

# Engine of Economic Revival – Indian Agriculture

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The Indian agriculture sector, with contribution of about 16% to the gross domestic product of the country, is the largest employment provider with prevalence of disguised and under employment, which is primary source of livelihood for about 58% our population. During this period of global lockdowns, disruption in production and logistic facilities, agriculture sector can play stimulating role in revival of Indian economic growth with lowest per capita investment thereby limiting the workforce migration to urban and industrial centers and relieving the urban agglomerations of the infrastructural bottlenecks due to migrant workforce on the one hand and providing the opportunities for development of under and un developed regions of the other for decentralized development of the country. To play this catalyst role, Indian agriculture sector needs four types of policy interventions to achieve accelerated growth, which are as under:

- I. Management of Food Wastage
- II. Commercialization of Indian Agriculture for Clean Energy
- III. Development of Irrigation Facilities
- IV. National Scientific Crop Plan

**I. Management of Food Wastage:** India is facing massive food wastage which is valued at around \$ 14 Billion (approximately rupees one lac crores) on annual basis estimated by the Food and Agriculture Organization of United Nations. The gradual food waste reduction will go a long way in increasing the disposal income of agriculturists without additional investment of capital or labour in production thereby promoting demand triggered growth in the economy. This requires investment in supply chain management such as sorting & grading, storage & cold chains, transport, food processing and marketing facilities across the country, which will create additional employment. With subdued industrial activities in this pandemic phase, this sector must attract priority investments for sustaining the growth momentum of the economy, which is having low gestation period. The increased income levels of the farmers will lead to increase in personal productive asset base, which coupled with increased social assets in the form of social infrastructure will create multiplier effect for long term sustainable growth. This will also be instrumental in doubling the famers' income by 2022. The initiative will lead to improvement in rural infrastructure, which will further promote the growth process though trickle-down and multiplier effect of investment in rural sectors. The focused

activities should be agro and food processing industries with focus on mega herbal and food parks, which will reduce the food wastage through value addition initiatives and commercialize the agriculture sector.

## I. Commercialization of Indian Agriculture for Clean Energy:

India is paying huge foreign exchange for import of petroleum, which in financial year 2019-20 was close to \$ 102 Billion. Agriculture can support domestic petroleum production in the form of ethanol production from sugarcane and other agricultural produce, which is blended in petrol and biodiesel. The ethanol blending in is currently around 6%, which was below 1% in 2012-13, and is likely to be increased to 20% by 2030. If this programme can be fast tracked by 5% in two years, it will generate additional foreign exchange savings of about \$5 Billion (About Rs 35,000 Crs) annually, majority of which will go to sugarcane growers and domestic industrial units. Since sugarcane is predominantly uses in ethanol production therefore we can develop dedicated cluster for sugarcane development having following potential impacts:

- A. It will enhance the income of the farmers.
- B. It will save precious foreign exchange.
- C. It will promote clean energy.

It will also be a step towards our avowed objective of Atma Nirbhar Bharat. This will create tremendous employment potential in terms of backward and forward linkages. Biodiesel is another promising area for the agriculture and industry complementarity for clean energy. During last five to six years, good progress has been made in this direction, which needs to be fast paced with assured support price as crude prices are highly volatile.

Another such area is stubble waste of wheat and paddy, which is causing severe environment and health hazards in North India by its burning in the open fields. Crop waste in the form of stubble can also be supplemented by wasted lops and tops of the trees for generating bio mass based power. These wastes can also be used for production of bio manure, thereby reducing the use of chemical fertilizers and improving the quality of agro products and soil. The stubble waste can also be used for making papers, card boards, packing material and mixing with plastic. Such initiatives will not only improve the income levels of the farmers but also reduce the environmental pollution and health hazards. To promote these initiatives, the policies should be

educative, enabling, persuasive and rewarding rather than restrictive and punitive.

**III. Development of Irrigation Facilities:** Irrigation is one of the overriding priorities of the governments for agriculture development since decades but without commensurate results due to time overrun of even decades in some of the important projects leading to cost overruns as natural corollary. According to World Bank estimates, about 36.7% land was irrigated in India in 2013-14 which has now increased to about 51% according to Wikipedia report. The increased irrigation facilities improve the extensive and intensive cultivation and river linking national project will go a long way in this direction. The improvement in irrigation facilities through development of local ponds & reservoirs, rainwater harvesting, dams, canals and interlinking of rivers will control and reduce the severity of draughts and floods, which are causing immense damages to agriculture, economic assets, human and animal lives apart from huge expenses for such annual disaster managements. According to India Today report, the estimates of economic losses from flood and heavy rains have been approximately Rs 3,78,247 Crs between 1953 to 2017 apart from destruction of 8.07 Crore houses and loss of human lives to the tune of 1.07 Lacs. The expenses on relief and health related issues have also been quite substantial to manage these socio-economic disasters.

Apart from developing the irrigation potential, the Government is also popularizing the efficient means of irrigation through sprinkler and drip irrigation instead of flood irrigation for optimization of the use of water resources in an integrated manner by focusing on "Per Drop More Crop". This strategy will create balance regional growth of rural and underdeveloped areas by minimizing the vagaries of weather thereby creating local employment through agriculture and allied activities with focus on agro based rural industries. Since we are self-sufficient in food grains, this increased irrigation potential can be used for cultivating commercial crops focusing on import substitution and export promotion. The farming for horticulture, spices, medicinal plants, sugarcane, cotton and jute can be accorded priority for promoting agro based industries by harnessing the economies of scale and scope by commercializing the agriculture for reaping the benefits of convergence.

**IV. National Scientific Crop Plan:** Our country is richly endowed with highly diversified soil texture, flora & fauna and climatic conditions. Therefore the country was divided into fifteen agro climatic zones in seventh five year plan for zone specific policies, whereas National Bureau of Soil Survey and Land Use Planning has divided the country in twenty agro-ecological zones, which were further sub divided in sixty sub zones. National Agriculture Research Project (NARP) of Indian Council of Agriculture Research (ICAR) has divided the country into one hundred twenty agro-climatic zones based on agro-ecological conditions and cropping patterns. These classifications in themselves reveal the rich biodiversity of the country. To leverage this natural, climatic and biodiversity of the country, the country must focus on National Scientific Crop Plan for each agro climatic zone with dedicated research and extension services coupled with storage, processing, quality control and marketing facilities with minimum support price for assured returns to the farmers.

The national scientific crop plan will offer facilitating and enabling infrastructure for improving the productivity and profitability of the agricultural operations. Some of the major advantages envisaged are as under:

- A. It will provide integrated support system in the form of pre-cultivation, cultivation, harvesting, processing, storing, grading and marketing support to the farmers, which will improve operational efficiency, productivity and profitability of the agricultural operations.
- B. It will focus on quality of production rather on quantity of mass production by adopting organic farming or by minimizing the use of chemical fertilizers, insecticides and pesticides for better nutrient value fetching higher prices in domestic and international markets. The market for organic and high nutrient agricultural products is significantly increasing both domestically and globally and may offer good potential for exports.
- C. The national scientific crop plan will optimally utilize the land resources based on soil texture and agro-ecological conditions thereby creating production and marketing hubs for specific crops both for domestic consumption and export.
- D. Since the cropping pattern will be based on soil texture, agro-ecological and climatic conditions confined to specific geographical area, scientific research will be more focused, which will ensure smoother transmission from lab to field.

#### Emerging Scenario

With introduction of single goods and services tax, the movement of goods within the domestic territory has been significantly streamlined. Introduction of electronic national agriculture market (e-NAM) has improved the marketing infrastructure to a great extent. The changes in the outdated Agriculture Produce Marketing Act (APMC) have provided much needed flexibility to the farmers in selling their produce. All these developments have streamlined the logistic and marketing infrastructure of agriculture produce across the country to a great extent and have paved way for National Scientific Crop Plan for the overall development of the agriculture and economy. We can pilot the project with fifteen to twenty agro-climatic zones on priority.

To sum up, India is richly endowed with diversified agro-ecological and climatic regions with diversified flora and fauna. The opportunities are galore ranging from clean energy, organic produce, management of food wastage, import substitution, export promotion and increased agriculture- industry complementarity. Corona led global pandemic has challenged the existing global economic order, which will certainly be at variance from the existing one in a significant manner. The growing concern for health and hygiene is tilting towards vegetarian consumption and Indian agriculture offers tremendous potential in this area. The richness of Indian herbs and spices as immunity booster have also opened up new vista for Indian agriculture sector. Corona pandemic have increased the significance of agriculture and agriculture sector has proved in demonstratively in two ways: One, despite decrease in global trade, Indian agricultural exports have increased during April to July 2020 over last year, whereas overall Indian exports have declines and in Quarter ended June 2020 and two, despite lockdowns and disrupted supply chain for various agricultural inputs, this kharif season of 2020 has posted roughly 20% growth in sowing area.

Therefore the time has now come for focused attention for agricultural growth for harnessing its potential as industry by exploiting the synergies of industry agriculture interdependence, import substitution and export promotion in a focused manner by providing scientific, extension and infrastructural support with assured minimum support price. These strategies are overlapping in nature from the term perspective and cover short, medium and long term perspective.

The increased disposable income of the farming community will support the demand led growth of industrial and services sector by accelerating the multiplier effect through backward and forward linkages for overall economic growth of the economy by creating huge employment opportunities. This will also strengthen the foundation for egalitarian society by focusing on the un and under developed regions for the decentralized development of the country.

