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Kurukshetra Compendium

October 2019

Agriculture Reforms: Towards Doubling Farmers' Income

The Government has been reorienting the agriculture sector by focusing on an income-centeredness which goes beyond achieving merely the targeted production.

MAIN FOCUS AREAS OF GOVERNMENTAL POLICIES

1. Higher Production through Productivity Gains
2. Reduction in Cost of Cultivation
3. Providing Assistance to Small and Marginal Farmers
4. Ensuring Remunerative returns
5. Risk Management and Sustainable Practices
6. Allied Activities

1. HIGHER PRODUCTION THROUGH PRODUCTIVITY GAINS

- National Food Security Mission (NFSM) - for cereal, pulses, oilseeds, nutri-rich cereals, commercial crops.
- Mission for Integrated Development of Horticulture crops.
- National Mission on Oil and Oil Palm (NMOOP) launched in 2014-15 for increasing production of oilseeds and Oil Palm.

2. REDUCTION IN COST OF CULTIVATION

- Soil Health Card
- Neem Coated Urea.
- Pradhan Mantri Krishi Sinchayee Yojana (PMKSY)

3. PROVIDING ASSISTANCE TO SMALL AND MARGINAL FARMERS

- Pradhan Mantri Kisan Samman Nidhi (PM KISAN)
- Pradhan Mantri Kisan Maan Dhan Yojana (PM KMY)

4. ENSURING REMUNERATIVE RETURNS

- National Agriculture Market Scheme (e-NAM)- 'One Nation One Market'.
- Farmer Producer Organizations (FPOs) have been on-boarded on e-NAM portal.
- The Model Agricultural Produce and Livestock (Marketing Promotion & Facilitation) Act, 2017 has been released to promote alternative competitive marketing channels for better pricing and to encourage private investment in developing efficient marketing infrastructure and value chain.
- Existing 22,000 rural haats to be developed & upgraded into Gramin Agricultural Markets (GrAMs).
- Warehousing and post-harvest loans at concessional rate of interest.
- Minimum Support Price (MSP) is notified by the Government for certain crops periodically.
- Procurement of oilseeds, pulses and cotton are undertaken by central agencies at MSP under Price Support Scheme (PSS).

5. RISK MANAGEMENT AND SUSTAINABLE PRACTICES

- Pradhan Mantri Fasal Bima Yojana (PMFBY) & Restructured Weather Based Crop Insurance Scheme (RWCIS) provides insurance cover at all stages of the crop cycle.
- Government provides total interest subvention up to 5% (inclusive of 3% prompt repayment incentive) on short-term crop loans up to Rs.3 lakh.
- Paramparagat Krishi Vikas Yojana (PKVY) is being implemented with a view to promote organic farming in the country.



- Mission Organic Farming in North-East- MOVCD (NER) for realizing the potential of organic farming in the North Eastern Region of the Country.

6. ALLIED ACTIVITIES

- 'Har medh par ped' programme.
- National Bamboo Mission
- Bee-keeping has been promoted under Mission for Integrated Development of Horticulture (MIDH).
- For dairy development, there are three important schemes: National Dairy Plan 1 (NDP-1), National Dairy Development Program (NPDD) and Dairy Entrepreneurship Development Scheme.
- Foreseeing high potential in fisheries sector, a Blue Revolution with multi dimensional activities mainly focusing on fisheries production, both inland and marine is being implemented.
- Rashtriya Gokul Mission
- National Livestock Mission

Roadmap for Agricultural Reform

1. The Government constituted a High Powered Committee of the Chief Ministers of 7 States- Maharashtra, Karnataka, Haryana, Arunachal Pradesh, Gujarat, Uttar Pradesh, Madhya Pradesh and Union Minister of Agriculture, Rural Development & Panchayati Raj with Member, NITI Aayog as the Member-Secretary.
2. With this committee, the agenda for Transformation of Indian Agriculture and reforms initiated in 2014 gets sharpened.
3. India will be home of 1.6 billion people by 2035. The per capita availability of land, water and other finite unnatural resources will decline. The food grain demand is estimated over 340-356 million tonnes by 2033.
4. The policies and investment priorities in and for agriculture can be aligned for income security and inclusiveness.

Areas of Reform

1. RESEARCH AND TECHNOLOGY

- The productivity of agricultural commodities is lower than any global benchmark.
- Technology dissipation is lower because of weak R&D activities.
- The frontier areas like gene editing, genomics, artificial intelligence, Nano technology are ushering in 4th Industrial revolution need special attention.

2. WATER-GOVERNANCE

- Close to 84% of fresh water is used in agriculture. Out of 112.53 million ha created irrigation potential of 89.53 million ha alone is utilized.
- Fortunately, the Government, through PMKSY provided overarching governance.
- The Jal Shakti Abhiyan may focus on water conservation. The water governance should focus on micro-irrigation and water budgeting based on a strong tariffs regime.
- A major reforms in the micro irrigation scheme is necessitated to transform it from individual farmer subsidy driven programme to area based public-private business model covering installation, repair and maintenance of the micro irrigation systems.

3. REFORMS IN FERTILISER SECTOR

- Strong advocacy for Zero-Budget Natural Farming (ZBNF).
- Rationalization of the fertilizer subsidy regime is necessary.
- Soil Health Card scheme
- Timely and precise estimates and pay outs are the real challenge being faced by PMFBY.
- States have to reform to accept and include technologies like remote sensing, drones, smart phones etc.

4. CREDIT IN NEED TO NEEDY

- The Sarangi Committee (2016) recommendations on interest subvention are implemented by the Govt. The interest subvention on the short-term crop loan and KCC scheme have been made broad-based to include term credit and consumption needs, besides some risk cover against accidental death.

- The States should reform their land leasing laws based on the Model Act on Agricultural Land Leasing, 2016 prepared by NITI Aayog.
- The alternate system of banking in the form of banking correspondents should be strengthened in regions with low density of rural banks.
- Diversified farming in A.P, Gujarat could be attributed for rapid decline in rural poverty during last 15 years.
- A well-functioning system of contract farming will go some distance towards providing a guaranteed price as well as necessary technical support to the farmer.
- Reforms in contract farming, tariff and tax regimes, credit is pivotal for achieving commercialization in agriculture.
- The policies that facilitate the development of food processing industry will go a long way towards creating demand for high value commodities.

5. MANAGING POST-HARVEST LOSSES

- The annual post-harvest losses are estimated at Rs.92651 crore. Reforms in Essential Commodity Act relating to stock holdings and storage could reduce the losses to great extent.
- The Government can evolve two competing agri-market systems- one through APMCs, and second through integrated value chain models. The FPOs/Joint Liability groups can be promoted to channelize the small growers into the value chain.

6. MINIMISE THE PRICE SHOCKS

- The MSP implementation has never been inclusive for produce, producer and geographies.
- NITI Aayog and Ministry of Agriculture in consultation with the states suggested Price Deficiency Payment System as the alternate mechanism.
- The states should also enact their APMC laws based on the Model Agricultural and Livestock Marketing (APLM) Act, 2017.
- The Government in May 2018 launched the Model Act on Contract Farming to empower the farmers to decide their price and negotiate with the sponsor.

7. MAKE INDIAN FARMERS COMPETITIVE

- Since liberalization, the private sector helped in significant investments in some sectors.
- The revolution in ICT has enable farmers and producers to learn and adopt better practices and access marker information.
- The private sector may be encouraged to supplement investments in high-risk high-potential project. The 'state of the art' food tasting lab could be established for testing of quality standards.
- A consistent policy regime at least for some specified period will establish India as a good buyer and seller of agri-commodities helping the domestic producers a long way.

8. TURNING SMALL INTO BIG

- The grouping of small and marginal farmers into FPOs is the game changer for those who own less land. The budget 2019-20 provided push to set up more FPOs.
- The modernization of income tax laws allowing exemption to FPOs income, approving direct marketing by FPOs to buyers and single state-wide license for trading of the inputs are some reforms needed immediately.
- The current legal structure of FPOs does not provide for external equity infusion or commercial borrowing. This may be solved thought a provision for collateral free loans to FPOs up to Rs.25 lakh from the financial institutions. The rate of interest to FPOs may be rationalized to the rate of individual farmers for crop loans.
- The FPOs registered under Companies Act may also be made eligible for loans from the cooperative banks, etc.

Key Challenges Facing the Indian Agriculture Sector

- Decreasing size of agricultural land holdings
- Poor transport infrastructure
- Poor storage facilities
- Lack of use of modern technology

- Lack of proper irrigation facilities and inadequate access to irrigation which result in over dependence on monsoons
- Loss of soil fertility
- Inadequate access to agriculture credit and lack of marketing support.

Best Farming Techniques in Indian Scenario

A. CONSERVATION AGRICULTURE (CA)

1. Conservation Agriculture is defined as a sustainable agriculture production system.
2. It comprises of a set of farming practices adapted to the requirements of crops and local conditions of each regions.
3. The farming and soil management techniques protect the soil from erosion and degradation, improve its quality and biodiversity, and contribute to the preservation of the natural resources, water and air, while optimizing yields.

B. INTEGRATED FARMING SYSTEMS (IFS)

1. IFS will be more resilient and adaptive to climate variability.
2. Integration of livestock rearing with crop production gives higher economic returns as compared to crop production alone.
3. Farm research in different regions of the country has resulted in identification of many sustainable and profitable IFS models for rainfed areas.

C. PRECISE NUTRIENT MANAGEMENT AND SOIL HEALTH CARDS

1. Site-Specific Nutrient Management relies on principles of '5Rs', the right time, the right amount, the right place, the right source, and the right manner.
2. The Site-Specific Nutrient Management (SSNM) approach emphasizes 'feeding' crop with nutrients as and when needed.

D. EFFICIENT WATER MANAGEMENT

1. Both in-situ and ex-situ rain water management play crucial roles for increasing and sustaining the crop productivity.
2. In the Union Budget of 2018, under the 'Har Khet ko Pani' a component of PMKSY scheme, the ground water irrigation scheme was implemented in 96 districts where less than 30% land is currently getting an assured irrigation facility.
3. The pressurised micro irrigation systems not only save water in food grain production but also contribute to higher productivity, cost effectiveness, higher water productivity and energy use efficiency.

E. ORGANIC FARMING

1. Organic food products are considered to be much safer and nutritious than the products produced by the conventional farming.
2. Organic farming also helps to restore soil health, protect environment, enhance biodiversity, sustain crop productivity and enhance farmers income.

F. CROP DIVERSIFICATION

1. It is paramount importance in mitigating the environmental problems arising on account of monoculture.
2. Inclusion of legumes in cropping systems has been found to be effective in reducing the nitrate leaching in lower profiles.
3. There is need to diversify crop cultivation with pulses, oilseeds, fibre crops along with high value crops like fruits, vegetables, flowers, medicinal etc. as per agro-climatic conditions.

G. RESOURCE CONSERVATION TECHNOLOGIES (RCTS)

1. RCTs refer to those practices that conserve resources and ensure their optimal utilisation and enhance input use efficiency.
2. These techniques include zero or minimum tillage (save fuel), laser land levelling that save irrigation water, system of Rice Intensification (SRI) etc.

H. INTEGRATED CROP MANAGEMENT (ICM)

1. ICM suggests the use of Good Agricultural Practices (GAP) such as Integrated Nutrient Management (INM), Integrated Weed Management (IWM), Integrated Disease Management (IDM) and Integrated Pest Management (IPM), etc., for raising a good crop.
2. ICM is particularly beneficial for small and marginal farmers because it aims to minimise dependence on purchased inputs while utilizing on-farm resources.

I. SMALL-FARM MECHANISATION

1. Improved access to the farm machinery for sowing, harvesting and other operations is an important adaptation strategy to deal with climatic variability.
2. In the recent past, custom-hiring of agricultural machinery became an appropriate institutional arrangement which promotes mechanization of agriculture operations on small farms.
3. For the first time, a systematic attempt has been made under the National Innovations on Climate Resilient Agriculture (NICRA) to setup one custom-hiring centre each at the 130 climatically vulnerable villages across the country.

J. CLIMATE SMART CROPPING

Adaptive measures like change in crop calendar to reduce the negative effects of increase climatic variability in arid and semi-arid tropics prove advantageous in avoiding extreme weather events.

K. PROTECTED CULTIVATION

1. Protected cultivation or greenhouse cultivation is the most contemporary approach to produce horticulture crops. It is also known as Controlled Environment Agriculture (CEA) and is highly productive, encourages water and land conservation as well as protects the environment.
2. The technology involves cultivation of horticultural crops in a controlled environment wherein factors like the temperature, humidity, light, soil, water, fertilisers etc. are manipulated to attain the maximum produce as well as allow a regular supply of them even during off-season.
3. This becomes relevant to farmers having small land holdings who would be benefitted by a technology, which helps them to produce more crops each year from their land, particularly during off-season when the prices are higher. This kind of crop production system could be adopted as a profitable agro-enterprise, especially in peri-urban areas.

Empowering Women Farmers

Women in Agriculture: Statistics

1. According to the 2011 Census, the total number of female workers engaged in agriculture activities in India stood at 65%, with 30.3% of the total cultivators and 42.6% of total agriculture labourers being women.
2. Furthermore, the Agriculture Census conducted every five years by the Department of Agriculture, Cooperation and Farmers Welfare (DAC&FW), established that the 12.78% of the female operational holdings in agriculture during the year 2010-11 have increased to 13.78% during 2015-16.

Steps Taken

1. The DAC&FW dedicatedly implements farmer welfare programmes and schemes. The Women Component Plan requires the state governments to allocate 30 percent of the funds for the welfare initiatives catering to the women farmers.
2. There have been myriad efforts to bolster women's role in agriculture activities.
3. For instance, the foregrounding, recognizing and mainstreaming of women's role in agriculture as encapsulated within 'The National Policy on Farmers', 2007.
4. With a view of creating a women sensitisation module encompassing 'pro woman initiatives', the National Gender Resource Centre in Agriculture (NGRCA) was setup in the DAC&FW in 2005-06.
5. The Agriculture and Farmers Welfare Ministry established a Central Institute for Women in Agriculture in Bhubaneswar, Odisha in the year 1996.
6. The Institute has been undertaking numerous studies on gender implications in the agricultural sector and developing women-centred technology.

7. It is also working to mobilise the Self-Help Groups with a view to increase the income generation of female participants in agriculture and animal husbandry.
8. With the aim to fortify agriculture research and enhance agricultural productivity to bolster farm income, ICAR has initiated the All India Co-ordinated Research Project (AICRP).
9. Its Krishi Vigyan Kendras (KVKs) have successfully trained about 3.1 lakh women agriculturists.
10. There is also a provision under the National Food Security Mission (NFSM) that provides training based on cropping system to farmers including the SC, ST and women farmers to generate awareness on augmented technology for increasing crop production and yield.
11. 15th October of every year was marked as the Women Farmer's Day by the Ministry of Agriculture and Farmers welfare in the year 2016.
12. The "Women Farmer Friendly Handbook" enumerates the special provisions that empower women in multifarious ways, some of them include:
 - Support for Women Food Security Groups (FSGs)
 - Procurement of Agriculture Machinery & Equipments (Subsidy Pattern): Women farmers can avail benefits in tandem with, or over and above the benefits offered to men.
 - Representation of Women Farmers: It is imperative for women farmers to be included in the decision making bodies.
 - Promoting Woman Groups
 - Integrated Scheme for Agriculture Marketing (ISAM): Women are endowed with subsidies for storage infrastructure that includes a 33.33 per cent subsidy (on capital cost) for women as compared to 25 per cent for men.
 - Agriculture Insurance: Safeguarding coverage of women farmers along with a budget allocation and utilization in accordance with the population proportion.

Conclusion

1. According to the Economic Survey of 2017-18, "with growing rural to urban migration by men, there is 'feminisation' of agriculture sector, with increasing number of women in multiple roles as cultivations, entrepreneurs, and labourers."
2. The survey rightly suggests for adopting "gender specific interventions" in agriculture to "increase productivity" and enhancing "agricultural value chain".
3. Women in the agriculture sector have come a long way and an increased participation with wholehearted practical implementation of the training skills received is the way forward for them.

Public-Private Partnership on Agriculture Sector

1. PPPs IN RESEARCH

Many of the studies on PPPs focused on agricultural biotechnology, biosafety regulation, Intellectual Property Rights (IPR) and ways in technology transfer in support of pro-poor in developing countries.

2. PPPs IN EXTENSION

- PPPs cover a wide range of areas including extension services which could enhance technology adoption for sustainable development.
- Agricultural Technology Management Agency (ATMA) facilitated commodity-based groups to partner with private agencies in production and marketing of basmati rice and medicinal plants in Bihar, maize in Andhra Pradesh and mango in Maharashtra.
- It is difficult to get immediate results as PPP in extension will take considerable time for change in the mindset of the farmers in terms for participation, adoption and acceptance.

3. PPPs IN MARKET AND INFRASTRUCTURE DEVELOPMENT

- The Model APMC Act of Government of India encourages direct marketing to enable the farmer get the best price for their produce and create partnerships with banks, finance and logistics companies for lowest cost financing and marketing.

- This attracts private investment in creation of much needed marketing infrastructure, create competition and ensure better service to the farmers.
- Direct marketing like ITC e-choupal and the National Dairy Development Board model of public private partnership provides a viable alternative for small farmers.
- PPP can facilitate the use of micro-irrigation resulting in enhanced irrigation efficiency.
- Integrated micro-irrigation networks are being developed through PPPs.

Impact of PPP Models in Agriculture

1. KNOWLEDGE MANAGEMENT

- Knowledge management strategies in the context of PPP could result in increased production and better services delivery.
- A successful PPP approach in Patna district of Bihar has brought replacement of traditional rice varieties with basmati rice, cultivation of medicinal and aromatic plants and mushroom

2. HIGH-END TECHNOLOGIES DEVELOPMENT

- PPPs have facilitated the development of high-end technologies, which have improved efficiency in management and institutional intellectual property management skills and information database on available technologies in the public sector.

3. BUILDING FARMERS' RESILIENCE TO ENVIRONMENTAL SHOCKS AND MINIMIZING RISKS AND UNCERTAINTIES

- PPPs help the agricultural sector to deal with weather shocks, and enable farmers to de-risk themselves through insurance, etc.

4. FARM MECHANISATION

- John Deere, a leading farm implements manufacturing company has established eight Agricultural Implements Resource Centre.
- This PPP has helped to promote mechanized farming in tribal region.

5. SOCIAL MOBILISATION

- Development departments develop partnership to create a better social linkage through SHGs, Farmers' Clubs, farmers cooperative groups etc.
- Agricultural Technology Management Agencies (ATMA) facilitated creation of large number of Farmer Interest Groups (FIGs) in different states in India which collaborate with private extension players resulting in direct marketing of many farm produce.
- A producer group consisting of tribal men and women farmer was formed in Khurda district of Odisha in 2011 to produce and sell maize through PPP mode.

6. PRODUCTIVITY ENHANCEMENT

- ICAR and Department of Biotechnology, have initiated the dialogue with Monsanto for transfer of Bt cotton technology in India.
- It resulted in an increase of area and productivity to cotton and real cost of production reduced.

7. ECONOMIC EMPOWERMENT OF FARM WOMEN

- The PPP between Kerala Agricultural University, DBT and Cadbury India during past 23 years trained 250 women and established 28 cocoa chocolate units in different parts of Kerala.
- PPP has been found to do gender mainstreaming making it possible for farm women to increase the access of technologies, inputs, credits and markets and eradicating gender differences and discriminations in rural area.

8. INVESTING IN SMARTER VALUE CHAINS

- Food-processing industry, one of the sunrise sectors within the agricultural domain, supported by investments by the government and the private sector, can provide farm extension services, enhances price realization, cut out intermediaries and improve the supply chain through forward and backward linkages.

Limitations of PPP Models in Agriculture

- Private sector seed companies in India tend to concentrate on hybrids where returns are high and assured.

- The private extension services focus on resourceful areas, resource-endowed farmers and limited to the profitable crops and areas, thus varying widely.

Challenges of PPP Approach and Way Forward

- It is difficult to standardize a PPP format because of the parameters used in structuring of PPP cannot be the same every time.
- The lack of transparency is one of the most discussed problems related to PPP.
- The long-time taken for creation of PPP arrangement and number of formalities required to follow happen to be another issue in implementation of PPP approach.
- Undue political favours in many cases are gained by the private party.
- A PPP project has to mainly pass through four main phases viz. project preparation, project procurement, project development and operations. Each of these stages require a careful handling planning and clear-cut demarcation lines of work.

Conclusion

1. The Government of India has been emphasizing to create a facilitating environment for investments in infrastructure building following PPP approach.
2. Partnerships between public and private sectors combine and draw upon the best features of both sectors to render quality services.
3. There are some successful PPP models in agriculture, however, it is a long way to go to have desired successes in Indian agricultural sector.

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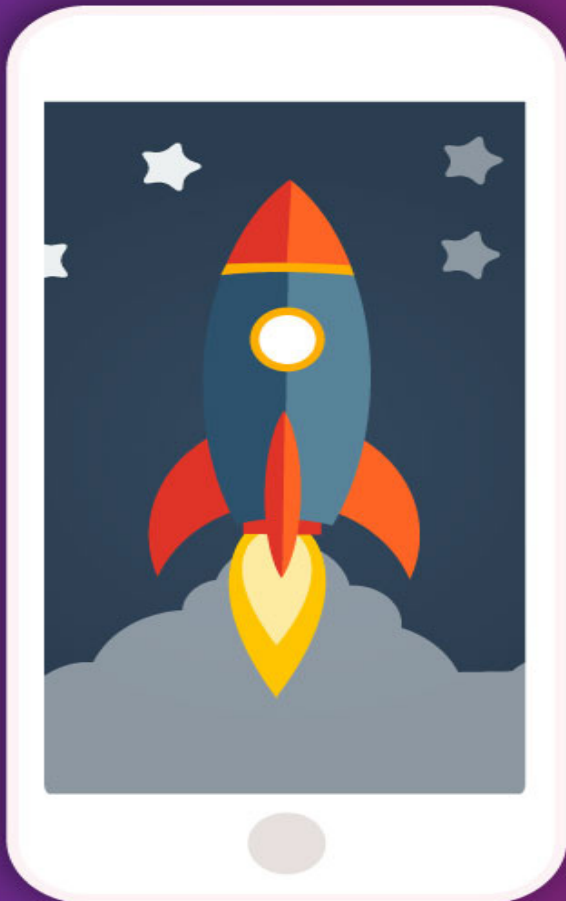
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