

## LAB-TO-LAND APPROACH IN AGRICULTURAL SECTOR

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The much talked about Green Revolution was confined to two states in North India. Agricultural experts for the last decade or so have been talking on the need for a second green revolution, covering the Eastern states where productivity even now is quite poor compared to national and, of course, international standards.

**T**he Indian agricultural sector may go in for a transformation as the government initiates revival measures. India, no doubt, is the largest producer of milk and the second largest producer of foodgrains (more than 200 million tonnes) as also fruits and vegetables (150 million tonnes) and sugar-cane. This may provide satisfaction but it is also a fact that under nutrition and malnutrition in the country has been one of the most acute problems. Though this paints a rather poor image of the country, it also needs to be judged keeping in view India has one of the highest growth in population in the world. It is indeed a very challenging task to boost up food output to keep pace in feeding the growing millions.

It is a well-known fact that due to the cost factor most fruits are beyond the purchasing capacity of the poor and the economically weaker sections. As regards to the milk only some among the lower sections can afford milk for the family though it may be available for children. And though rice and wheat output are quite high, there is need for further increase in production.

An advance estimate of the current fiscal of the Ministry of Agriculture estimated the kharif production at 124 million tonnes—6 million tonnes less than last year and lower than in any of the last three years. Cereal output is estimated at 118 million tonnes which happens to be 5 million tonnes below the last three years' average output while production of pulses is placed at 5.6 million tonnes, half a million tonnes below the three-year average.

The past two kharif (summer) seasons were hit by weak monsoons while heavy unseasonal rains affected the intervening rabi crop in different

parts of Punjab, Haryana, UP and Rajasthan. Now agri scientists are of the opinion that high winter temperatures may impact wheat production, specially in Punjab and Haryana. In UP also, if the weather becomes warm and dry, it may affect flowering and ripening of wheat and gram. The same also holds good for Rajasthan.

There are apprehensions that the country may face rice scarcity during the summer of 2016 but positive measures at this juncture may help tide over the crisis. However, the government may have to import some rice if the situation becomes difficult.

All this comes close on the heels of the recent meeting of the WTO at Nairobi where India lead a group of nearly 50 developing nations to stave off attempts by rich countries to kill food and agriculture subsidies and open domestic markets to agricultural commodities. It is impossible for India, Brazil, Indonesia etc. to cut their own subsidies and lower import duties so that agricultural



commodities from the West can easily invade these markets. This cannot and should not be allowed at the cost of the Indian farmer who depends on his small farm for survival, and this was aptly reiterated by our Commerce Minister.

Over the years, technology, no doubt, helped in raising production and productivity and this needs to be carefully monitored. The much talked about Green Revolution was confined to two states in North India. Agricultural experts for the last decade or so have been talking on the need for a second green revolution, covering the Eastern states where productivity even now is quite poor compared to national and, of course, international standards.

The '*lab to land*' approach has been in the air for more than two decades – or even longer – but now it appears that the government is seriously interested in making this a reality. Around 20,000 agricultural scientists will be required to divide their attention between research and extension education to fulfil the Prime Minister's dream to revitalize the farm sector.

The new mandate has been extended to about 6000 scientists functioning at different centres of the Indian Council of Agricultural Research (ICAR) and over 15,000 scientists working with state agricultural universities under the recently launched programme called *Mera Gaon Mera Gaurav (MGMG)*. The scheme envisages scientists to "select villages as per their convenience and remain in touch with the villages and provide information to the farmers on technical and other related aspects in a time frame through personal visits or on telephone".

It is understood that groups of four multi-disciplinary scientists each, would be constituted at these institutes and universities. The scientists are expected to perform the functions with the help of Krishi Vikas Kendras (KVKs) and Agriculture Technology Management Agency (ATMA), both already mandated with extension work. At the national level, the Assistant Director General (Extension) and the principal scientists of Agricultural Extension of ICAR would be the nodal officers.

A section of scientists at the ICAR have reportedly stated that if the focus is shifted to extension work, research may suffer. The obvious



answer to this is that if research cannot be translated to the field and does not benefit the small farmers, such academic research work has little or no value. It may also be a fact that arm chair researchers do not want to exert themselves and see the grass-root problems and help the farming community with solutions, thereby aiding the process of productivity increase.

The aim of reaching out to around 20,000 select villages is indeed a significant step taken by the present Govt. That PM is aware of the problems in the agricultural sector and this decision should go a long way in gearing up the much needed increase in production and productivity. Problems like diseases of plants, putting the right amount of fertilizers and chemicals, saving the plants from infestation of insects etc. could be tackled if the scientists render proper advice and guidance. The maximum benefit would obviously go to small and medium farmers who are not qualified enough and need this guidance.

Even if there is cooperation from 2000-3000 scientists of ICAR and another 7000-8000 from the various state agricultural institutes and universities, there is reason to believe that there could be considerable help to the farming community. As is well known, the KVKs are not of much help and in most areas these are virtually defunct. Thus this exercise is expected to result in unexpected gains to most farmers, who are presently facing various sorts of problems.

This endeavour would help in bringing technology to the villages where productivity levels are rather poor and need to be substantially increased. Crop failures could be tackled and also the after-effects of drought and floods. The IITs

are also doing some work in the villages and the programme of technology transfer could effectively change not just agricultural productivity but also other manufacturing activities in these areas.

Apart from this, the government **announced a new Rs 8800 crores crop insurance scheme** – called the **Pradhan Mantri Fasal Bima Yojana (PMFBY)** – for farmers with a significantly lower premium to cover the loss of crop due to natural calamities. As per the scheme, farmers will pay only 2 per cent of the sum insured for kharif foodgrains/oilseeds production and 1.5 per cent for rabi crops under the Yojana. This indeed is a very judicious programme aimed to boost production and productivity.

While there is need to give stable crops, production of pulses has to be substantially boosted up. This being the **International Year of Pulses**, there has to be special incentives to ensure higher growth so as to meet the demand of the poorer sections, specially in countries like India. The IYP aims to heighten public awareness of the nutritional benefits of pulses as part of sustainable food production aimed towards food security and nutrition. The Indian government should seize the opportunity to encourage connections through the food chain that would better utilize pulse based proteins and increase production of pulses.

In a country like ours where protein deficiency is rampant among women and children, there

**Table I**  
**Trends in Agricultural Production during Five Year Plans**  
(Average Production in Million Units)

Crop	First	Second	Third	Fourth	Fifth	Sixth	Seventh	Eight	Ninth	Tenth	Eleven
Rice	25.0	30.3	35.1	41.8	47.3	54.5	65.1	78.7	87.3	85.6	97.3
Wheat	7.9	9.7	11.1	25.4	29.8	41.2	48.3	62.9	71.3	70.2	84.4
Jowar	7.5	8.7	8.8	8.3	10.8	11.3	10.90	10.7	7.9	7.2	7.0
Bajra	3.4	3.4	3.9	6.0	5.0	6.0	5.2	6.7	7.1	8.2	9.2
Maize	2.7	3.6	4.6	6.1	6.3	7.3	7.6	9.8	11.6	14.0	19.8
Other	6.6	6.5	6.3	6.4	7.1	6.0	5.4	4.9	4.5	3.6	4.0
Pulses	10.1	11.7	11.1	10.9	11.7	11.8	12.5	13.3	13.1	13.3	15.9
Total	63.2	74.0	81.0	103.0	118.1	138.1	155.0	189.0	202.9	202.2	237.4
Oilseeds	5.5	6.7	7.3	8.3	8.9	11.4	13.9	21.9	21.2	23.2	28.9
Sugarcane	55.3	80.3	109.2	128.1	153.3	174.9	196.4	258.4	292.4	277.0	325.8
Cotton	3.9	4.8	5.4	5.9	6.8	7.5	8.4	12.2	10.8	16.0	28.1
Jute	3.9	4.4	5.7	5.5	5.2	6.4	8.9	8.1	9.6	10.1	10.3

Source: Sury M M (2013): Five Year Plans of India, New Century Publications, New Delhi

**Table II**  
**Productivity of Land in Some Countries, 2012**

Rice/Paddy	(kgs/hec)	Wheat	(kgs/hec)	Maize	(kgs/hec)	Groundnut (in shell)	(kgs/hec)	Sugarcane	(kgs/hec)
Egypt	9,702	China	4,995	USA	7,744	China	3,575	Argentina	71,429
<b>India</b>	<b>3,591</b>	France	7,599	France	9,085	USA	4,699	Brazil	71,304
Japan	5,391	<b>India</b>	<b>3,173</b>	<b>India</b>	<b>2,057</b>	Vietnam	2,134	China	68,811
Myanmar	4,049	Iran	1,971	Argentina	7,343	<b>India</b>	<b>1,179</b>	<b>India</b>	<b>87,200</b>
China	6,744	Pakistan	2,714	Philippines	2,856	Brazil	3,089	Gautemala	1,25,164
Thailand	3,000	UK	6,657	China	5,956	Japan	2,410	Colombia	1,14,983
USA	8,349	Egypt	6,516					Egypt	
<b>World</b>	<b>4,395</b>	<b>World</b>	<b>3,115</b>	<b>World</b>	<b>4,494</b>	<b>World</b>	<b>1,676</b>	<b>World</b>	<b>68,854</b>

Source: Compiled from various sources.



is need to promote pulses as they are affordable and highly nutritious source of protein and vital micronutrients that can greatly benefit health and livelihood. It also needs to be mentioned here that pulses also offer a great potential to lift farmers out of rural poverty as they can yield two to three time higher prices than cereals and their processing provides additional economic opportunities. In this connection, it would be pertinent to refer to the observations of the UN Secretary General that pulses contributed significantly in addressing hunger, food security, malnutrition and human health and also are a vital source of plant-based proteins and amino acids.

Added to this is the fact is the government's initiative, specially of the Prime Minister for expanding the base of the recently announced crop insurance scheme so that at least 50 per cent of farmers are covered in two years. The PM highlighted benefits of the scheme where farmers would have to pay very low premium, in his recent **Mann ki Baat** programme. This obviously would bring confidence among the farming community and help them increase their farm income through higher and diversified production.

Recently the UN Secretary General, Ban Ki Moon, appealed to the member states to achieve zero hunger by 2025. For India with around 30 crore chronically hungry population, it is indeed a great challenge to plan strategies to gradually reduce underweight children from the present 30 per cent to nil in the next ten years. But with the present rate of progress, this can be achieved if the focus on the rural sector remains unhindered.

Reforming the rural economy is the key for bringing the much-needed transformation that

India needs at this juncture today. Primarily the agriculture sector has to be made viable and sincere efforts by the government could substantially increase such exports. Added to this are agro-based industries that have high potential both in the country and abroad, if marketed properly. Recently the government has also demonstrated its 'Make in India' approach by giving thrust on khadi and handloom industry to make it cater to latest fashions and needs of the young generation.

The approach of the present government appears to be sincere and quite positive but the implementation of the schemes has to be closely monitored so that results are not delayed. It appears that there is realization of the fact that to upgrade the livelihoods of the masses and to make the country economically strong, the focus has to shift to the rural areas. The villages are our lifeline and thus the initiatives taken by the government to transform farming and also the rural sector as a whole should yield results, if there is sincerity in implementing the schemes taken up.

Well-known economist like Prof. Michael Lipton, formerly of Sussex University, had around two decades ago said that there was a trend in the Third World countries to subsidize the urban middle class at the cost of the rural poor. In India, as also in many developing countries, the trend is to maximize growth by ignoring agriculture and rural development and emulate the Western models of development.

Keeping in view the need for grass root development geared towards poverty alleviation, food security and sustainable agriculture, a strategy has to be formulated which could bring about balance between agriculture and industry and between the rural and urban sectors. The strategy should also try at narrowing – or at least not further – the widening disparity between the ever increasing millionaires and the poor and the deprived. The coming years are thus expected to be crucial for revival of the agricultural sector and, in turn of rural India.

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