

## Innovative Extension Systems for Doubling Farmers Income

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### SUMMARY

It is quite clear that business as usual will not help in achieving the target of doubling farmers' income. Instead, better to retain farmers in agriculture by making the profession more attractive and rewarding through diversified options, including post-production management and value addition related activities. Obviously, out of the box thinking with focused efforts on out scaling innovations linked to higher productivity, sustainability and profitability through most appropriate diversified, secondary and specialty agriculture linked to post-harvest management, especially around proper storage, value addition and better access to market - would help in doubling farmers' income. It has also been established from past trend that to achieve 8% growth in GDP, a minimum of 4% growth in agriculture sector is a must. Hence, there is no room for complacency just because India had achieved Green, White and Blue Revolutions in the past and the problem of food scarcity has been resolved. On the contrary, the problems of smallholder farmers have magnified and the real income has declined. To reverse this trend, we shall need a clear strategy, including a Road Map, which can lead us to sustainable and profitable farming using innovative approaches to harness opportunities. Also, as stated earlier, accelerating agricultural growth is critical for achieving the Sustainable Development Goals (SDGs), especially to remove poverty, have zero hunger and ensure environmental security. Moreover, greater the emphasis on agricultural research for innovation, higher will be the growth of agricultural GDP.

### INTRODUCTION

All the nations facing problems of poverty, hunger and malnutrition will need to accelerate their agricultural growth for achieving sustainable development goals (SDGs), especially while aiming at no poverty, zero hunger and safe environment for all. The Green Revolution not only led to food self-sufficiency but also helped to reduce the poverty and hunger. And yet, despite fivefold increase in food grains production, as against a fourfold increase in population, India still has around 250 million people who live in poverty and about 45 million children below five years of age who are malnourished. Moreover, after 50 years of Green Revolution, India is also facing the second generation challenges like decline in the factor productivity growth, poor soil health, loss of soil organic carbon, ground and surface water pollution, water related stress, increased incidence of pests and diseases, increased cost of inputs, decline in farm profits and the adverse impact of climate change. On the demographic front, India adds annually almost one Australia (about 15-16 million) to its population. Thus, any progress gets nullified by an overall increase in population. Also, around 48% of the population is currently dependent on agriculture and allied fields and the agriculture sector contributes around 17% to national gross domestic product (GDP). Moreover, the public sector capital investment in agriculture and rural development has declined from almost 20% during Green Revolution period to currently less than 10%. In the process, many States have remained deprived of growth and development. As a result, most farmers are not benefitted especially since majority of them are smallholders and find agriculture not profitable any more.

### Short Term Recommendations:

**Improving Cultivation Strategy in the Dry Season:** Identification of district/ agro-climatic zone appropriate low-cost/high-return crops for cultivation in the off season – vegetables, herbs, spices etc. is an immediate requirement in India. 5 to 10% of the farmers' land must be devoted to these crops to ensure year round income. Larger farmers can be encouraged to grow a larger share of tree crops on their land.

**Improving Farming Practices through Better Nutrient Management:** The SHC scheme must cover all farmers, and soil testing facilities must be made available within one hours' travel from any given farm. Necessary performance indicators/ quality standards must be maintained for Soil test labs to be enforced strictly. The SHC can also be linked to other incentives in order to enforce its serious usage like credit, in the longer term these

linkages effectively incentivize soil health. The efficacy of the proposed interventions must be determined by implementing pilots immediately.

**Providing a strong crop insurance product to the farmers:** Better performance monitoring for both insurers and state government. Profits must benefit the farmers as well as a means to improve confidence, and boost renewal rates. Insurance market needs to be made more competitive, especially with regards to coverage of high-risk/ high return crops like mushrooms.

**Improving the usage of warehousing infrastructure:** Immediate need to incentivize farmers to use warehouses, and for warehouses to cater to farmers. Various innovations may be considered to improve the value proposition for warehouses

**Revamping the Agricultural Extension System:** There is a need for constant training, capacity and knowledge upgradation for extension officers, in order to ensure that they are able to better handle the requirements of the various farmers they work with. Extension workers need to be able to ensure that recommendations provided to the farmers are aligned with the agro-climatic conditions specific to the respective areas.

**Electronic National Agricultural Market (E-NAM):** It is too early to assess the impact of markets under e-NAM, on price realization; 90% of the markets are yet to be brought under the e-NAM scheme. Ensuring their immediate conversion should be a priority action point for the government.

**Food Processing:** Value addition from food processing has the genuine potential to increase the earnings for all of the stakeholders across various value chains. Tying in with the value chain approach, identifying high value crops, that have large potential for value enhancement through food processing must be identified, and farmers encouraged to move towards these value chains.

**Accelerating Income from Livestock and Promoting Integrated Farming:** Ensuring that the contribution of Livestock sub-sector is at least doubled in the immediate short term is vital in ensuring that farmers' incomes are enhanced. Particularly small and marginal farmers need to have at least a couple of milch animals, that are sufficiently productive to ensure that commercial sale, and personal consumption are both possible.

**Digitizing the agricultural value chain:** As collective/ group-based approaches are increasingly being highlighted as the means to reduce input costs, and improve profit margin for farmers, the role of digital services in improving these outcomes even more must be considered, as a means to further reduce costs, and streamline various processes. Digitized end to end platforms have the potential save huge sums of money for farmer groups, which can be spent on various other pursuits, such as infrastructure development/ equipment purchase, etc. The idea is not new – various portals have been launched in the recent years, ranging from e-Kisan (by the SFAC), to e-RAKAM (a portal that enables farmers to sell their food produce to bigger markets), and most recently, the e-NAM that links the various mandis. The objective must to be to centralize these disparate approaches into one common portal that can be administered at the level of the state governments.

**Strategies for Doubling Income**

Income is the most relevant measure to assess the farmers' welfare and agriculture transformation. Even today, the highest returns on investment on per unit basis are from agriculture. What is lacking is the scale unlike corporate investment. Certainly, returns from cultivation alone will not help to achieve the set target of DFI. It has to be supplemented, in fact to a larger extent by livestock and other non-farm activities supported with policy intervention at all levels.

Parameter	Strategies
Science & Technology	<ul style="list-style-type: none"> <li>• Adoption of improved varieties/breeds/strains for additional Technology income</li> <li>• e-Grid of all weather stations for providing location specific weather information</li> <li>• Nutrients sale based on Soil health card programme</li> <li>• Adoption of micro irrigation system to improve the water use efficiency</li> </ul>
Extension	<ul style="list-style-type: none"> <li>• Bridging the gaps between achievable (FLD) and potential yields</li> <li>• More number of effective cluster demonstrations to bridge the information gap</li> <li>• Village adoption to transfer the technologies developed by the research organizations</li> <li>• Upscaling and out scaling of technologies through field days, exhibition and other activities</li> </ul>

Policies	<ul style="list-style-type: none"> <li>• Rationalizing the subsidy on energy use.</li> <li>• Enrolling more number of marginal and small holders under crop insurance scheme.</li> <li>• Integrating all central and state subsidies in agriculture</li> <li>• Formation of Crop Planning Department at national and state level.</li> <li>• Additional investment on agricultural R&amp;D to pave path for innovation.</li> <li>• Setting up more organic food certification agencies</li> <li>• Policy for setting up of FPO for block level seed production.</li> <li>• Integrated land-use policy particularly for water</li> <li>• Breaking of crop monotony and focus on diversification</li> </ul>
Institutions	<ul style="list-style-type: none"> <li>• Setting up of Agribusiness Centres at district level</li> <li>• Transparency and simplified procedures in electronic trading</li> <li>• Developing comprehensive framework for community / corporate farming.</li> <li>• More emphasis on e-learning in regional languages.</li> <li>• Value chain development for primary commodities</li> </ul>

## CONCLUSION

In India, while farmers are the major producers, they also constitute the largest proportion of consumers. Hence, improving small farm production and productivity, as a major development strategy, can make significant contribution towards elimination of hunger and poverty, provided farming is made efficient and remunerative. Experience of countries that have succeeded in reducing hunger and malnutrition shows that growth originating in agriculture, through smallholder farmers, is at least twice as effective in benefiting the poorest as growth from non-agriculture sectors. It is also a fact that India will remain predominantly an agricultural country during most of the 21st century. Therefore, we must have both vision and national strategy for shaping the destiny of agriculture by making it highly productive, efficient and economically attractive for the smallholder farming community. The target of doubling farmers' income by 2022, though apparently not easy yet a very laudable goal augurs well of Government's intention to help farmers. It is also clear that if concerted efforts, as per suggested action plan, are made in a Mission Mode, chances of making agriculture an engine of national economic growth and for smallholder farmer's respectable professions are indeed much brighter.

## REFERENCES

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