18	9.28	121.66	182.38	648.19	55.09	9.288484
2002-03	568.57	32.4	30	9.49	165.34	236.9	805.47	157.28	24.26449
2003-04	707.81	41.2	35	7.23	201.46	285.2	993.01	187.54	23.2833
2004-05	955.65	51.3	42	8.61	259.02	360.71	1316.36	323.35	32.56261
2005-06	1348	64.4	65	7.69	435.01	571.75	1919.73	603.37	45.83625
2006-07	1721.3	85.2	113	13.6	613.69	825.64	2546.92	627.19	32.67074
2007-08	2146.4	-	-	15.42	919.01	934.43	3080.87	533.95	20.96454
2008-09	2648.9	-	-	5.99	1101	1107.02	3755.95	675.08	21.91199
2009-10	3177.7	-	-	12.94	785.04	1455.54	4633.21	877.26	23.35654
2010-11	3602.5	-	-	8.8	621.59	1469.23	5071.76	438.55	9.46536
2011-12	4407.6	-	-	7.97	637.71	1425.85	5833.43	761.67	15.01786
2012-13	5343.3	-	-	-	-	1111.02	6454.33	620.9	10.64382
2013-14	6273.1	-	-	-	-	2647.56	8920.67	2466.3	38.21218

PACS : Primary Agricultural Credit Societies

FSS : Farmers' Service Societies

LAMPS : Large-sized Adivasi Multipurpose Societies

Notes : 1. Data for 2004-05 to 2012-13 are provisional.

2. For 1979-80, data relate to end-December.

3. On account of revised guidelines on PSA lending *w.e.f.* September 2007 and revised reporting system *w.e.f.* April 1, 2013 break- up of indirect finances is not available.

4. : - Not Available.

Source: Reserve Bank of India (RPCD Central Office - Statistical Division).

Quantum of finance available to agri-business activities definitely spurs exorbitant values, which is the sole determiner of survival. The period 2003-04 is the triggering point where one can see the steep increase in the availability of direct and indirect credit to agriculture (See table 3). Commercial banks are the recognizable

channel that spectacularly exhibit direct and indirect finance. Although there are other formal and informal agencies, commercial banks are really backed by public confidence. That public confidence had not been assisted much to the value adders, as the primary grains producers were the worst performers, especially after liberalization.

Again the GDP contribution of agriculture and allied sector did not increase as much during 2003-04⁶. In a nut shell, Direct and indirect finance leap did not augment an increase in agriculture as expected.

Non Banking Finance Companies (NBFCs) - Alternative.

Active participation of NBFCs was there in providing indirect finance to agriculture till 2011. In the context of unexpected fall in agricultural production and value addition, the support of NBFCs is imperative, as it complements the commercial banking system in our economy.

TABLE 5. LOANS TO NBFCs FOR ON LENDING TO INDIVIDUAL FARMERS OR THEIR SHGS/JLGS

Year	No of Accounts	Balance Outstanding	Percentage
2008	5728	1038	
2009	131628	2628	153.17
2010	6239	5530	110.42
2011	190388	6678	20.75

Source: Various issues of RBI's Statistical Tables Relating to Banks in India.

Reach of NBFCs, especially in rural area is a more important matter and genuine NBFCs can play for a positive role for the agro communities. More efforts are necessary from the part of Government to develop NBFCs in the ideal manner. Arguably, appearance and participation of NBFCs in agricultural finance, in the form of value chain finance, elevate the whole platform of indirect finance. The period from 2011 onwards rallied with more restricted indirect finance, especially the NBFCs' contribution. The context deserves direct and indirect assistance, without considering the formal-non formal attire of service providers. Regional specifications occasionally demand the assistance of non-formal and semi-formal financial service providers. The context again offers the availability of numerous Non Bank Intermediaries, which are seeking potential avenues for deployment of funds for unbanked sectors such as agriculture. Authorities can think about the development of regulatory framework exclusively for NBFCs in terms of value chain finance. The quantum of stringent measures would not reveal the efficiency of such intermediaries, rather the regulatory measures should be fitted well to the financial requirements of value adders.

Concluding Remarks

Regional distribution of indirect finance (agriculture) is analyzed to ratify the gap formulated by commercial banking system in rural areas and establish the literature

that had interpreted the accumulative nature of financial intermediaries in certain industrial areas. In this context, the study postulates the possible intermediation by NBFCs for unbanked sectors like agriculture. By taking into account the short term and long term flow of credit to this sector. As well as region wise analysis. Contribution of food grains into the economy and growth of production are prime determinants of success of value chain and economic growth. Scheduled commercial banks' total direct and indirect finance to agriculture were also studied and found to be inefficient in intermediation. This establishes the complementary role of NBFCs in value chain creation and development. In the present scenario, commercial banks alone are not in a position to undertake all the inclusionary measures. In arranging the indirect finance, NBFCs are good alternatives among microfinance institutions.

Laxity of integration is apparent in overall agricultural financing. Strategic channelization of funds is necessary as value chain development, a vertical integration, for flow of technicalities and institutional finance. An inclusive development goal means more elaborated participation of agriculture sector. Non Banking Finance Institutions are not counter parts rather these firms are complementary even in the case of agricultural value chain financing.

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⁶Percentage share of Gross Domestic Product from agriculture and allied sector during 2002-03 was 20.9. It rose only to 21.0 during the year 2003-04 (Planning Commission Report).

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Status of Agricultural Marketing Reforms in Tamil Nadu

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Abstract

In India, agricultural marketing has witnessed tremendous changes since the last six decades. It plays a crucial role not only in stimulating production and consumption, but also in accelerating the economic development. It assumes importance as the multiplier of agricultural development. The important thing to be noted here is that increasing demand for those goods whose prices are relatively high induces the farmer to cultivate crops where returns are higher. The modernization of agricultural market is essential for the development of the farmers and consumers in India as well as Tamil Nadu. There has been a need for intensive policy measures for the agricultural marketing in the recent days. The marketing policy for agriculture has considerably enhanced after the economic reforms in 1991. The objective of the reforms was to improve the agriculture marketing sector. A large quantity of the agricultural produce is not recognized by the domestic markets as well as world market; it is because of lower quality of the agricultural produce of the farmers in India. The agricultural produce of our country finds it rather difficult to compete in the international market due to globalization of the economic system. Therefore, there is need for the intervention of the government to solve this problem.

Keywords- Agricultural marketing, Economic reforms, Globalization, International market.

Introduction

In India, agricultural marketing has witnessed tremendous changes since the last six decades. It plays a crucial role not only in stimulating production and consumption, but also in accelerating the economic development. It assumes importance as the multiplier of agricultural development. The important thing to be noted here is that increasing demand for those goods whose prices are relatively high induces the farmer to cultivate crops where returns are higher.

In olden days, before the introduction of the money, the barter system was in vogue, and with the introduction of money, it became a medium of exchange and in addition to this there were changes in the farming pattern. The self-sufficient village economy transformed itself into market economy where the production was carried on for the market. Trade in olden days was a trade in surplus. Hence,

it did not affect the basic self-sufficiency of the village. In India, an effective marketing system became an essential key to the entire nation (National Planning Committee, 1947). An efficient marketing system would increase the income level of the farmers and satisfaction of the consumers. The movement of agricultural produce from the farmers to the consumers at the lowest cost is decided by the market mechanism. A consumer derives maximum satisfaction when goods are available at the lowest cost.

The modernization of agricultural market is essential for the development of the farmers as well as consumers in India. There has been a need for intensive policy measures for the agricultural marketing in the recent days. The livelihoods of farmers as well as local traders are threatened due to the growth of the modern organized market. Globalization and liberalization of the market economy are reducing the role of the State in the globalised economic system. Alternatively, the role of the private sector and the corporate sector has increased due to the high competitiveness in the market economy. The modernization of the market system is offering useful economic opportunities to the farmers, the small scale producers and the consumers in the food chain process. A new type of buyer in the rural area is competing for the farmer's produce. Therefore, we need modernization of procurement system and there is also a need for integrated approach for modernization of supply chain to the small scale producers. They are ready to participate in the growth process of the Indian economic development (World Development Report, 2008).

A good marketing system is very useful for the development of agricultural sector. This system is one of the factors that determine the economic development of the nation. The determining factors are proper marketing system, and the active role that are profitable to the farmers. In addition to these, a well organized agricultural marketing is very helpful to the farmers for the promotion of agriculture development. The marketing system and the government would help the farmers and the consumers to attain the maximum benefits.

Generally speaking, agricultural marketing, is not well organized in Tamil Nadu. Farmers lack appropriate training in post-harvest handling and because of this, a significant percentage of the produce is lost. The estimated

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losses in the marketing chain are around 10 percent for foodgrains and 30 percent for fruits and vegetables. About 10 percent of the foodgrains are traded in the regulated markets. The remaining 90 percent of the items are sold in the unregulated markets. The national and state co-operative marketing federations are involved in processing, storage, export and price stabilization activities. Agricultural markets in fruits and vegetables are organized in different States to eliminate intermediaries and the majority of the state level institutions do not support the farmers to sell their agricultural produce at grassroot level. In Tamil Nadu, about 65 percent of rice, 70 percent of groundnut and gingerly and 92 percent of maize are handled by the village traders. The commission agents are involved in vegetable transaction to the extent of 85 percent and for banana, it is 100 percent. This indicates the dominance of unorganized and non-formal channels in marketing.

The Potential of Agricultural Marketing System in Tamil Nadu

Tamil Nadu, the second most industrialized state, is having great potential to develop a vibrant agrarian economy through agro-industrialization. The state exports commodities like tea, sugarcane, cotton, tobacco, groundnut and banana. It has potential to produce the agricultural products in certain geographical areas within the districts. It also has a great potential advantage in agro-climatic zones, trained manpower availability, investment trust and government support. It is endowed with abundant natural resources like fertile land, good irrigation system, varied soil and climatic conditions, good support in terms of industries and technical knowledge. This kind of position is creating a lot of opportunity to develop the agrarian sector. The state witnessed a moderate agricultural growth in 2010-2011. The average growth rate was 12 percent. The development of agriculture related infrastructure like storage facilities, transportation to rural areas, mechanization and grading standards, export promotion, processing industry support and market-intelligence are needed for effective utilization of agricultural marketing system.

Agricultural marketing plays a very important role in the farmers' life and without marketing; they could not sell their produce. Therefore, there is need for efficient and well organized marketing system to ensure fair price for the farmers and the consumers. It will reduce the middlemen, the commission agents and traders' exploitation in the market. In order to solve this problem in Tamil Nadu, the Royal Commission was established in 1928 for the welfare of the farmers to protect them from the traders' exploitation. In addition to this, it would help to give better prices, create selling facilities and also the basic amenities to the farmers. The Commission gave its recommendations to the Government of Madras. The government enacted the Madras Commercial Crops Market Act in 1933. This

is a landmark Act in the system of agricultural marketing in Tamil Nadu. This Act was modified into Madras Agricultural Produce Market Act in 1959. This Act recommended the formation of the market committee in every district of Tamil Nadu. It was meant to help in the process namely, buying and selling the agricultural produce. Subsequently, the 1959 Act was revised as, "The Tamil Nadu Agricultural Marketing (Regulation) Act" in 1987. This came into effect from 1991. At present, there are 17 Market Committees with 272 regulated markets covering the entire State except Chennai and Nilgiris districts.

The marketing policy for agriculture has considerably enhanced after the economic reforms in 1991. The objective of the reforms was to improve the agriculture marketing sector. A large quantity of the agricultural produce is not recognized by the domestic markets as well as world market; it is because of lower quality of the agricultural produce of the farmers in India. The agricultural produce of our country find it rather difficult to compete in the international market due to globalization of the economic system. Therefore, there is need for the intervention of the government to solve this problem.

The Government of Tamil Nadu has taken many measures for the development of agricultural marketing. The institutions like Tamil Nadu State Agricultural Marketing Board, Regulated Markets and Farmers Markets play pivotal role in the agricultural marketing system.

Tamil Nadu Agricultural Produce Marketing (Development and Regulation) Act 2011

The Directorate of marketing, market committees (21) and regulated markets (277) are under the control and management of Tamil Nadu Agricultural Produce Marketing (Regulation) Act 1987 and Rules 1991. About 40 agricultural commodities are identified under Tamil Nadu Agricultural Produce Marketing (Regulation) Act 1987. Fruits and vegetables, cattle, poultry, sheep, pisciculture and apiculture products are important commodities.

Later on, amendments were made by the Government of India for the Model Act 2003 and the Model rules in 2007. They are as follows;

- Establishment of private markets/yards, direct purchase centres, consumer/farmers markets for direct sale and promotion of public-private partnership in the management and development of agricultural markets.
- Separate constitution for special markets for commodities like onions, fruits, vegetables and flowers.
- A separate chapter should be included in the legislation to regulate and promote contract-farming arrangements in the country.

- Prohibition of commission agency in any transaction of the agricultural commodities with the producers.
- Redefining the role of State Agricultural Marketing Boards to promote standardization, grading, quality certification, market-led extension and training of farmers and market functionaries in the marketing related areas.
- Facilitating e-trading, direct purchasing, export, forward/future trading and introduction of negotiable warehousing receipt system in respect of the agricultural commodities.

Uzhavar Sandhaigal (Farmers' Markets)

The Government of Tamil Nadu introduced the farmer's markets (uzhavar sandhaigal) in Madurai in 1999 for the welfare of the farmers and the consumers. The objective of these markets was to encourage direct selling of the agricultural commodities like fruits and vegetables at a reasonable price by the farmers to the consumers without any middleman's involvement. This market has reduced the gap between the farmers and the consumers. It is running under market committee. At present, there are 179 farmers markets in Tamil Nadu. In order to promote direct marketing facilities, the *Uzhavar Sandhaigal* have been set up in the urban areas in Tamil Nadu for the benefit of the farmers as well as the consumers. Farmers get higher price which is 10-15 percent more than the prevailing wholesale market price and the consumers also get benefit by paying 5-10 percent less than the prevailing retail price due to the absence of the middlemen. This market is very successfully going on now for the benefit of the common man. This market has the potential of reducing inflation and safeguarding the interests of farmers as well as buyers.

Regulated Markets

The regulated markets act as a common forum for the farmers and the traders to meet and sell their goods at reasonable prices. The main objective is to abolish the intermediaries in the market. There are 277 regulated markets, 164 rural godowns and 188 godowns are functioning under 21 Market committees in Tamil Nadu. In addition to that, there are 288 transaction sheds, 353 drying yards, 89 farmers' rest houses, 183 sanitary facilities, 10 Rural Business Hubs (RBHs) and 189 market information facilities in regulated markets. During the Eleventh Five Year Plan period, around 17.50 L.MT/ per annum agricultural commodities were transacted; about 4.37 lakh farmers were benefited by regulated market transactions.

The pledge loan system is one of the foremost systems for the welfare of the farmers during the transaction of agricultural procurement in the market. The farmers are safeguarded from suffering due to loss of agricultural produce during the harvest season and also from the lower

price for their produce. Further, farmers are allowed to safeguard their produce in the godowns of the regulated market. It also helps the farmers in a keeping proportion of their produce as seed corn without wastage and in making preparations for next cropping season. The small and marginal farmers are availing of the schemes. The farmers are availing the loan amount of Rs. 2.0 lakh at 5 percent rate of interest and the repaying period is 6 months. The traders are also availing this loan with 50 percent value of their produce. They get maximum amount of Rs. 1.0 lakh with 9 percent rate of interest and repaying period is within three months.

Cooperative Marketing Societies (CMS)

In Tamil Nadu, there are 110 marketing societies functioning for the welfare of the farmers. These societies are functioning with a tie up of the cooperative wholesale stores. The main functions of these societies are to procure the farmers' produce, process it and sell it to the cooperative wholesale stores. The main objective is to get an optimum price to the farmers and good quality produce to the consumers at a reasonable price.

The Department of Agricultural Marketing and Agri Business has taken rigorous steps in the formation of commodity groups and direct tie-up. Traders are made to obtain 15-20 percent higher income to the farmers. Agri-Business Centre (ABC) is focusing on market linkage/tie-up arrangement between the commodity group farmers and the traders/ firms/private entrepreneurs to realize better remuneration by the farmers. So far, 1657 commodity groups have been formed and 1179 were made between the farmers and the traders through 21 ABCs during the Eleventh Five Year Plan. Similarly, Rural Business Hubs (RBH) created under NADP, envisaged expansion of opportunities to the farmers through increased access to markets through forward linkages.

Direct Channels: Farmers / Consumers

There is the link between the farmers and the consumers through farmers' organization. The main objective is to reduce the transaction cost to the farmers. The creation of direct channel is for the farmers and consumers through contract farming. The large retail chains and agricultural export zones and specialized markets like mega market, terminal markets and market complexes for agricultural commodities have been established.

Achievements during the Eleventh Five Year Plan

The World Bank has assisted IAMWARM (Inter Agricultural Management for Water Resources Management) project for the successful growth and sale of the agricultural produce in Tamil Nadu. About 258 infrastructure projects, 19 agriculture business centres, 87 storage godowns, 138 drying yards and 13 collection centres and one pack house were created for the welfare of

the farmers in Tamil Nadu. The major initiatives of the government are strengthening of the regulated markets, establishment of terminal markets, Uzhavar Sandhai and creation of integrated cold storage facilities and training the farmers in relation with post-harvest management to achieve through market funds.

National Agriculture Development Programme provides cold storage for vegetables and fruits at Mettupalayam, Kinathukadavu, Trichy, and The Nilgiris and grapes and for chillies at Cumbum and Sankarankoil respectively. Infrastructure facilities like own building construction, transaction sheds and trader shops were created in the selected regulated markets. A sum of Rs.15 crore is available for the development of agricultural markets under NADP. Under the National Mission on Food Processing scheme, an amount of Rs.20 crore is provided for the promotion of agro-processing industries during 2013-14.

Under IAMWARM scheme, Agri-business Centres (ABC) are constructed. It has created a link between the commodity group farmers and the traders/firms/private entrepreneurs to fetch better price to the farmers. About 2106 commodity groups were created for the farmers and the traders during the Eleventh Five Year Plan period.

An Agri-Market Intelligence and Business Promotion Centre are being established at Trichy to empower the farmers on price forecasting, high price period, best price market, quality parameters, pre-and post-harvest technologies for different agricultural commodities and export opportunities. Crop and market advisory services will be rendered to the farmers through this centre.

The private investment is encouraged for the development of agricultural marketing in India as well as Tamil Nadu. The Modern Terminal Markets are established. These markets cover modernized grading and packing line, cold storage and ripening chamber; quality control laboratories and electronic auction centres will be developed. These markets were established at Perundurai (Erode district) with public-private partnership with Rs.120.63 crore. About 350 drying yards for preventing post-harvest losses (Rs.9.49 crore), 75 farmers markets for fruits and vegetables were established during that period.

Special market complex is created for mango, onion, grapes, tomato and coconut at a cost of Rs.8.0 crore. RBHs have created regulated markets at Cuddalore, Villupuram, Salem, Dharmapuri, Erode, Dindigul, Ramanathapuram, Tirunelveli, and Vellore regulated markets and in Coimbatore district under NADP with Rs. 1.50 crore. Flower auction centre at Kavalkinaru in Tirunelveli district at a cost of 1.63 crore was established.

About 104 godowns for regulated markets with Rs. 23 crore, 7 transaction sheds with Rs.1.89 crore and 17 auction sheds with Rs.4.12 crore were established for

easy transaction in regulated markets. The cold storage for tomato produce at Maicheri in Salem district and for chillies at Paramakudi in Ramnad district were established. The cold storage for vegetables at Chekkikulam in Perambalur district and market complex for coconut at Pethappampatti in Thiruppur district were created. The market complex with cold storage facilities for hilly vegetables was created at Karamadai regulated market in Coimbatore district. Banana ripening chambers were established in Trichy, Srivaikundam, Chinnamanoor and Mohanur. About 50 pack houses for washing and grading facilities for fruits and vegetables were started. An (AEZ) Agri. Export Zone for cut flowers at Hosur in Krishnagiri district, for flowers at Udthagamandalam in the Nilgiris district, for mango at Nilakkottai in Dindigul district, cashew at Panruti in Cuddalore district were started.

Twelfth Five Year Plan (2012-2017) Proposal

According to Vision Tamil Nadu 2023, the forward and backward integration of industry leads to efficient production and distribution of agricultural produce. The main objective of this plan is to help the farmers in marketing their agricultural produce at fair price. The second objective is to ensure remunerative income to the farmers by forming commodity groups. The third objective is to create a healthy competition to sell the farmers produce in various marketing avenues. Lastly, it is to make the farmers to participate in national/global markets through market intelligence.

The Plan document has outlined certain strategies for the development of agricultural marketing. The first one has an integrated approach needed for marketing of planting crops like banana, mango, tapioca, spices, and flowers crops. The produce should have grading, packaging, storing and marketing in the domestic and the international markets. The second objective is commercialization of agricultural products through market driven production. The third one is setting up of agriculture/horticulture processing units by arranging backward and forward linkages. The fourth aim is to minimize post-harvest losses by creating market infrastructure, cold chain and scientific storage facilities. The fifth objective is to encourage the private sector to set up agro-processing industries and food parks for processing on a large scale with farmers' participation. Lastly, implementing Food Processing Mission with special emphasis on the formation of State and District level Food Processing Mission and Initiating Food Processing Business Incubator facilities near production catchments.

The plan document has pointed out some thrust areas such as the food processing units like fruits and vegetables, rice mill, flour mill, bakery unit, dairy products, milk products, animal feed, flakes and fast food and these will be given higher priority during the plan period. Farmers will avail the facilities for their produce. The second aim

is to earn foreign exchange; two more AEZs are to be promoted with modern pack house and gamma irradiation. The third objective is to encourage private investment in the agricultural marketing, specifically, to create modern terminal markets at Navalur at Kanchipuram district and Perendurai, Erode district and at Mukkampatti and Thiruvathavur at Madurai district to serve local and export markets.

Schemes envisaged for the Twelfth Five Year Plan

- α Strengthening regulated markets by creating rural godowns, drying yards and transaction sheds and traders shops by spending Rs.159.00 crore.
- α Creating 25 RBHs in production centres with Rs.5.0 crore.
- α Upgrading the 1500 commodity groups and will form new 1000 commodity groups.
- α Strengthening IT infrastructure for market information and post-harvest management in 100 regulated markets.
- α Establishing food courts for farmers in 50 regulated markets.
- α Creation of 20 agro-processing industries with farmer's participation. The units are proposed for tomato in Krishnagiri, Salem and Coimbatore districts, for the banana in Trichy, Erode and Thoothukudi districts, groundnut in Vellore and Thiruvannamalai districts, pulses in Cuddalore, Vellore and Thiruvannamalai districts, coconut copra in Kanyakumari and Thiruppur districts, chillies in Ramanathapuram and Virdhunagar districts, tamarind in Krishnagiri and Dindugal districts and for Tapioca in Namakkal and Dharmapuri districts.
- α Creation of 4 mega markets with Rs.300.0 crore
- α Establishment of 8 specialized market complexes with Rs. 80.00 crore.
- α Creation of cold storages with 100, 1000 and 2000 MT capacity in 75 places to minimize the post-harvest losses with Rs. 240.00 crore.
- α Cold storage market complex for fruits and vegetables at Mettupalayam, Kinathukadavu and Sankarankoil and Theni will be created in regulated markets and cold storage market complexes.
- α Nearly 51 cold storage godowns will be constructed at regulated markets in the districts of Thiruvannamalai, Cuddalore, Erode, Vellore, Trichy, Coimbatore, Villupuram, Dharmapuri, Ramanathapuram, Salem, Dindugul, Kanyakumari, Thanjavur, Theni, Madurai, Tirunelveli and Pudukkottai for reducing the post-harvest losses.
- α Starting the agro information cell at PACCS level and district level in Tamil Nadu.
- α Setting up of food processing business incubator in Dindigul, Tirunelveli, Krishnagiri, and Dharmapuri districts.
- α Setting up of testing laboratories in Dindugul, Tirunelveli, Krishnagiri and Dharmapuri districts.
- α Setting up of cold storage unit in Ulundurpet, and Gingee, Villupuram regulated markets district will be provided with solar photo voltaic power generation system.

Conclusions

The modernization of agricultural market is essential for the development of the farmers and consumers in India as well as Tamil Nadu. There has been a need for intensive policy measures for the agricultural marketing in the recent days. Globalization and liberalization of the market economy are reducing the role of the State in the globalised economic system. Alternatively, the role of the private sector and the corporate sector has increased due to the high competitiveness in the market economy.

The marketing policy for agriculture has considerably enhanced after the economic reforms in 1991. The objective of the reforms are to improve the agriculture marketing sector. A large quantity of the agricultural produce is not recognized by the domestic markets as well as world market; it is because of lower quality of the agricultural produce of the farmers in India. The agricultural produce of our country find it rather difficult to compete in the international market due to globalization of the economic system. Therefore, there is need for the intervention of the government to solve this problem.

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Agro-Economic Research

Impact of Soil Testing Analysis in Madhya Pradesh*

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Looking at importance of the soil testing in farmers' field, this study had been conducted as the review of various studies reported that the recommendations of soil testing labs are useful for farmers for increasing their levels of output but the majority of the farmers were not found interested in this due to lack of knowledge about soil testing facilities, testing of soils is incredible, labs are situated far away, and non availability of soil testing report etc. Hence, there is an urgent need to evaluate the adequacy, usefulness, effectiveness and contribution of these soil testing labs to the development of agriculture.

In Madhya Pradesh, total numbers of laboratories are 70, out of which Soil Testing laboratory of Sagar and Dhar (M.P.) has been selected purposively for the study. The soil testing laboratory of Sagar district covers farmers of Sagar and Damoh district.

Both primary and secondary data were collected for the study. The primary data was collected from respondents with the help of pretested interview schedule related to the year 2009-10 and 2010-11. The Secondary data were collected from the office of Joint Directorate, Soil Testing Department of Agriculture Vindhyachal Bhawan, Bhopal and from respective. Soil Testing Laboratories of Sagar and Dhar (M.P.) from their published and unpublished records. The secondary data was collected for the period from 2001-02 to 2010-11 years, (10 years).

The findings of the study are as follows:

- There were 70 soil testing labs that existed in the State covering about 50 districts. The maximum number of labs exists in Malwa Plateau (13) followed by Kymore Plateau and Satpura Hills (11) and Vindhya Plateau (10). The other agro climatic zone also had more than one soil testing lab in their area.
- The coverage or catchments per lab was found to be 0.66 lakh farmers and 0.51 lakh hectares land or cultivable land, as far as. Agro climatic regions are concerned, the highest farmers covered by labs were found in Central Narmada Valley (1.15 lakh) followed by Vindhya Plateau (1.06 lakh) Chhattisgarh Plains (0.70 lakh) and Kymore Plateau and Satpura Hills (0.67 lakh)
- Coverage of area under each lab revealed that lab situated in Chhattisgarh plain (Bhalaghat district) covered 0.72 lakh hectare, followed by Central Narmada Valley (0.65 lakh hectare), Northern Hills

of Chhattisgarh (0.60 lakh hectare) and Kymore Plateau and Satpura Hills (0.51 lakh hectares). Other labs also covered large area and provide service to needy farmers. It is also observed from the data that labs situated in Satpura Plateau (0.34 lakh hectares) covered the lowest area. This also indicated that infrastructure available per lakh hectare was appreciable in Satpura Plateau.

- In Madhya Pradesh each soil testing lab covered 0.66 lakh farmers and 0.51 lakh hectares area. The State needs more and more soil testing labs as each lab serves large number of farmers and area.
- There were 19.95% and 21.18% gaps recorded between target and achievement of soil testing samples respectively in Sagar and Dhar districts. The target of Sagar soil testing lab was found to be same in base as well as current year *i.e.* ten thousand soil samples, whereas target was found to be lower in current year as compared to base year in Dhar district of Madhya Pradesh. In soil testing lab of Sagar, as average of gap of 40% between target and achievement in soil samples was found. The achievement of the soil sample over the years was also analysed and it is found that the achievement of soil sample increased from 2197 (2001-02) to 9615 (2010-11) with a growth of 10.87% per annum and with rate of 657.21 sample per year.
- The cost of analysis for a soil sample comes to be Rs. 239.23 per sample, while farmer were charged only of Rs. 10 per soil sample as Government was providing this facility to them. Hence, there is a net loss of Rs. 229.23 to the Government. Which necessitates to increase the target and achievement of soil sample per year. As the number of sample increases the cost of sample will go down.

TABLE 1.1: DISTRIBUTION OF SAMPLE RESPONDENTS.

Particulars	Sagar	Dhar	Overall
Total Respondents	50	50	100
Who Received Report	36 (72.00)	35 (70.00)	71 (71.00)
Who Adopt Recommendation	26 (72.22)	23 (65.71)	49 (49.00)

Figures in parentheses show percentages to total

*A.E.R.C., Jawaharlal Nehru Krishi Vishwa Vidyalaya Jabalpur (M.P.) and Chhattisgarh.

- 71 per cent farmers received soil testing report from the respective labs of their district. Out of these 71 farmers, 49 (69.01%) farmers adopted the recommendations and applied the fertilizer or other chemical for improvement of their crops, while remaining 22 (30.99%) did not follow these recommendations due to several constraints.
- The per hectare expenditure on seed, fertilizer and

plant protection measures adopted by farmers increased for all crops after adopting soil testing analysis recommendation. The per hectare expenditure on labour also increased in all crops except in soybean. The cost of cultivation and cost of production of all the crops reduced drastically, while cost benefit ratio was found to have increased after adoption of recommendation of soil testing.

TABLE 1.2: INCREMENTAL RETURN AFTER ADOPTION OF SOIL TESTING RECOMMENDATION BY THE FARMERS IN DIFFERENT CROPS (₹./HA)

Particulars	Soybean		Wheat		Gram		Potato		Garlic	
	Before	After	Before	After	Before	After	Before	After	Before	After
Yield physical unit (q/ha)										
Main product	15.23	19.76 (29.74)	38.61	46.88 (21.42)	12.35	17.29 (40.00)	123.50	172.90 (40.00)	22.23	29.64 (33.33)
By product	22.84	27.78 (21.63)	19.30	22.44 (16.27)	7.41	10.37 (39.95)	0.00	0.00 (0.00)	0.00	0.00 (0.00)
Returns										
Main product	19801	25688 (29.73)	34757	42192 (21.39)	27170	38038 (40.00)	49400	69160 (40.00)	55575	74100 (33.33)
By product	13.70	1667 (21.62)	772	898 (16.22)	444	622 (40.00)	0	0 (0.00)	0	0 (0.00)
Gross returns	21172	27355 (29.20)	35529	43090 (21.28)	27614	38660 (40.00)	49400	69160 (40.00)	55575	74100 (33.33)
Net income										
at Variable cost	11978	20187 (68.54)	25793	31133 (20.70)	21015	29509 (39.93)	16646	34581 (107.75)	32008	49395 (54.32)
at Total cost	8321	15466 (85.86)	19664	24011 (22.11)	16249	22841 (39.94)	8128	25042 (208.10)	22427	36623 (63.30)
Cost Benefit ratio										
at Variable cost	2.30	3.82	3.65	3.60	4.18	4.22	1.51	2.00	2.36	3.00
at Total cost	1.65	2.30	2.24	2.26	2.43	2.44	1.20	1.57	1.68	1.98

Figures in parenthese show percentages difference to before.

- The lack of knowledge about soil testing technology (70%) non-availability of soil testing report (62%), less co-operation from officers of agriculture department (46%) and complicated method of testing soil sample (30%) were found be the main constraints in adoption of soil testing recommendations.

Suggestions

The present infrastructure of soil testing facility is found to be insufficient in different agro climatic regions of Madhya Pradesh. Whatever infrastructure is available is not functioning properly hence, coverage of target/

achievement needs to be increased by employing skill and trained staff in these labs. There is an urgent need to increase quantity as well as quality of soil sample testing.

There is ample scope to improve the analyzing capacity as well as dissemination ability of the soil testing laboratories. If this, coupled with professional management through proper linkages, can bring radical changes in the soil testing service in the state to extence the farmer's satisfaction.

Each laboratory may be provided with the required staff, according to its capacity. Each laboratory may be

headed by a technical person having M.Sc. (Soil Science & Agri. Chemistry) as an essential qualification or B. Sc. (Ag.) with a minimum of 5 years experience of working in soil testing/soil Survey/fertilizer testing lab. There should be no relaxation in this stipulation so that the technical flaw in the programme is removed.

In-charge of the soil testing lab may participate in the *khari/rabi* conferences being organized by the state to formulate various recommendations relating to input use/crop variety etc. Orientation training of the in-charge may be organized once a year for a period of minimum 3 days in any Agricultural University of the State.

Special care may be taken for collection of representative soil samples. Validity of sample has to ensure at all levels-starting from collection stage to storage in lab even after analysis.

Since the reports are often not received in time by the farmers, when sent through usual postal system, a system of online communication of reports may be started by which the soil testing laboratory may send the report of the Block Development Officer (BDO) to at least cut the postal delays. The farmers often visit BDO's office for various other activities and may be able to collect reports. This however also presupposes that all the soil testing laboratories are provided with computer facilities. Keeping the cost in mind, the system of on-line communication reports may be started in the selected laboratories initially and then to cover all the labs.

The laboratories may be kept informed on the outcome of the recommendations made by them on fertilizer use at least on representative and typical case by case basis, e.g. where the recommendation has given as expected/better than expected/better than expected results and where it has not given results as expected.

The Department of Agriculture ensures an effective and live linkage between the field and the laboratory. To improve its efficacy, each lab may adopt at least one nearby village from where sample may be collected by the laboratory staff and recommendations are also communicated/handed over directly by the laboratory staff to the farmers and to follow the outcome of the programme. Each lab can take up one village as a mission to see the utility of the programme by itself and find out shortcomings so that the whole programme can be improved on the basis of such direct observation/study. Presently, the labs are literally cut off from the field and work in isolation of the whole programme.

The state government in Madhya Pradesh is already charging the fee of Rs. 5/- per sample but it is too less. A sufficient fee will bring accountability on the part of the lab to make a sound recommendation because farmers will participate in sample collection or at least will know that a sample has been collected and will be expected to appreciate the value of the report received on the basis of

some cost done by them. They will start asking the question if report is not received in time or is not found to be useful when the recommendation is followed as advised by the lab. Charging the fee will also help the states to supplement the requirement of funds by the laboratories. A minimum fee of Rs. 20 per sample analysis may be charged. Estimated cost of analysis of a sample is approximately Rs. 80 for physical parameters + NPK analysis while with the micronutrients it would be about Rs. 100 (Only chemicals and 20% of glass breakages are considered as part of the cost for this purpose).

Soil analysis and fertilizer recommendation is only a part of the soil testing service. To a good measure, the efficiency of the service depends upon the care and efforts put forth by extension workers and the farmers in collection and dispatch of the samples to the laboratories and obtaining reports timely. Its effectiveness also depends upon the proper follow up in conveying the recommendations to the farmers, including the actual use of fertilizer according to the recommendations. The role of extension service, soil chemists and the agronomists in the field is important. The service is suffering both from technological aspect and due to inadequate and intrained manpower. Weakness of the programme in its various aspects as discussed above needs improvement.

The soil health card so issued to the farmers may be periodically updated so that the farmers are aware about the changing fertility status of their land. This card may also be useful to the farmers in getting loans for agriculture purposes where agricultural value of the land may be one of the factors.

Governments' recent policy change on fertilizer subsidy w.e.f. 01.04.2010, stipulates that fertilizers subsidy will be worked out on the basis of their nutrient content. This would ensure that special attention is paid on the individual soil nutrient deficiency and application of fertilizers on the basis of such deficit nutrient. It would require the formulation of fertilizer products according to the needs of nutrients in a given soil/crop. This would be possible only when the soil testing labs are in a position to give information on soil nutrient deficiencies on smaller area basis, say village-wise, if not on individual farmer's basis. This will further emphasise on the need of strengthening the soil testing service in the state both in quality and quantity. In the new policy of giving nutrient based fertilizer subsidy, a specific emphasis on 'Nutrient' will focus on nutrient-wise soil deficiency and the production and promotion of fertilizer according to the need of such deficient nutrient. This will call for greater attention on the use of soil nutrient deficiency based fertilizers. However, this policy will ensure that no fertilizers gets less or more emphasis than the other due to any consideration such as production technology or use of raw material and thus, on the basis of cost of production etc. It will ensure uniformity of subsidy in all types of fertilizers.

If the fertilizer industry will venture to produce and promote the products on the basis of requirement of specific soil nutrient deficiency, the industry will have to get into the soil testing programme in a big way and generate such information as a measure of good supplement to soil testing programme basically being run by the Government. The fertilizer industry may adopt at least one district in a State and ensure and monitor that the fertilizer in the adopted district is used on the basis of plant nutrient deficiency as determined through accurate soil testing.

The awareness about soil testing facility, its needs and importance is at the farmers' level hence, awareness building must be taken up by extension activities. As the adoption of recommendations of soil testing reduced cost of production of crops and increases returns. This fact may be popularized among the farmer's so that they can be benefited. Sufficient field staff with trained personal should be kept at village level and method as well as result demonstrations of these technologies may be taken up at the village level which popularized the impact of these technologies in front of the cultivators.

Commodity Reviews

Foodgrains

During the month of April, 2016 the Wholesale Price Index (Base 2004-05=100) of pulses increased by 3.98%, cereals increased by 0.25% & foodgrains increased by 1.09% respectively over the previous month.

ALL INDIA INDEX NUMBER OF WHOLESALE PRICES

(Base: 2004-2005=100)

Commodity	Weight (%)	WPI for the month of April, 2016	WPI for the month of March, 2016	WPI A year ago	Percentage Change during	
					A month	A year
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Rice	1.793	235.1	235.0	234.0	-0.04	0.47
Wheat	1.116	220.9	222.0	216.1	-0.50	2.22
Jowar	0.096	283.2	279.4	282.6	1.36	0.21
Bajra	0.115	306.2	295.9	247.2	3.48	23.87
Maize	0.217	272.3	267.4	250.0	1.83	8.92
Barley	0.017	259.2	249.3	217.8	3.97	19.01
Ragi	0.019	350.3	340.7	334.0	2.82	4.88
Cereals	3.373	237.4	236.8	231.3	0.25	2.64
Pulses	0.717	360.4	346.6	264.3	3.98	36.36
Foodgrains	4.09	258.9	256.1	237.1	1.09	9.19

Source: Office of the Economic Adviser, M/O Commerce and Industry.

The following Table indicates the State wise trend of Wholesale Prices of cereals during the month of April, 2016.

Commodity	Main Trend	Rising	Falling	Mixed	Steady
Rice	Steady	A.P. U.P.	Jharkhand	Kerala Karnataka	Assam Gujarat Haryana
Wheat	Rising	Gujarat M.P. Maharashtra Rajasthan		U.P.	Haryana Karnataka
Jowar	Rising	Rajasthan Karnataka		Gujarat	
Bajra	Rising & Steady	Haryana Rajasthan		Gujarat	Karnataka Maharashtra
Maize	Rising & Falling	M.P. U.P.	Haryana Karnataka	Rajasthan	

Procurement of Rice

1.66 million tonnes of Rice (including paddy converted into rice) was procured during April 2016 as against 1.86 million tonnes of rice (including paddy converted into rice) procured during April 2015. The total procurement of

Rice in the current marketing season i.e 2015-2016, up to 29.04.2016 stood at 31.77 million tonnes, as against 26.99 million tonnes of rice procured, during the corresponding period of last year. The details are given in the following table :

PROCUREMENT OF RICE

(in Thousand Tonnes)

State	Marketing Season 2015-16 (upto 29.04.2016)		Corresponding Period of last Year 2014-15		Marketing Year (October-September)			
	Procurement	Percentage to Total	Procurement	Percentage to Total	2014-15		2013-14	
					Procurement	Percentage to Total	Procurement	Percentage to Total
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Andhra Pradesh	3549	11.17	2121	7.86	3591	11.17	3722	11.76
Chhatisgarh	3442	10.83	3355	12.43	3423	10.64	4290	13.56
Haryana	2861	9.01	2015	7.46	2015	6.27	2406	7.60
Maharashtra	161	0.51	138	0.51	199	0.62	161	0.51
Punjab	9350	29.43	7786	28.84	7786	24.21	8106	25.62
Tamil Nadu	1000	3.15	876	3.25	1049	3.26	684	2.16
Uttar Pradesh	2910	9.16	1631	6.04	1698	5.28	1127	3.56
Uttarakhand	597	1.88	431	1.60	465	1.45	463	1.46
Others	7900	24.87	8640	32.01	11936	37.11	10678	33.75
Total	31770	100.00	26993	100.00	32162	100.00	31637	100.00

Source: Department of Food & Public Distribution.

Procurement of Wheat

The total procurement of wheat in the current marketing season i.e 2016-2017 up to July, 2016, is 20.14 million

tonnes against a total of 15.86 million tonnes of wheat procured during last year. The details are given in the following table.

PROCUREMENT OF WHEAT

(in Thousand Tonnes)

State	Marketing Season 2016-17 (upto 29.04.2016)		Corresponding Period of last Year 2015-16		Marketing Year (April-March)			
	Procurement	Percentage to Total	Procurement	Percentage to Total	2015-16		2014-15	
					Procurement	Percentage to Total	Procurement	Percentage to Total
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Haryana	6338	31.46	5281	33.29	6778	24.13	6495	23.20
Madhya Pradesh	3551	17.63	4191	26.42	7309	26.02	7094	25.34
Punjab	9532	47.31	5603	35.32	10344	36.83	11641	41.58
Rajasthan	423	2.10	413	2.60	1300	4.63	2159	7.71
Uttar Pradesh	295	1.46	334	2.11	2267	8.07	599	2.14
Others	7	0.03	41	0.26	90	0.32	6	0.02
Total	20146	100.00	15863	100.00	28088	100.00	27994	100.00

Source: Department of Food & Public Distribution.

Commercial Crops

Oilseeds Edible Oils

The Wholesale Price Index (WPI) of nine major oilseeds as a group stood at 219.4 in April, 2016 showing an increase of 4.0% and 5.7% over the previous month and year, respectively. The WPI of gingelly seed increased by 11.5%, soyabean by 7.5%, groundnut seed by 7.3%, copra (coco-nut) by 1.4%, and safflower seed by 1.0% over the previous month. The WPI sunflower seed decreased by 1.9%, niger seed by 1.1%, rape & mustard seed by 1.0%, and cotton seed by 0.7%, over the previous month.

: The WPI of edible oils as a group stood at 152.4 in April, 2016 showing an increase of 1.6% and 5.6% over the previous month and year respectively. The WPI of gingelly oil increased by 7.1%, groundnut oil by 6.3%, soyabean oil by 1.9 % and mustard & rapeseed oil by 1.2% over the previous month. The WPI of cotton seed oil decreased by 3.7 %, sunflower oil by 0.9 % and copra oil by 0.3 % over the previous month.

Fruits & Vegetable

The WPI of fruits & vegetable as a group stood at 241.8 in April, 2016 showing an increase of 6.8 % over the previous month. However, it shows a decrease of 0.5% over the previous year.

Potato

The WPI of potato stood at 183.4 in April, 2016 showing an increase of 17.1% and 35.5% over the previous month and year respectively.

Onion

The WPI of onion stood at 253.3 in April, 2016 showing a decrease of 7.5% and 18.2% over the previous month and year respectively.

Condiments & Spices

The WPI of condiments & spices (group) stood at 347.7 in April, 2016 showing an increase of 0.1% and 12.1% over the previous month and year respectively. The WPI of black pepper (3.6%) and chillies (3.5) increased over the previous month. However, WPI of turmeric decreased by 1.8% over the previous month.

Raw Cotton

The WPI of raw cotton stood at 185.2 in April, 2016 showing an increase of 3.1% over the previous month. However, it shows a decrease of 2.7% over the previous year.

Raw Jute

The WPI of raw jute stood at 514.4 in April, 2016 showing an increase of 1.9% and 66.7% over the previous month and year respectively.

WHOLESALE PRICE INDEX OF COMMERCIAL CROPS

Commodity	Latest	Month	Year	% Variation Over	
	January, 2016	December, 2015	January, 2014	Month	Year
OIL SEEDS	219.4	210.9	207.6	4.0	5.7
Groundnut Seed	273.2	254.6	232.8	7.3	17.4
Rape & Mustard Seed	215.6	217.7	203.9	-1.0	5.7
Cotton Seed	212.3	213.9	168.6	-0.7	25.9
Copra (Coconut)	116.7	115.1	178.1	1.4	-34.5
Gingelly Seed (Sesamum)	300.7	269.8	349.1	11.5	-13.9
Niger Seed	347.7	351.4	241.4	-1.1	44.0
Safflower (Kardi Seed)	151.4	149.9	146.7	1.0	3.2
Sunflower	196.1	199.8	186.6	-1.9	5.1
Soyabean	227.4	211.5	200.9	7.5	13.2
EDIBLE OILS	152.4	150.0	144.3	1.6	5.6
Groundnut Oil	203.7	191.7	183.6	6.3	10.9
Cotton Seed Oil	190.6	198.0	172.0	-3.7	10.8
Mustard & Rapeseed Oil	182.1	180.0	161.5	1.2	12.8
Soyabean Oil	153.1	150.3	150.0	1.9	2.1
Copra Oil	143.0	143.5	148.7	-0.3	-3.8
Sunflower Oil	134.5	135.7	124.9	-0.9	7.7
Gingelly Oil	181.7	169.6	168.2	7.1	8.0
FRUITS & VEGETABLES	241.8	226.5	243.1	6.8	-0.5
Potato	183.4	156.6	135.4	17.1	35.5
Onion	253.3	273.8	309.6	-7.5	-18.2
CONDIMENTS & SPICES	347.7	347.4	310.2	0.1	12.1
Black Pepper	762.2	735.7	703.2	3.6	8.4
Chillies(Dry)	421.6	407.2	313.2	3.5	34.6
Turmeric	258.0	262.6	256.3	-1.8	0.7
Raw Cotton	185.2	179.7	190.3	3.1	-2.7
Raw Jute	514.4	505.0	308.6	1.9	66.7

STATISTICAL TABLES
WAGES

1. AVERAGE DAILY AGRICULTURAL WAGES IN SOME STATES (CATEGORY-WISE)

(In Rs.)

State	District	Centre	Month & Year	Daily Normal Working Hours	Field Labour		Other Agri. Labour		Herdsman		Skilled Labour		
					M	W	M	W	M	W	Car-penter	Black Smith	Cobbler
Andhra Pradesh	Krishna Guntur	Ghantasala Tadikonda	Dec,15	8	200	200	300	NA	250	NA	300	NA	NA
			Dec,15	8	270	218	275	NA	225	NA	NA	NA	NA
Telangana	Ranga Reddy	Arutala	Jan, 16	8	350	269	NA	NA	NA	NA	350	300	NA
Karnataka	Bangalore	Harisandra	Nov, 15	8	NA	NA	NA	NA	NA	NA	NA	NA	NA
			Nov, 15	8	170	170	180	180	180	180	200	190	NA
Maharashtra	Tumkur Nagpur	Gidlahali Mauda	Sep, 14	8	100	80	NA	NA	NA	NA	NA	NA	NA
			Sep, 14	8	NA	NA	NA	NA	NA	NA	NA	NA	NA
Jharkhand	Ahmednagar Ranchi	Akole Gaitalsood	March,14	8	120	120	100	100	75	75	200	200	NA

1.1 : AVERAGE DAILY AGRICULTURAL WAGES IN SOME STATES (OPERATION-WISE)

(In Rs.)

State	District	Centre	Month & Year	Type of Labour	Normal Daily working Hours	Ploughing	Sowing	Weeding	Harvesting	Other Agri Labour	Herdsman	Skilled Labour		
												Carpenter	Black Smith	Cobbler
Assam	Barpeta	Laharapara	June,15	M	8	250	250	250	250	250	200	300	300	250
			June,15	W	8	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bihar	Muzaffarpur	BhaluiRasul	June,14	M	8	310	210	210	260	250	210	350	360	310
			June,14	W	8	NA	NA	NA	250	210	NA	NA	NA	NA
	Shekhpura	Kutaut	June,14	M	8	220	NA	NA	NA	220	NA	280	NA	NA
			June,14	W	8	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chhattisgarh	Dhamtari	Sihava	Jan,16	M	8	NA	200	200	150	150	100	275	175	100
			Jan,16	W	8	NA	150	150	100	100	100	NA	100	100
Gujarat*	Rajkot	Rajkot	Sep, 15	M	8	215	205	163	180	150	188	450	450	360
			Sep, 15	W	8	NA	175	150	175	135	117	NA	NA	NA
	Dahod	Dahod	Sep,15	M	8	180	160	160	160	130	NA	260	210	210
			Sep,15	W	8	NA	160	160	160	130	NA	NA	NA	NA
Haryana	Panipat	Ugarakheri	Feb, 16	M	8	400	400	400	400	NA	NA	NA	NA	NA
			Feb, 16	W	8	NA	300	300	300	NA	NA	NA	NA	NA
Himachal Pradesh	Mandi	Mandi	Jun,15	M	8	NA	200	200	200	200	200	350	350	NA
			Jun,15	W	8	NA	200	200	200	200	200	NA	NA	NA
Kerala	Kozhikode	Koduvally	Dec,15	M	4-8	1290	675	NA	675	983	NA	825	NA	NA
			Dec,15	W	4-8	NA	NA	475	575	550	NA	NA	NA	NA
	Palakkad	Elappally	Dec,15	M	4-8	500	500	NA	500	467	NA	600	NA	NA
			Dec,15	W	4-8	NA	NA	300	300	300	NA	NA	NA	NA
Madhya Pradesh	Hoshangabad	Sangarkhera	Feb 16	M	8	200	200	200	200	200	150	400	400	NA
			Feb 16	W	8	NA	200	200	200	200	150	150	NA	NA
	Satna	Kotar	Feb 16	M	8	200	200	200	200	200	200	300	300	300
			Feb 16	W	8	NA	200	200	200	200	200	200	NA	NA
	Shyopurkala	Vijaypur	Feb 16	M	8	NA	300	300	NA	NA	250	300	300	NA
			Feb 16	W	8	NA	300	300	NA	NA	NA	NA	NA	NA

1.1 : AVERAGE DAILY AGRICULTURAL WAGES IN SOME STATES (OPERATION-WISE) - *Contd.*

(In Rs.)

State	District	Centre	Month & Year	Type of Labour	Normal Daily working Hours	Ploughing	Sowing	Weeding	Harvesting	Other Agri. Labour	Herdsman	Skilled Labour		
												Carpenter	Black Smith	Cobbler
Odisha	Bhadrak	Chandbali	Dec, 16	M	8	250	200	NA	250	NA	NA	350	300	250
				W	8	NA	200	NA	200	NA	NA	NA	NA	NA
	Ganjam	Aska	Dec, 16	M	8	300	200	200	250	NA	NA	400	400	200
				W	8	NA	100	100	150	NA	NA	NA	NA	NA
Punjab	Ludhiyana	Pakhowal	Nov, 15	M	8	395	NA	395	395	380	NA	450	450	NA
				W	8	NA	NA	NA	NA	NA	NA	NA	NA	NA
Rajasthan	Barmer	Kuseep	Aug,15	M	8	NA	NA	300	NA	NA	300	700	500	NA
				W	8	NA	NA	200	NA	NA	200	NA	NA	NA
	Jalore	Sarnau	Aug,15	M	8	NA	NA	NA	NA	NA	NA	NA	NA	NA
				W	8	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tamil Nadu*	Thanjavur	Pulvarnatham	Feb, 16	M	8	NA	328	NA	300	340	NA	NA	NA	NA
				W	8	NA	NA	122	105	123	NA	NA	NA	NA
	Tirunelveli	Malayakulam	Feb, 16	M	8	NA	500	NA	400	496	NA	NA	NA	NA
				W	8	NA	175	176	195	358	NA	NA	NA	NA
Tripura	State Average		Apr to March 2013-14	M	8	288	264	264	277	262	270	305	212	286
				W	8	NA	197	201	209	197	201	NA	NA	NA
Uttar Pradesh*	Meerut	Ganeshpur	Dec,15	M	8	283	258	258	250	254	NA	370	NA	NA
				W	8	NA	200	207	200	207	NA	NA	NA	NA
	Auraiya	Auraiya	Dec, 15	M	8	150	150	150	150	160	NA	364	NA	NA
				W	8	NA	NA	NA	NA	160	NA	NA	NA	NA
	Chandauli	Chandauli	Dec,15	M	8	200	200	200	NA	200	NA	350	NA	NA
				W	8	NA	200	200	NA	NA	NA	NA	NA	NA

M-Man

W-Woman

NA- Not Available

* States reported district average daily wages

PRICES

2. WHOLESALE PRICES OF CERTAIN AGRICULTURAL COMMODITIES AND ANIMAL HUSBANDRY PRODUCTS AT SELECTED CENTRES IN INDIA

Commodity	Variety	Unit	State	Centre	Apr.-16	Mar-16	Apr-16
Wheat	PBW 343	Quintal	Punjab	Amritsar	1600	NA	1600
Wheat	Dara	Quintal	Uttar Pradesh	Chandausi	1525	1580	1550
Wheat	Lokvan	Quintal	Madhya Pradesh	Bhopal	1590	1700	1352
Jowar	-	Quintal	Maharashtra	Mumbai	2200	2200	2300
Gram	No III	Quintal	Madhya Pradesh	Sehore	5225	4152	3650
Maize	Yellow	Quintal	Uttar Pradesh	Kanpur	1420	1425	1415
Gram Split	-	Quintal	Bihar	Patna	5760	5570	4600
Gram Split	-	Quintal	Maharashtra	Mumbai	7200	5850	4050
Arhar Split	-	Quintal	Bihar	Patna	13050	12800	7310
Arhar Split	-	Quintal	Maharashtra	Mumbai	12200	10850	7300
Arhar Split	-	Quintal	NCT of Delhi	Delhi	12100	11790	6335
Arhar Split	Sort II	Quintal	Tamil Nadu	Chennai	12800	11800	9400
Gur	-	Quintal	Maharashtra	Mumbai	3500	3000	3200
Gur	Sort II	Quintal	Tamil Nadu	Coimbatore	3800	3800	3800
Gur	Balti	Quintal	Uttar Pradesh	Hapur	2910	2200	2400
Mustard Seed	Black (S)	Quintal	Uttar Pradesh	Kanpur	4000	3985	3450
Mustard Seed	Black	Quintal	West Bengal	Raniganj	4400	4200	3750
Mustard Seed	-	Quintal	West Bengal	Kolkata	4600	4500	4100
Linseed	Bada Dana	Quintal	Uttar Pradesh	Kanpur	4400	4300	4200
Linseed	Small	Quintal	Uttar Pradesh	Varanasi	4260	4260	
Cotton Seed	Mixed	Quintal	Tamil Nadu	Virudhunagar	2100	2100	1600
Cotton Seed	MCU 5	Quintal	Tamil Nadu	Coimbatore	2500	2500	2000
Castor Seed	-	Quintal	Telangana	Hyderabad	3400	3350	3600
Sesamum Seed	White	Quintal	Uttar Pradesh	Varanasi	10710	10700	13800
Copra	FAQ	Quintal	Kerala	Alleppey	5900	5400	9800
Groundnut	Pods	Quintal	Tamil Nadu	Coimbatore	4500	4500	4500
Groundnut	-	Quintal	Maharashtra	Mumbai	6600	6100	6000
Mustard Oil	-	15 Kg.	Uttar Pradesh	Kanpur	1425	1395	1223
Mustard Oil	Ordinary	15 Kg.	West Bengal	Kolkata	1500	1425	1275
Groundnut Oil	-	15 Kg.	Maharashtra	Mumbai	1500	1450	1425
Groundnut Oil	Ordinary	15 Kg.	Tamil Nadu	Chennai	1950	1845	1545
Linseed Oil	-	15 Kg.	Uttar Pradesh	Kanpur	1492	1476	1425
Castor Oil	-	15 Kg.	Telangana	Hyderabad	1095	1065	1163
Sesamum Oil	-	15 Kg.	NCT of Delhi	Delhi	1450	1455	1855
Sesamum Oil	Ordinary	15 Kg.	Tamil Nadu	Chennai	1980	1755	2325
Coconut Oil	-	15 Kg.	Kerala	Cochin	1290	1140	2093
Mustard Cake	-	Quintal	Uttar Pradesh	Kanpur	2200	2240	1860
Groundnut Cake	-	Quintal	Telangana	Hyderabad	3358	3358	3286
Cotton/Kapas	NH 44	Quintal	Andhra Pradesh	Nandyal	4400	4000	3950
Cotton/Kapas	LRA	Quintal	Tamil Nadu	Virudhunagar	4300	4450	3806
Jute Raw	TD 5	Quintal	West Bengal	Kolkata	5770	5630	3275

2. WHOLESALE PRICES OF CERTAIN AGRICULTURAL COMMODITIES AND ANIMAL HUSBANDRY PRODUCTS AT SELECTED CENTRES IN INDIA - *Contd....*

Commodity	Variety	Unit	State	Centre	Apr.-16	Mar-16	Apr-15
Jute Raw	W 5	Quintal	West Bengal	Kolkata	5710	5570	3225
Oranges	-	100 No	NCT of Delhi	Delhi	600	500	500
Oranges	Big	100 No	Tamil Nadu	Chennai	580	480	370
Oranges	Nagpuri	100 No	West Bengal	Kolkata	NT	700	750
Banana	-	100 No.	NCT of Delhi	Delhi	333	292	333
Banana	Medium	100 No.	Tamil Nadu	Kodaikkanal	499	497	497
Cashewnuts	Raw	Quintal	Maharashtra	Mumbai	75000	78000	64000
Almonds	-	Quintal	Maharashtra	Mumbai	68000	86000	71000
Walnuts	-	Quintal	Maharashtra	Mumbai	65000	74000	68000
Kishmish	-	Quintal	Maharashtra	Mumbai	13500	19000	24000
Peas Green	-	Quintal	Maharashtra	Mumbai	6300	3700	3900
Tomato	Ripe	Quintal	Uttar Pradesh	Kanpur	850	925	1550
Ladyfinger	-	Quintal	Tamil Nadu	Chennai	2000	1200	2300
Cauliflower	-	100 No.	Tamil Nadu	Chennai	1500	1500	1700
Potato	Red	Quintal	Bihar	Patna	1000	900	650
Potato	Desi	Quintal	West Bengal	Kolkata	1600	1400	560
Potato	Sort I	Quintal	Tamil Nadu	Mettupalayam	1983	1815	1448
Onion	Pole	Quintal	Maharashtra	Nashik	600	550	1000
Turmeric	Nadan	Quintal	Kerala	Cochin	15500	15000	12000
Turmeric	Salam	Quintal	Tamil Nadu	Chennai	9400	9300	8000
Chillies	-	Quintal	Bihar	Patna	10000	10200	9190
Black Pepper	Nadan	Quintal	Kerala	Kozhikode	67000	63500	56500
Ginger	Dry	Quintal	Kerala	Cochin	16500	17000	22000
Cardamom	Major	Quintal	NCT of Delhi	Delhi	130500	130500	105000
Cardamom	Small	Quintal	West Bengal	Kolkata	100000	100000	110000
Milk	Buffalo	100 Liters	West Bengal	Kolkata	3600	3600	3600
Ghee Deshi	Deshi No 1	Quintal	NCT of Delhi	Delhi	35685	36352	29682
Ghee Deshi	-	Quintal	Maharashtra	Mumbai	46000	45000	43000
Ghee Deshi	Desi	Quintal	Uttar Pradesh	Kanpur	36000	35200	34600
Fish	Rohu	Quintal	NCT of Delhi	Delhi	9000	9500	9100
Fish	Pomphrets	Quintal	Tamil Nadu	Chennai	35000	33500	33500
Eggs	Madras	1000 No.	West Bengal	Kolkata	3500	3500	3600
Tea	-	Quintal	Bihar	Patna	21150	21150	21050
Tea	Atti Kunna	Quintal	Tamil Nadu	Coimbatore	33000	33000	35000
Coffee	Plant-A	Quintal	Tamil Nadu	Coimbatore	26500	26500	30200
Coffee	Rubusta	Quintal	Tamil Nadu	Coimbatore	13500	13500	15500
Tobacco	Kampila	Quintal	Uttar Pradesh	Farukhabad	4650	4675	5000
Tobacco	Raisa	Quintal	Uttar Pradesh	Farukhabad	3450	3400	3600
Tobacco	Bidi Tobacco	Quintal	West Bengal	Kolkata	11000	9500	3900
Rubber	-	Quintal	Kerala	Kottayam	13000	10700	10500
Arecanut	Pheton	Quintal	Tamil Nadu	Chennai	32400	32200	29900

3. MONTH-END WHOLESALE PRICES OF SOME IMPORTANT AGRICULTURAL COMMODITIES IN INTERNATIONAL MARKETS DURING
YEAR 2016

Commodity	Variety	Country	Centre	Unit	JAN	FEB	MAR	APR
CARDAMOM	Guatemala Bold Green	U.K.	-	Dollar/MT	9000.00	9000.00	9000.00	9000.00
				Rs./Qtl	61281.00	61542.00	60210.00	59796.00
CASHEW KERNELS	Spot U.K. 320s	U.K.	-	Dollar/MT	8350.09	8143.20	8333.00	9184.69
				Rs./Qtl	56855.76	55683.20	55747.77	61023.08
CASTOR OIL	Any Origin ex tank Rotterdam	Netherlands	-	Dollar/MT	1374.00	1244.70	1244.70	1244.70
				Rs./Qtl	9355.57	8511.26	8327.04	8269.79
CHILLIES	Birds eye 2005 crop	Africa	-	Dollar/MT	4100.00	4100.00	4100.00	4100.00
				Rs./Qtl	27916.90	28035.80	27429.00	27240.40
CLOVES	Singapore	Madagascar	-	Dollar/MT	8650.00	8650.00	8650.00	8700.00
				Rs./Qtl	58897.85	59148.70	57868.50	57802.80
COCONUT OIL	Crude Phillipine /Indonesia, cif Rotterdam	Netherlands	-	Dollar/MT	1155.00	1255.00	1545.00	1535.00
				Rs./Qtl	7864.40	8581.69	10336.05	10198.54
COPRA	Phillipines cif Rotterdam	Phillipine	-	Dollar/MT	687.50	714.50	811.00	813.00
				Rs./Qtl	4681.19	4885.75	5425.59	5401.57
CORRIANDER		India	-	Dollar/MT	2000.00	2000.00	2000.00	2000.00
				Rs./Qtl	13618.00	13676.00	13380.00	13288.00
CUMMIN SEED		India	-	Dollar/MT	2200.00	2200.00	2500.00	2500.00
				Rs./Qtl	14979.80	15043.60	16725.00	16610.00
GROUNDNUT OIL	Crude Any Origin cif Rotterdam	U.K.	-	Dollar/MT	1200.00	1200.00	1200.00	1200.00
				Rs./Qtl	8170.80	8205.60	8028.00	7972.80
MAIZE		U.S.A.	Chicago	C/56 lbs	369.25	359.75	368.50	380.75
				Rs./Qtl	988.09	966.77	968.85	994.17
OATS		CANADA	Winnipeg	Dollar/MT	283.14	250.42	250.99	247.92
				Rs./Qtl	1927.90	1712.37	1679.12	1647.18
PALM KERNAL OIL	Crude Malaysia/ Indonesia, cif Rotterdam	Netherlands	-	Dollar/MT	890.00	1030.00	1320.00	1285.00
				Rs./Qtl	6060.01	7043.14	8830.80	8537.54
PALM OIL	Crude Malaysian/ Sumatra, cif Rotterdam	Netherlands	-	Dollar/MT	575.00	637.50	705.00	710.00
				Rs./Qtl	3915.18	4359.23	4716.45	4717.24
PEPPER (Black)	Sarawak Black lable	Malaysia	-	Dollar/MT	10000.00	10000.00	10000.00	10000.00
				Rs./Qtl	68090.00	68380.00	66900.00	66440.00
RAPESEED	Canola	CANADA	Winnipeg	Can Dollar/MT	481.20	460.70	469.50	499.50
				Rs./Qtl	2334.78	2298.89	2378.02	2643.85
RAPESEED OIL	UK delivered rapeseed, delivered Erith(buyer)	U.K.	-	Pound/MT	247.00	247.00	245.00	245.00
				Rs./Qtl	2415.66	2352.43	2314.03	2378.22
RAPESEED OIL	Refined bleached and deodorised ex-tanks,broker price	U.K.	-	Pound/MT	660.00	614.00	615.00	658.00
				Rs./Qtl	6454.80	5847.74	5808.68	6387.21
SOYABEAN MEAL	UK produced 49% oil & protein ('hi-pro') ex-mill seaforth UK bulk	U.K.	-	Pound/MT	248.00	255.00	249.00	291.00
				Rs./Qtl	2425.44	2428.62	2351.81	2824.74
SOYABEAN OIL		U.S.A.	-	C/lbs	30.87	30.92	33.36	33.62
				Rs./Qtl	4632.67	4659.94	4918.85	4923.10
SOYABEAN OIL	Refined bleached and deodorised ex-tanks, broker price	U.K.	-	Pound/MT	618.00	639.00	650.00	616.00
				Rs./Qtl	6044.04	6085.84	6139.25	5979.51
SOYABEANS		U.S.A.	-	C/60 lbs	883.00	867.50	905.25	1019.00
				Rs./Qtl	2206.53	2177.03	2222.60	2484.68
SOYABEANS	US NO.2 yellow	Netherlands	Chicago	Dollar/MT	377.20	372.90	385.60	409.20
				Rs./Qtl	2568.35	2549.89	2579.66	2718.72

**3. MONTH-END WHOLESAL E PRICES OF SOME IMPORTANT AGRICULTURAL COMMODITIES IN INTERNATIONAL MARKETS DURING
YEAR 2016-Contd....**

Commodity	Variety	Country	Centre	Unit	JAN	FEB	MAR	APR
SUNFLOWER SEED OIL	Refined bleached and deodorised ex-tanks, broker price	U.K.	-	Pound/MT Rs./Qtl	674.00 6591.72	720.00 6857.28	720.00 6800.40	720.00 6989.04
Wheat		U.S.A.	Chicago	C/60 lbs Rs./Qtl	476.50 1190.73	442.75 1111.10	463.00 1136.77	474.25 1156.39

Source - Public Ledger

Foreign Exchange Rates				
Currency	JAN	FEB	MAR	APR
CanDollar	48.52	49.9	50.65	52.93
UKPound	97.8	95.24	94.45	97.07
USDollar	68.09	68.38	66.9	66.44

Crop Production

4. SOWING AND HARVESTING OPERATIONS NORMALLY IN PROGRESS DURING JULY, 2016

State	Sowing	Harvesting
(1)	(2)	(3)
Andhra Pradesh	Winter Rice, Jowar (K), Bajra, Maize (K), Ragi (K), Small Millets (K), Tur (K), Urad (K), Mung (K), Other Kharif Pulses, Ginger, Chillies (Dry), Groundnut, Castorseed, Sesamum, Cotton, Mesta, Sweet Potato, Turmeric, Sannhemp, Nigerseed, Onion, Tapioca.	Autumn rice.
Assam	Winter Rice, Castorseed.	Autumn Rice, Jute.
Bihar	Autumn Rice, Winter Rice, Jowar (K) Bajra, Maize, Ragi, Small Millets (K) Tur (K), Groundnut, Castorseed, Sesamum, Cotton, Jute, Mesta.	Jute.
Gujarat	Winter Rice, Jowar (K), Bajra, Maize, Ragi, Small Millets (K), Tur (K), Urad (K), Mung (K), Other Kharif Pulses, Chillies (Dry), Tobacco, Groundnut, Castorseed, Sesamum, Cotton, Sannhemp.	—
Himachal Pradesh	Summer Rice, Jowar (K), Bajra, Ragi, Small Millets (K) Urad (K), Mung (K), Other Kharif Pulses, Chillies (Dry), Sesamum, Sennhemp, Sumer Potato (Plains).	Winter Potato (Hills).
Jammu & Kashmir	Autumn Rice, Jowar (K) Bajra, Small Millets (K), Urad (K), Mung (K), Winter Potato, Ginger, Tobacco, sesamum, Jute, Onion.	Tobacco, Sesamum, Onion.
Karnataka	Autumn Rice, Winter Rice, Jowar (K), Bajra, Maize, Ragi, Small Millets (K), Tur (K), Urad (K), Mung (K), Other Kharif Pulses, Winter Potato (Plains), Summer Potato (Plains) Black Pepper, Chillies (Dry), Tobacco, Groundnut, Castorseed, Sesamum, Cotton, Mesta, Sweet Potato, Turmeric, Sannhemp, Nigerseed, Onion, Tapioca.	—
Kerala	Ragi, Sweet Potato, Tapicoa.	Sesamum, Tapioca.
Madhya Pradesh	Autumn Rice, Jowar (K), Bajra, Maize, Ragi, Small Millets (K), Tur (K), Mung (K), Other Kharif Pulses, Summer Potato, Ginger, Chillies (Dry), Tobacco, Groundnut, Castorseed, Sesamum, Cotton, Jute, Mesta, Sweet Potato, Turmeric, Sannhemp, Nigerseed.	—
Maharashtra	Winter Rice, Jowar (K), Bajra, Maize, Ragi Small Millets (K), Tur (K), Urad (K), Mung (K), Other Kharif Pulses, Summer Potato (Plains), Chillies (Dry) Tobacco, Groundnut, Castorseed, Sesamum, Cotton, Jute, Mesta, Sannhemp, Nigerseed.	—
Manipur	Winter Rice, Tur (K), Sesamum (K), Sweet Potato, Maize.	—
Orissa	Winter Rice, Jowar (K), Bajra, Maize, Ragi, Small Millets (K), Summer Potato (Plains), Chillies (Dry), Groundnut, Castorseed, Cotton, Mesta	Chillies (Dry.)

4. SOWING AND HARVESTING OPERATIONS NORMALLY IN PROGRESS DURING JULY, 2016—*Contd.*

State	Sowing	Harvesting
(1)	(2)	(3)
Punjab and Haryana	Autumn Rice, Summer Rice, Jowar (K), Bajra, Maize, Ragi, Small Millets (K), Tur (K), Urad (K), Mung (K), Other Kharif Pulses, Groundnut, Castorseed, Sweet Potato, Turmeric, Sannhemp.	Small Millets, (K), Potato.
Rajasthan	Autumn Rice, Jowar (K), Bajra, Maize, Small Millets (K), Tur (K), Urad (K), Mung (K), Other Kharif Pulses, Chillies (Dry), Groundnut, Castorseed, Cotton Sannhemp.	—
Tamil Nadu	Autumn Rice, Jowar (K), Bajra, Ragi, Small Millets (K), Tur (K), Urad (K), Summer Potato (Hills), Chillies (Dry), Groundnut, Castorseed, Sesamum, Cotton, Sannhemp, Onion, Tapioca.	Jowar (R), Summer Potato (Hills), Chillies (Dry), Sesamum, Cotton, Sannhemp.
Tripura	Winter Rice, Urad (K), Mung (K), Sesamum.	Onion, Autumn Rice.
Uttar Pradesh	Autumn Rice, Winter Rice, Jowar (K), Bajra Maize, Small Millets (K), Tur (K), Urad (K), Mung (K), Other Kharif Pulses Ginger, Groundnut, Castorseed, Sannhemp, Nigerseed, Tapicoca.	Small Millets (R), Chillies (Dry).
West Bengal	Autumn Rice, Winter (Rice), Tur (K), Ginger, Chillies (Dry).	Chillies (Dry), Sesamum.
Delhi	Summer Rice, Jowar (K), Bajra, Maize, Tur (K), Urad (K), Mung (K), Other Kharif Pulses, Summer Potato (Plains), Chillies (Dry), Cotton, Sweet Potato.	Winter Potato (Plains), Onion.
Andaman & Nicobar Islands	Autumn Rice, Winter Rice.	—
(K)—Kharif.	(R)— Rabi	

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