

AGRICULTURE FOR INCLUSIVE ECONOMIC GROWTH: ISSUES AND POLICY OPTIONS

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Abstract

The real challenge for the agriculture sector in future would be, to feed the ever growing population and to protect long term sustainable productive capacity of natural resources. It is therefore necessary that Indian agriculture must grow faster for inclusive economic growth along with ecological balance. Since 1991, the government of India has been adopting economic liberalism policy with the objective to put the Indian economy out of low level equilibrium trap. The growth rate in GDP was observed high after 1991- reforms as compared to pre- 1991 reforms. But this growth rate resulted rural –urban income disparities. The organised sector which employed about 8 per cent of the total workforce in 1991 ,employed less than 7 per cent of total work force in 2011 or at the rate of 0.41 million per annum. During this period public sector employment declined absolutely from 19.05 million to 17.54 million. This new economic policy has proved a process of inequality growth and not inclusive growth. However, the growth rate of agricultural sector was estimated to 2.31 per cent from 1995 to 2005. The below target growth in this sector is one of the reasons for poverty, income disparities and high food prices. There is a lot that needs to be done to increase farm income particularly marginal and small farmers. Therefore, the entire policies, institutes and delivery system must wake up to the effect that should deliver to marginal and small farmers as more than 80 percent farmers belongs to these size groups and also accounts for a larger proportion of the total households in most of the states. To accelerate the agricultural development and reduction in regional disparities' a big push is required to revive the green revolution as well as so called green revolution states like Punjab, Haryana, western-UP and Tamil-Nadu .

India is Growing

Liberty, growth, equity and social justice together compose the soul of a true democratic nation as it preserves in its commitment to increase social welfare. After independence, we as a nation made a similar commitment to

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ourselves to be guided by these principles as we march ahead on the path of progress, prosperity and growth. Since independence, the country achieved much, but the success so far must not prevent us from focusing on our shortcomings with a spirit to resolve, so that we may be able to shape a still better future (Patil, 2010).

Table 1 shows the annual growth rate of GDP during selected periods from 1951 to 2013. If we considered Indian economy since independence as a whole the turning points came in 1951, 1980 and 1991. In 1951 First Five Year Plan was introduced while in 1980 liberal trade policy was adopted and in 1991 New Economic Policy was announced which was based on economic liberalism. During the period from 1951 to 1980 annual growth rate of GDP was 3.5 per cent. This growth rate was respectable as it was a radical departure from the colonial past and it was impressive with reference to the near stagnation during the colonial era. However, this growth was not enough to meet the needs of the country where the initial level of income was very low. This growth rate was described Hindu rate of growth by Raj Krishna. The growth rate in GDP from 1981-82 to 1990-91 (pre-1991 reforms) was 5.7 percent. If we include 1991-92 crisis year in this period i. e. from 1981-82 to 1991-92 the annual growth rate in GDP was observed to 5.3 percent. Indeed it was much better than the most countries of the world. . But even this was not enough. While, the growth rate in GDP was 6.9 percent for the period 1992-93-2012-13 (Post-1991 reforms). In spite of the financial crisis in 2008-09 the growth rate in GDP was estimated to 7.9 per cent for the period 2003-04 to 2012-13.

It is evident from the table that the growth rate in GDP was observed high after 1991- reforms as compared to pre- 1991 reforms. But this growth rate resulted rural–urban income disparities. The Planning Commission of India observed that, the monthly per capita consumption expenditure in rural areas has been increased from Rs.772/- to Rs.1430/-, while urban consumption has increased from Rs.1472/- to Rs.2630/- from the period 2007-08 to 2011-12. The organised sector which employed about 8 per cent of the total workforce in 1991 ,employed less than 7 per cent of total work force in 2011 or at the rate of 0.41 million per annum. During this period public sector employment declined absolutely from 19.05 million to 17.54 million. It is a jobless growth and jobless growth is not desirable/required in labour surplus country like India. Therefore, it can be concluded that post -1991 reforms is a process of inequality growth and not inclusive growth.

Table 1: Average Annual Growth Rates of the Country's GDP during Selected Periods (in percent)

Period	Growth Rate
Prior to the Shift in Growth Rate 1950-51 to 1979-80	3.5
Pre-1991- Reform Growth Period 1981-82 to 1990-91	5.7
1981-82 to 1991-92	5.3
Post-1991-Reform Period 1992-93 to 2002-03	5.9
2003-04 to 2012-13	7.9
1992.93 to 2012-13	6.9

Source: Economic Survey, various issues, GOI

II. Agricultural Sector Growth

Agriculture occupies a key position in all economies irrespective of their level of development. It satisfies certain basic human needs by fulfilling their food and non –food demands. It supplies food grains, commercial crops, plantation crops, horticulture crops and certain allied activities such as milk, dairy products, poultry products and fishery. Most of the developed and industrialised countries received their initial spurt for industrial advancement from agriculture. The Indian agrarian structure was beset with numerous impediments and problems on the eve of independence (Bhalla 1983). To change the traditional character of Indian agriculture, the Government of independent India has introduced many institutional and infrastructural changes. Inspire of these reforms, India remained dependent on foreign countries for food to feed the growing population (Soni 1992). To come out from this problem the government of India invited a team of agricultural experts of “Ford Foundation ” to suggest remedies. The team recommended that India must concentrate only on certain crops and certain areas, because the country is lacking in necessary inputs. This led to the introduction of “Intensive Agriculture District Programme” in 1961. A modified version of IADP was extended in the form of “Intensive Agricultural Area Programme” in 1964-65 and it had covered nearly 10 per cent of cultivated area in 1966-67. This strategy marked a big breakthrough and it is often called the phase of Green Revolution (Chopra,1986). The green revolution enables the farmers for undertaking multiple cropping and thereby increasing the agricultural production (Sharma,1992). The adoption of new farm technology set into motion sequence of events, which have led to varying degree of multiplier effect on development process and has been mainly responsible for taking the agricultural sector out of low equilibrium trap (Samanta, 1989). India is likely to be the most populous country on this

planet by 2030 with 1.60 billion People. A projection is made by the National Commission on Integrated Water Resource Development (NCIWRD) on food grains demand which indicates that the total demand for food grains would be about 316 million tons by 2025 and 441 million tons by 2050. This would put tremendous pressure on natural resources and we would have a challenge in providing food, water, health, education, shelter, sanitation and jobs to all. Therefore the real challenge for the agriculture sector in future would be to feed the ever growing population and to protect long term sustainable productive capacity of natural resources. It is therefore necessary that Indian agriculture must grow faster for an inclusive economic growth along with ecological balance. Though Indian economy has registered 7.9 percent average annual growth rate for the decade ending 2012-13, while agricultural sector has maintained a growth rate of just above three percent during this period. This coupled with high dependence of population on agriculture resulted in widening of rural-urban income disparity (GOI, 2012-13). It is evident from the table 2 that during the Pre-Green Revolution period (1960-69), the sector grew at a rate of 0.7 percent with the policy support of land reforms and development irrigation. In the Green Revolution period (1968-76) adoption of HYVs and Chemical inputs increased agriculture growth to 2.26 percent. The growth rates were comparatively high during the period of technology dissemination (1975-83) at 2.34 percent and diversification period (1988-95) at the rate of 3.2 percent. The agricultural growth in this period was mainly supported by institutional credit, subsidized input supply and incentive schemes mainly minimum support price. However, the same momentum could not be sustained for the Post-1991- reforms period. The growth rate was estimated to 2.31 per cent during 1995 to 2005. Keeping this in view, the 11th Five Year Plan emphasised not only on growth in income alone but also its outcomes for the poor also. The agricultural sector grew at a rate of 3.6 per cent per annum, during 11th Five Year Plan. This growth rate was much higher than the average annual growth of 2.5 per cent and 2.4 per cent for the 9th and 10th five year plans respectively, though this growth rate was low as targeted to 4 percent for the 11th plan. An important reason for this dynamism has been due to a step-up in gross capital formation (GCF) in this sector relative to GDP of this sector, which has consistently been improving from 16.1 per cent in 2007-08 to 19.8 per cent in 2011-12 at 2004-05 prices. Inevitably there are some weaknesses that needs to be addressed and also new challenges that needs to be faced so that high inclusive growth could be achieved. To accelerate the agricultural development and reduction in regional disparities' a big push is required to revive the green revolution as well as so called green revolution states like Punjab, Haryana, western-UP and Tamil-Nadu .

Table2: Agricultural Growth during the selected periods (in percent)

Period	Growth Rate
Pre-Green Revolution Period1960-1968	0.7
Green Revolution Period1968-1976	2.26
Technology Dissemination Period1975-1983	2.34
Diversification Period1988-1995	3.21
Post-1991- Reforms Period1995-2005	2.31
11th Five Plan Period(Inclusive Growth Strategy) 2007-2012	3.60

Source: Economic Survey, various issues, GOI

Components of Gross Domestic Product

Agriculture has been observed to contribute a very large share of GDP of most of economies before industrial development takes places in them. As the process of industrial development accelerates, the share of non-agriculture sector in GDP tends to increase steadily. This does not imply that the agriculture production does not increase. It only implies that the growth in the production of industrial and services sectors is faster than the growth in agricultural sector. This process of change is the consequence of a change in the structure in the economy which steadily becomes more industrialised. Such a change in the composition of GDP is cited as an indicator of economic development (Dantwala, 1991 and Rao, 1994). Table 3 reveals the components of GDP from 1951-52 to 2011-12. At the time of independence, the share of agricultural sector to GDP was more than 55 per cent and about 70 per cent of population was depend on the agricultural sector for their livelihood. Today, agricultural sector accounts for about 14 per cent of GDP and employees more than fifty per cent of workforce. There are two reasons by which Indian agricultural sector is considered central to growth; i) Still it has a big share of GDP and it stimulates structural transformation process by novelising resources move from low productivity sector to high productivity sector ; and ii) It can be driven by productivity improvements within the sector. More workforce dependency and low productivity partly explains why high poverty prevails in India. To achieve the objective of high inclusive growth, we need faster farm sector growth and percolate benefits to the poor marginal and small farmers. The below target growth in this sector is one of the reasons for poverty, income disparities and high food prices. It can be concluded that while India is growing there is a lot that needs to be done to increase farm income particularly marginal and small farmers. Therefore, the entire policies, institutes and delivery system must wake up to the effect that they should deliver to marginal and small farmers since more than 80 percent of the

farmers belongs to these size groups and also accounts for a larger proportion of the total households in most of the states.

Table 3: Components of Gross Domestic Product (In percent):

Year (1)	Agriculture Sector (2)	Industry Sector (Including Construction) (3)	Services Sector (4)
1951-52	55.4	15.4	29.3
1961-62	49.4	19.5	31.1
1971-72	43.1	22.5	34.5
1981-82	37.6	24.6	37.9
1991-92	30.3	25.6	44.1
2001-02	24.0	25.0	51.0
2009-10	14.6	28.5	56.9
2010-11	14.5	30.4	55.1
2011-12	14.1	29.6	56.3

Source: Economic Survey, various issues, GOI

Compound Growth Rates of Area, Production and Productivity

Over the period of time the contribution of agricultural sector has declined but industrial contribution hardly increased, implying that the fall in agricultural sector share has been compensated by the service sector. (Ministry of Finance 2013). Table 4 depicts the compound growth rate of area, production and productivity of food grains, non-food grains and all principal crops during selected periods from 1951 to 2011. The table shows that the food grains production grew at 2.64 per cent per annum. While productivity increased at the rate of 1.51 per cent and area increased at 1.12 per cent per annum from 1950-52 to 1965-66. The area growth contributed to the output growth during this period. The food grains production increased from 52 million tons in 1951-52 to 89.4 million tons in 1964-65. The green revolution led to a significant increase in food grains production from 74.2 million tons in 1966-67 to 129.6 million tons in 1980-81 at an annual growth rate of 2.82 per cent. The productivity increased at the rate of 2.3 per cent and the area increased at a small rate of 0.51 per cent per annum. The period from 1981-82 to 1990-91 witnessed favourable agricultural growth. The food grains production increased at a rate of 2.85 per cent mainly driven by productivity improvements (2.74 per cent) though,

the area under food grains witnessed a negative growth rate of (-0.23) per cent. The growth in non-food grains production also increased at a rate of 3.77 per cent. It is clear from the table that this period witnessed favourable and broad –based agricultural growth. However, the growth rate of food grains productivity declined from 2.85 per cent in 1980s to 2.02 per cent in 1990s while the growth rate of productivity decreased from 2.74 per cent to 1.52 per cent during the same period. A similar trend was observed in the case of non-food grains. During the post-1991- reforms agricultural sector became a serious problem, as compare to the non- agricultural sector. To improve the agricultural growth during post-1991-reforms, the government focused concentrated attention on agricultural productivity since 2005-06. The government launched National Horticulture Mission in 2005-06, 'Rashtriya Krishi Vikas Yojana' in 2007-08, National Food Security mission in 2007-08, Bring Green Revolution to Eastern India 2010-11. These programmes resulted a significant turnaround for increasing agricultural growth. The inclusive growth strategy for the 12th Plan is based on the experience of the inclusive outcomes of the 11th Plan. The approach to 12th Five Year Plan titled "Faster, Sustainable and More Inclusive Growth". National Mission for Sustainable Agriculture and Rain fed Area Development Programme has also been initiated during the 12th Plan.

Table 4: Compound Growth Rates of Area, Production and Productivity/Yield of Food grains, Non-Food grains and All Principal Crops during 1951-52 to 2010-11 (Base: TE1981-82 = 100)

Period	Food Grains			Non-Food Grains			All Crops		
	Area	Prod.	Yield	Area	Prod.	Yield	Area	Prod.	Yield
1951-52 to 1965-66	1.12	2.64	1.51	2.07	3.70	1.00	1.29	2.72	0.93
1966-67 to 1980-81	0.51	2.82	2.30	0.87	2.49	1.42	0.58	2.62	1.62
1981-82 to 1990-91	-0.23	2.85	2.74	1.12	3.77	2.31	0.10	3.19	2.56
1991-92 to 2000-01	-0.07	2.02	1.52	1.18	2.69	1.09	0.27	2.29	1.33

2001-02 to 2010-11	0.37	2.12	2.89	2.16	3.67	2.49	0.91	2.50	3.25
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Source: Depart of Agriculture and Cooperation, GOI.

Production and Productivity

Table 5 shows the gross cropped area, production and productivity of food grains, cereal and pulses from 1970-71 to 2011-12. It is clear from the table that in 1970-71 the gross area under food grains farming was 124.3 million hectares which was increased to 125.0 million hectares in 2011-12. While, gross cropped area under cereal cultivation was declined from 101.8 million hectares in 1970-71 to 100.20 million hectares in 2011-12. However, the gross cropped area under pulses was increased from 22.6 million hectares to 24.8 million hectares in the reference period. Over the last four decades the gross cropped area under food grains and pulses cultivation was increased to 0.56 per cent and 9 per cent respectively but the gross area under cereal farming decreased by (-) 1.57 per cent. The production of food grains and cereal increased almost two and half times more while pulses production increased about one and half times more in 2011-12 than the production of 1970-71. It is also evident from the table and figure 1 that the productivity of food grains increased from 872 kg/ hectare in 1970-71 to 2059 kg/ hectare in 2011-12. The productivity of cereal increased from 949 kg/hectare to 2396 kg/hectare whereas the productivity of pulses increased from 524 kg/ hectare to 694 kg /hectare. For the period 1970-71 to 2011-12, per hectare productivity of cereals, food grains and pulses was increased by 152 per cent, 136 per cent 32 per cent respectively. Since there is no possibility of enlarging area under cultivation therefore, the future growth of production will have to be fostered by increasing productivity. With the urbanization and industrialisation area already under cultivation are likely to decline further and this again impels strategies to increase productivity. A big push is required to revive the green revolution both in lagged states as well as so-called green revolution states like Punjab, Haryana, Western U.P. and Tamil-Nadu.

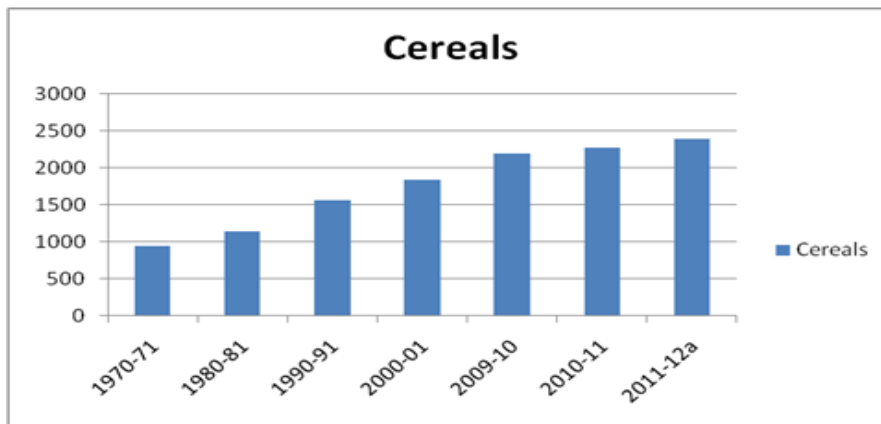
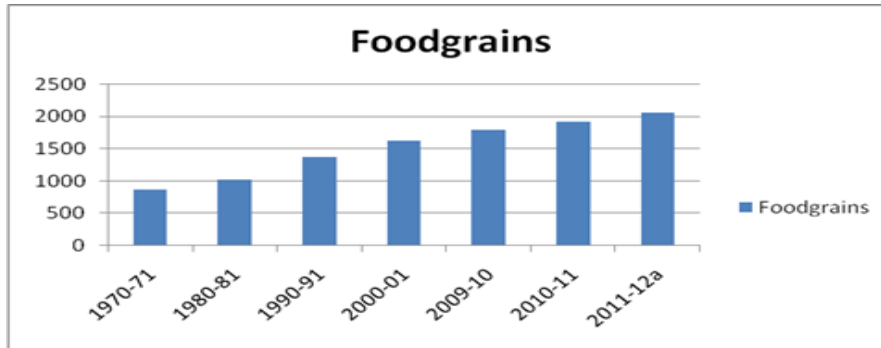
Table 5: Area, Production and Productivity of Food grains, Cereals, and Pulses from 1970-71 to 2011-12.

Year	Gross area in Million Hectares	Production in million tons	Productivity KG/Hectare

	Food grains	Cereals	Pulses	Food grains	Cereals	Pulses	Food grains	Cereals	Pulses
1970-71	124.3	101.8	22.6	108.4	96.6	11.80	872	949	524
1980-81	126.7	104.2	22.5	129.6	119.0	10.60	1023	1142	473
1990-91	127.8	103.2	24.7	176.4	162.1	14.30	1380	1571	578
2000-01	121.0	100.70	20.03	196.4	185.7	11.0	1626	1844	544
2009-10	121.3	98.0	23.3	218.1	203.4	14.7	1798	2202	630
2010-11	126.7	100.30	26.4	244.5	226.30	18.2	1930	2278	691
2011-12	125.0	100.20	24.8	257.4	240.20	17.20	2059	2396	694

Source: Economic Survey, (various issues), Govt. of India.

Figure 1: Per Hectare Productivity of Food grains, Cereals and Pulses from 1970-71 to 2011-12.



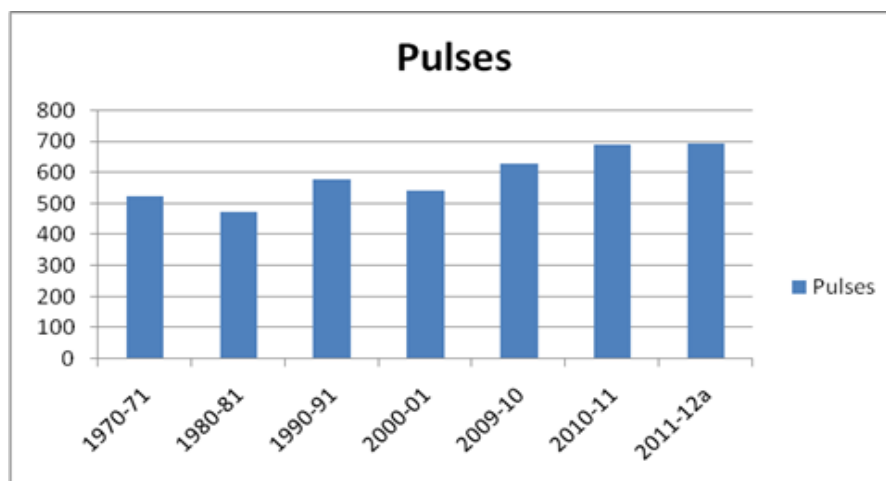


Table 6 depicts the per-hectare productivity of cereal crops in different countries of the world during 2009 to 2013. It is evident from the table that in India per-hectare productivity of cereal crops was below than the per-hectare productivity in Germany, USA, China, Japan and Argentina. As it was estimated 2.3 time high in Germany, two time in USA and 1.98 time high in China.

Table 6: Per-Hectare Productivity of Cereal in Different Countries of the World for the Year 2009-2013.

Country	Productivity in Kg.
India	2954
Argentina	4769
Japan	5020
China	5837
USA	5922
Germany	6900

Source: www.mea.gov.bd/Statistics.

Note: Cereal includes rice, wheat, maize, barley, oats, rye, millet, buckwheat and mixed grains

The economic growth has failed to be sufficiently inclusive, particularly after the mid-nineties. Although agriculture is still a single major sector providing employment to more than fifty per cent of the country's population. Many studies have highlighted that low technological inputs, unsustainable water management and resource utilisation, rising pressure on land, lack of technological breakthrough for productivity increase in the rain-fed area,

absence of effective mitigates for price, production and personal risks, lack of research and development are some of the critical issues of concern for agricultural sector of India. The crucial role played by the agricultural sector has been identified as central to inclusive growth and its recent economic slow-down warrant a special attention for its revival. The output growth of agricultural sector would be definitely reduce poverty to a great extent than growth in any sector providing employment.

III. Policy Options

Production and Productivity

More inclusive growth of the economy would not be possible without agricultural growth as more than half of the country's population still dependent on agricultural sector and millions of people are engaged in secondary agriculture. For broad-based development of the agricultural sector there are two strategy options; I) by increasing area under cultivation, II) by increasing the productivity. The first approach is ecologically unsustainable in the long run. The only sustainable strategy for growth in agriculture is continuous increasing the productivity. This will achieve the target of inclusive growth by generating additional income and employment opportunities. The productivity should be increased by adopting both price and non-price policies such as prices of the products, adoption of farm technology at the recommended level, extending irrigation facilities and strengthening the extension activities etc. Since agriculture is a state subject therefore, State Governments through Regional Research Stations should undertake a comprehensive study of climatic and soil conditions along-with biological and environmental implications. On the basis of these studies, improved strains should be recommended for a particular agro-climatic condition, because simply sowing of high yielding varieties of seed hardly solves the complicated problem of achieving high productivity target. The farmers should have proper guidance from extension officials regarding the application of seed, fertilizing, manuring, insecticides and pesticides and modern cultural practices as, productivity is determined by all these factors.

The regional research stations should undertake a comprehensive study of climatic and soil conditions along-with biological and environmental implications. On the basis of study, improved strains should be recommended for a particular agro-climatic condition, because simply sowing of high yielding varieties of seed hardly solves the complicated problem of achieving high productivity target. Much attention should be paid to extension work and demonstration to induce peasant to take up this programme seriously. It should be the responsibility of the regional research centre to evolve improved strains of crops for the region. The

farmers should have proper guidance from extension officials regarding the timing of sowing, fertilizing, manuring, insecticides and pesticides and modern cultural practices. The farmers should be educated by extension workers about the recommended quantity of inputs used in various crops.

Price Policy

Price Policy basically consists of three instruments, minimum support prices, buffer stock and Public Distribution System. There has been debate on price and non-price factors in literature. But both price and non-price factors are important in raising /accelerating agricultural development. The policy makers of the country must recognize the fact that it is not possible to achieve inclusive growth without providing the security to its own farmers in the form of better remuneration and there is a need to maintain balance between producers' prices and consumers' prices. This could be achieved by careful calibration of minimum support prices and tariff policy. The minimum support prices policies should be strictly based on the cost of production. The MSPs should also be balanced across the crops as well as should announced in advance of the season and should be flexible so as to take into consideration subsequent and unforeseen changes in the cost of inputs like seeds, fertilizers, diesel, labour charges etc. There is also a need to link Minimum Support Prices (MSPs) with the whole sale price index (WPI).Pulses production can be enhanced in several states with high MSPs and procurement. In the context of globalisation, tariff policy becomes important for agricultural commodities. It is important to monitor exports, imports and fix tariffs accordingly. The current policy of economic liberalism should be pursued with an element of specificity of agricultural sector where livelihood security of the poor is an important issue and the real solution lies in reducing the cost of cultivation. There is a need for reforms in buffer stock operations and Public Distribution System (PDS).The buffer stock operations are becoming expensive whereas there are significant leakages in PDS. Private sector can be involved in storage and some other activities with regulations.

Irrigation and Water Management

Irrigation is an instrument with which rural transformation and agriculture development could be possible. So, irrigation facility needs to be strengthened in a big way. Major areas of concern are; decline in real investment, thin spread of investment, lower recovery of costs, decline in water table, stage and inefficiencies in water use and non-involvement in users. The major areas of reforms needed in irrigation are: increasing public investment, raising profitability of ground water exploitation, rational pricing of irrigation water and electricity and involvement of users farmers in

the management of irrigation system (Rao2006). The excess rainwater received during the monsoon can be harvested for irrigation purpose by adopting water harvest techniques. The potential could be harvested and utilized for not only raising agricultural production, but also improving the environmental conditions by providing good vegetation coverage. The agriculture department should pay the appropriate attention to the farmers so that they take this micro irrigation programme seriously. National Rain fed Area Authority and watershed development. Assets being created and MGREGA can help in improving land and water management.

Role of Technology

It is not possible to have assured irrigation in many areas of the country to increase the production and productivity of these areas and to achieve the 4 per cent agriculture growth, it is necessary to develop such technology which is suitable to these conditions. The biotechnology revolution and genetic engineering opens up the possibilities of developing new varieties which can flourish with less dependent on water and chemical inputs.

References

1. Ahluwalia, Montek S. (2011), "Prospects and Policy Challenges in the Twelfth Plan," *Economic and Political Weekly*, 46(21), PP. 88-104.
2. Bhalla, G. S. and Chadha, G. K.(1983),*Green Revolution and Small Peasant: A Study of Income Distribution among Punjab cultivators*, Concept Publishing Company, New-Delhi.
3. Chand Ramesh (2005), "Whither India's food security? From food security food deprivation", *Economic and Political Weekly*, March12, pp. 1055-1062.
4. Chopra, R.N. (1987), *Green Revolution in India: A Study of Punjab, Haryana, U.P. and Bihar*, Intellectual Publishing house, New-Delhi.
5. Dalwai, Ashok (2012), *Dynamics of Agricultural Growth in India*, *Indian Journal of Agricultural Economics*, Vol. 67, No.1, PP. 27-45.
6. Dantwala, M.L. (1991), *Indian Agricultural Development Since Independence: A Collection of Essays*, Oxford and IBH Publishing Co. Pvt. Ltd.
7. Desai, Bhupat M (2002). "Policy Framework for Reorienting Agricultural Development," *Indian Journal of Agricultural Economics*, 57(1), PP. 1-22.
8. Desai, Bhupat; D'Souza, Errol; Mellor, John; Sharma, Vijay Paul and Tamboli, Prabhakar (2011). "Agricultural Policy Strategy, Instruments and Implementation: A Review and the Road Ahead," *Economic and Political Weekly*, 46 (53), PP. 42-50.
9. Dev, S. Mahendra (2008), *Inclusive Growth in India, Agriculture, Poverty and Human Development*, Oxford University Press, New Delhi
10. *Economic Survey (2006, 2008, 2010, 2011, 2012, 2013)*, National Informatics Centre, Ministry of Finance, Government of India, New Delhi.
11. Etielnnie, Gilbert (1998), *Food and Poverty: India's Half Won Battle*.

12. Government of India (2011), *Faster, Sustainable and More Inclusive Growth: An Approach to the 12th Five Year Plan (2012-2017)*, Planning Commission, New Delhi: Government of India.
13. Government of India (2011b), *Agricultural Statistics at a Glance 2011*, Directorate of Economics & Statistics, Department of Agriculture & Cooperation, Ministry of Agriculture, Govt. of India, New Delhi, October 2011.
14. Kalamkar, S.S (2012), "Food Security in India: Present status and future strategies" in M. H. Wani and S.H. Baba (ed.), *Rural Livelihood and food security*, New India publishing Agency, New Delhi, pp.63-82.
15. Kumar Produman, P.K. Joshi and Pratap S. BIRTHAL (2009), "Demand Projections for Food Grain in India", *Agricultural Economic Research Review*, Vol. 22, July _ Dec. pp. 237-243.
16. Kumar Sant, Maredia K. mywish and Chauhan, sonia (2013), *Research Priorities for Faster, Sustainable and Inclusive Growth in Indian Agriculture*, *Indian Journal of Agricultural Economics*, Vol.68, No.3, PP. 373-388.
17. Meenakshi, S.V. Brinda Vishwanathan (2003), "Calorie Deprivation in Rural India, 1983-1999-2000", *Economic and Political Weekly*, Jan25, pp. 369-75.
18. NCF (2006) *Serving Farmers and Saving Farmers*, Report V Excerpts, The National Commission on Farmers, Ministry of Agriculture, Government of India, and New Delhi (downloaded from www.krishakayoga.gov.in).
19. Patil, Pratibha *Devising(2010), Towards, Progress, Prosperity and Inclusive Growth*, yojana, Vol.54, PP. 5-24.
20. Patnaik, L (2003), "Food Stocks and Hunger: Causes of Agrarian Distress", *Social Scientist*, vol. 32, no. 7-8 July-August 2003.
21. Samanta, R.K. (1989), *Management in Agricultural and Rural Development*, UDH Publishing House 4078, Delhi.
22. Sharma, R.K.(1992), *Technical Change, Income Distribution and Rural Poverty: A Case Study of Haryana*, Shipra Publication, Delhi.
23. Sen, A. (1981), *Poverty and Famines: An Essay on Entitlement and Deprivation*, Oxford University Press.
24. Soni, R.N.(1992), *Leading Issues in Agricultural Economics*, Shoban Lal Nagin Chand & Co. Delhi.
25. Thorat, sukhadeo (2011), *Growth, Inequality and Poverty during 1983/2005: Implication for Inclusive policy*, *The Indian Economic Journal*, Vol. 59, No.1, PP. 3-39.
26. World Bank (1986), *World Development Report*, Washington DC.USA.
27. FAO (1983), *Report of the Eighth Session of the Committee on World Food Security*, Rome. [Http://www.groundreportindia.com](http://www.groundreportindia.com)