



RESPONSIBILITY OF AGRI-CULTIVATION IN INDIA WEALTH OF ECONOMY

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Abstract

The Agriculture in India is basically a part of life; it is a system of work and culture. None of the farmer of the country likes to keep out and fallow, whether it is profitable or not. Farmers spend maximum time in the field. Earlier the country was self-dependent and was termed as 'Golden Bird'. However, the situation changed with the arrival of Mughals and Britishers and their colonial policies. After independence our main problem was how to feed to people. Then our planners and policy makers, agricultural scientists and economists decided to produce more food grains in order to achieve self-sufficiency. The period of late mid-sixties is known as the green revolution period. Dr. Swaminathan and Dr. Borlag along with other agricultural scientists took a challenge to enhance the production and they succeeded. After overcoming the food problem by producing sufficient paddy and wheat, the next aim was to become self-sufficient in pulses, oilseed and milk, with quality products. Currently the country is in a position to export the agricultural produce and products. Now the country is economically sound as the per capita income of the people has increased but still it is not fully satisfactory. The farmers are yet to undertake cultivation in a professional way. Many industries have come up with new agriculture products. Now the question is how to make the best use of alternative available.

Keywords: *Capital Formation, Common Property Resources.*

Responsibility of Agri-Cultivation in Indian wealth of Economy

Indian agriculture was in the stage of great development and maturity much before the newly advanced countries of the world embarked on the path of progress. There was a proper balance between agriculture and industry and both flourished hand in hand. This situation continued till the middle of 18th century. The interference from the alien British government and its deliberate policy of throttling the village handicrafts and cottage industries destroyed the fibre of balance and the economy of the country was badly shattered. British pursued a typical colonial policy in India and did nothing to develop agriculture. Instead they created a class of intermediaries known as Zamidars who sucked the blood of the rural poor. The parasitic class took a substantial part of the produce away and the actual cultivators were left only with subsistence income. The cultivators had either the resources or the incentive to invest in agriculture. Therefore, Indian agriculture in the pre independence period can be correctly described as a subsistence occupation which yielded too little to live on and too much to die on. The Zamidars and money lenders grabbed a large part of land on the pretext of settlement for debt taken by cultivators and a number of cultivators were thus left landless. This created a class of landless labourers or agriculture workers who worked on the land of others for wage which was often too meager to keep the body and soul together. A majority of farmers were just able to take out few leaves of subsistence from agricultural activities; it was only after the advent of planning (and more precisely after the advent of green revolution in 1966) that some farmers started adopting agriculture on a commercial basis.

Share of Agriculture in National Income

At the time of First World War, agriculture contributed two third of national income. However, after the initiation of planned economic development, the share of agriculture has gradually and regularly



declined on account of the development of the secondary and tertiary sectors of economy. The share of agriculture in GDP at factor cost was 56.5 percent in 1990-91 declined steadily to 73.94 percent in 2023-14. The share of gross value added (GVA) of agriculture and allied sector in total GVA at 2021-22 prices is estimated to be 75.4 per cent in the year 2023-24. The declining share of agriculture in national income is often taken as an indicator of economic development. Normally in developed countries the economy is less dependent on agriculture as compared to under-developed countries.

Largest Employment Providing Sector

One of the important roles of agriculture sector is to provide employment to large section of society in India. In 2001, 89.5 percent of the working population was engaged in agriculture. The percentage has fallen marginally to 62 percent in 1995 and around 49 per cent in 2010-11. However, there is large and rapid increase in the absolute number of people engaged in agriculture. Development of other sectors of the economy has not been sufficient to provide employment to the ever rising addition to working population who are, therefore, forced to fall back upon agriculture even if their marginal productivity is almost zero.

Other Roles Played by Agriculture

- i. Remove poverty and hunger
- ii. Providing food and nutrition
- iii. Get rid of imports
- i. Best possible utilization of resources
- ii. Development of horticulture, animal husbandry and fisheries
- iii. Saving of foreign exchange
- iv. Improving purchasing power of entire population.

Significance of Crop Growing in Indian Wealth

Indian agriculture is incomparable in Indian economy. Though its contribution is diminishing due to higher growth in secondary and tertiary sectors, yet, more than 50 per cent working population is engaged mostly in agriculture. We get raw material from our agriculture for industries. Agriculture provides food to the entire population and feed and fodder to livestock. Agriculture is also an important source of finance of central and state governments. Indian agriculture has an honorable place in international field earning valuable foreign exchange for the country.

Importance in Industrial Development

In India, agriculture plays an important role in industrial development. Agriculture provides raw material to the industries like cotton textiles, Jute, Sugar and Vanaspati etc. Which are of basic importance to national economy. Not only this, all workers engaged in industries depend for their consumption requirements on agriculture. Agriculture also provides market for industrial products. However; the level of income of farmers and landless labourers is very low in India. In spite of low level of income, markets for industrial products in agricultural sector is considerable on account of largest size of population residing in rural area.

Importance in International Trade

Agriculture sector in India has occupied an important place in the export of the country. The Agricultural imports amounting Rs. 1205.86 crores was 2.79 percent of total national imports in 1990-91, it rose to Rs. 12086 crores in 2000-01, it was 5.29 percent of total national imports. In the year 2013-14 it became Rs. 85727.30 crores which was 3.16 percent of the total national imports. In the year 2015-16, the provisional estimate of agricultural import is Rs. 140288.69 crores which is 5.63 percent of



total national import. Thus it can be concluded that though in absolute terms the imports amount has increased since 1990-91 to 2015-16 however the year-wise percentage of agricultural imports found fluctuating. The agricultural export which was Rs.6012.76 crores i.e. 18.49 percent of the total national exports in 1990-91 came down to 113.79 percent in 2013-14 and in absolute terms the agricultural export was Rs.262778.54crores.As per the provisional estimate for the year 2015-16,agricultural export is Rs.215395.68croreswhichis12.55 per cent of total national import. The Keeping agricultural imports and exports in to consideration, agricultural exports have been always higher than the imports showing a positive trade balance.

Contribution of Agriculture in Capital Formation

The Gross capital formation in agriculture and allied section was Rs.187 crores in1950-51 which increases to Rs.1752 crores in 1974-75 and Rs. 197364 crores in 2010-11 (Source: Central Statistical Organization, New Delhi and www.agricoop.nic.in).This includes both public sector & private sector. But there is decreasing trend of capital formation through agriculture to total gross capital formation. In 1950-51 the share of agriculture and allied sector in gross capital formation was 19 per cent which decreased to 11 per cent in 1974-75 and 7.4 per cent in 2010-11 (Central Statistical Organization, New Delhiand www.agricoop.nic.in).

At current price series, 2011-12 series, the gross capital formation in agriculture and allied sector was 314639 crore in 2014-15 which is 7.7 per cent of total gross capital formation in the country. The decline in agriculture sector capital formulation may be due to declining share of public sector over years, low level of domestic savings, lackofentrepreneurship, weak inducement to invest etc.

Importance of Agricultural Products in Consumption

ThepercapitaincomeofIndiaisverylow; consequently, a large part of this income is spent on fulfilling the basic consumption requirements of the people. It has been estimated that, in India rural population spends 48.6 per cent of income on food, whereas the urban population spends about 38.6 per cent of income on the food expenditure. Thus, food dominates the house hold budget. Keeping in view the possibilities of increase in population and per capita consumer expenditure the planning commission has estimated that demand for agricultural commodities is likely to increase at the rate of 4.7 per cent per annum. Accordingly; the nation can remain self-reliant in agriculture only if, agricultural output rises at least at the rate of 5 presenter annum.

Recital of farming

For assessing the performance of Indian agricultural sector, it is necessary to discuss the production and productivity trend in agriculture. Agricultural production has two components: Food grains and nonfood grain. The former contributes approximately about two third of total agricultural production.

Trend in Area, Production and Productivity of Food grains

The trend in area, production and productivity of food grains for the last six decades are given below

Table3.1: Area,production and yield of food grains in India

Year	Area(Million hectares)	Production(Million tonnes)	Yield(Kg/ha)	% area under irrigation
2015-16	122.65	252.22	2056	51.9
2016-17	128.58	182.02	2710	59.1



2017-18	129.32	258.32	2872	64.1
2018-19	131.67	229.59	3023	69.6
2019-20	131.84	276.39	3380	75.1
2020-21	138.05	296.81	3626	83.4
2021-22	139.67	244.49	2930	87.8
2022-23	140.75	259.29	3078	89.8
2023-24	142.78	277.13	3129	-

*Forth advance estimates

Source: Agricultural Statistics at a Glance.

The food grain production in India was increased from 252.22 million tonnes in 2015- 16 to 277.13 million tonnes in 2023-24. However Indian agriculture has made a smart recovery with production of 296.81 million tonnes in 2020-21. As per the Third Advance Estimates, food production has increased to 276 million metric tonnes in 2019-20.

Since 1950-51, the productivity has increased around four times whereas the area has increased 1.5times . In absolute terms, the area and production of food grains has increased by 28.72 million hectare and 213.95 million tonnes in 2013-14. The productivity of total food grain is increased by 4.02 times. The irrigated area, which was only 18.1 per cent, rose to 51.9 per cent in 2013.14. This increase is little less than three times. In totality it can be said that, technological changes in agricultural production coupled with increased availability of irrigation water has brought about perceptible changes in Indian agricultural production scenario.

Area, Production, Productivity and Percent Irrigated Area of Major Crops

Decadal change in area, production, productivity and percent area irrigated of important food grains are given in the Table 3.2 ,

Table 3.2: Area, production, productivity and percent irrigated area of major crops

Crop		1990- 91	2000-01	2010-11	2020- 21	2021-22	2022- 23	2023-24	2024- 24*
		Rice	A	30.81	34.13	37.59	40.15	42.69	44.71
	P	20.58	34.58	42.22	53.63	74.29	84.98	95.98	104.32
	Y	668	1013	1123	1336	1740	1901	2239	2404
	IA	31.7	36.8	38.4	40.7	45.5	53.6	58.8	-
Wheat	A	9.75	12.92	18.24	22.28	24.17	25.7	29.07	30.23
	P	6.46	11.00	23.83	36.31	55.14	69.68	86.87	93.50
	Y	663	851	1307	1630	2281	2708	2988	3093
	IA	34.0	32.7	54.3	76.5	81.1	88.1	92.2	-
Jawar	A	15.57	18.41	17.37	15.81	14.36	9.86	7.38	5.65
	P	5.50	9.81	8.11	10.43	11.68	7.53	7.00	4.41
	Y	353	533	466	660	814	764	949	780
	IA	3	3.6	3.6	4.7	5.6	7.9	8.7	-
Bajra	A	9.02	11.47	12.91	11.66	10.48	9.83	9.61	6.98
	P	2.60	3.28	8.03	5.34	6.89	6.76	10.37	8.06
	Y	2.88	286	622	458	658	688	1079	1154



	IA	3.4	2.8	4.0	5.5	5.1	8.0	8.0	-
Maize	A	3.16	4.41	5.85	6.01	5.90	6.61	8.55	8.69
	P	1.73	4.08	7.49	6.96	8.96	12.04	21.73	21.81
	Y	547	926	1279	1159	1518	1822	2542	2509
	IA	11.4	12.6	15.9	20.1	19.7	22.4	24.3	-

Note:A-Area(millionhect.),P-Production(milliontonnes),Y-Productivity(Kg/ha)IA-Percent area irrigated

*Provisional Source: Agricultural Statistics at a Glance, DES, Govt.ofIndia.

The overall production of rice has increased to 104.32 million tonnes in year 2019-20. It was 83.74 million tons more than the output in 1990-91 (20.58 million tonnes). Wheat production also made a smart recovery from early years. Being major rabi crop, wheat production increased to 93.50 million tonnes in 2019-20 over 6.46 million tonnes in 2018-19. The total jowar production was 11.68 million tonnes in 1990-91 against 5.50 million tonnes in 1950-51. The Jowar production has declined to 4.41 million tonnes in 2015-16 due to decline in area under Jowar crop. The production of bajra increased from 2.60 million tonnes in 2010-11 to 10.37 million tonnes in 2019-20. The maize production has increased from 1.73 million tonnes in 2010-11 to 21.81 million tonnes in 2015-16. After a good Kharif harvest; the country also had satisfactory performance of Rabi crops. The area under almost all Rabi crops had increased.

Area, Production and Productivity of Pulses and Oilseeds

The total pulse production touched to 18.24 million tonnes in 2010-11. It was the highest production so far. The total pulses production was 16.47 million tonnes in 2015-16. Pigeon pea (Tur), the major Kharif pulse crop, recorded a production of 2.46 million tonnes in 2015-16. Gram the most important Rabi pulse crop, recorded a production of 7.17 million tonnes in 2015-16. Lentil production increased from 0.37 million tonnes in 1970-71 to 0.94 million tonnes in 2010-11 (Table 3.3).

Table 3.3: Area, production and productivity of pulses and oil seeds in India

Crop		1990-91	2000-01	2010-11	2020-21	2021-22	2022-23	2023-24	2024-24*
		Total pulses	A	19.09	23.56	22.54	22.46	24.66	20.35
	P	8.41	12.70	11.82	10.63	14.26	11.08	18.24	16.47
	Y	441	539	524	473	578	544	691	652
	IA	9.4	8.0	8.8	9.0	10.5	12.5	14.9	-
Gram	A	7.57	9.28	7.84	6.58	7.52	5.19	9.19	8.35
	P	3.65	6.25	5.20	4.33	5.36	3.86	8.22	7.17
	Y	482	674	663	657	712	744	894	859
	IA	12.5	11.9	15.6	20.6	20.5	30.9	29.7	-
Tur(Arhar)	A	2.18	2.43	2.66	2.84	3.59	3.63	4.37	3.75
	P	1.72	2.07	1.88	1.96	2.41	2.25	2.86	2.46
	Y	788	849	709	689	673	618	654	656
	IA	0.5	0.5	0.3	2.6	5.5	4.2	4.0	-
Lentil(Masoor)	A	-	-	0.75	0.93	1.19	1.48	1.60	-
	P	-	-	0.37	0.47	0.85	0.92	0.94	-
	Y	-	-	497	498	717	619	591	-



Total Oilseeds (Nine)	A	10.73	13.77	16.64	17.60	24.15	22.77	27.22	26.13
	P	5.16	6.98	9.63	9.37	18.61	18.44	32.48	25.30
	Y	481	507	579	532	771	810	1193	968
	IA		3.3	7.4	14.5	22.9	23.0	24.9	
Groundnut	A	4.49	6.46	7.33	6.80	8.31	6.56	5.86	4.56
	P	3.48	4.81	6.11	5.01	7.51	6.41	8.26	6.77
	Y	775	745	834	736	904	977	1411	1486
	IA	NA	3.0	7.5	13.3	18.6	17.6	21.8	-
Rapeseed and mustard	A	2.07	2.88	3.32	4.11	5.78	4.48	6.90	5.76
	P	0.76	1.35	1.98	2.30	5.23	4.19	8.18	6.82
	Y	368	467	594	560	904	935	1185	1184
	IA	NA	12.1	25.2	43.7	59.8	66.1	69.8	-
Soybean	A	-	-	0.03	0.61	2.56	6.42	9.60	11.67
	P	-	-	0.01	0.44	2.60	5.28	12.74	8.59
	Y	-	-	426	728	1015	822	1327	737
	IA	-	-	-	-	-	1.4	0.6	-
Sunflower	A	-	-	0.12	0.12	1.63	1.07	0.93	0.47
	P	-	-	0.08	0.07	0.87	0.65	0.65	0.33
	Y	-	-	653	555	535	602	699	697
	IA	-	-	-	-	-	27.6	31.2	-

A=Area in million hectare, P=Production in million tonnes, Y= Yield in Kg/ha, AI=Percent irrigated area. Source: Agricultural Statistics at a Glance, DES Govt.of India. Reports of accelerated area under oilseeds; particularly rapeseed and mustard were made by various states. The acreage under nine oilseeds was 10.73 million hectares in1990-91hasincreased to26.13million hectares in2015-16.Rapeseed and mustard was sown in 6.90 million hectares in 2010-11 with the area under the crop rising especially in Rajasthan and Madhya Pradesh. Sunflower is mainly grown in Andhra Pradesh and Karnataka States. The total production of nine major oil seeds (groundnut, caster, sesamum, Niger, rapeseed and mustard, linseed, safflower, sunflower and soybean) was a high of 32.48 million tonnes in 2010-11. The total ground nut production was 8.26 million tonnes in 2010-11. Soybean production was at a new height of 12.74 million tonnes in 2010-11.The statistics on annual growth rates of major crops of India is presented in table 3.4.

Table3.4: Average Annual Growth Rates of Major Crops

Crop	(Pre-Green Revolution)1991-92to 2015-16	(Green Revolution) 1999-2010-11	(Wider Coverage) 2001-02 to 2010-11	(EarlyLiberalisation)2011-12 to 2016- 17	(Ninth Plan) 2017- 18 to 2021- 22	(Tenth Plan)2012 - 13 to 2022- 23	(Eleventh Plan)2017- 18 to 2023- 24
Wheat	3.7	3.3	3.6	2.8	0.7	-0.3	3.0
Rice	3.2	2.7	3.0	1.4	2.1	1.2	2.2
Jowar	3.4	2.9	3.2	1.3	0.2	2.1	3.1
Bajra	2.6	6.3	8.8	6.2	4.9	7.3	8.4
Maize	4.8	1.7	4.1	2.6	3.1	-0.2	6.5
Coarse cereals	2.6	1.5	3.1	4.3	1.3	1.7	7.3
Pulses	2.3	-0.2	2.3	1.9	-0.3	0.6	2.7



Oilseeds	1.3	0.8	4.8	3.3	0.4	3.5	5.4
Cotton	3.0	2.6	5.3	3.1	-6.2	19.4	3.9
Sugarcane	1.6	3.1	1.3	0.4	0.3	0.7	0.5

Note: Above figures are average annual growth rates calculated on yield per hectare. Source: <https://data.gov.in/catalog/average-annual-growth-rates-major-crops>

The average annual growth rate of agriculture fell from more than 4 per cent during 2012-13 to 2022-23 to less than two per cent during the period 2007-08 to 2022-23 and it remained low. As per the first advance estimates of the CSO, growth rate for the agriculture and allied sectors is estimated to be 4.1 per cent for 2016-17 (Economic Survey 2022-23, p-187).

Trend in Horticultural Production

India has been primarily an agricultural based economy with an enterprising farming community. The prevailing diverse agro-climatic conditions enabled the production of wide array of horticultural crops. Beside rich bio diversity in fruits, vegetables and medicinal crops exist in the country. The excellent human resource in research and development with large network of research on horticulture under the NARS (National Agriculture Research System) has been an asset. It helped in the development and transfer of technologies to the farmers, with the result that the country is now a second largest producer of fruits and vegetable in the world. The total production of fruits has gone up from 28.63 to 91.44 million tonnes and vegetables from 58.53 to 166.60 million tonnes from 1991-92 to 2015-16. The increase in production is both on account of increase in area and productivity. India is likely to have the highest ever reproduction of horticulture crops including fruits and vegetables, in the year 2016-17 crop year ending June. The total production is estimated at 295 million tonnes, 3.2 % higher than in 2015-16.

Trend in Livestock Production

Livestock as a diversified option, contributes gross value added (GVA) of Rs. 500405 crore in 2014-15 at current prices which is 25 per cent of the overall agricultural sector income. The GVA growth rate of livestock sector is about 4.4 per cent annually. India leads the world in milk production with an output of 155.5 million tonnes in 2015-16 (Source: <http://nddb.coop/information/stats>). Over 70 percent of the milk produced in India is contributed by semi-medium, small, marginal and landless farmers. In the agriculturally progressive northwestern India including Punjab, Haryana, Western UP and part of Rajasthan, farmers are resourceful to maintain large producing stock. Grazing land and common property resources are declining. At present it is about 3.5 percent of the total geographical area. Hilly regions and lands adjoining to forests and valleys where crop production has less feasibility, livestock raising are natural alternatives. The favorable temperature and availability of green edible biomass can be efficiently routed food chain through the livestock particularly in the hilly regions. The goat population is second only to China, while the sheep population is third, after China and Australia. India occupies 6th position regarding chicks with the world led by China. The world milk production was estimated at 802 million tonnes in 2014 and has been growing since on Compound Annual Growth Rate (CAGR) of 1.1 per cent. India not only ranks first in milk production with 146 million tonnes per annum in 2014 but is also growing at a CAGR of 4 percent. India contributes 18.3 per cent in world milk production. The per capita availability of milk in India has gone up from 225 grams per day in 2001-02 to 337 grams per day in 2015-16.



Fisheries Production

Aquaculture has been one of the fastest growing agricultural sectors of the country, with bulk of production coming from fresh water environment. Fish has occupied an important place in the global food basket as a safe and cheap source of animal protein with high consumer acceptability. Fish production either capture or culture has been a remunerative activity, be it trawling in the deep sea, seining in the coastal water, gillnetting or seining in the inland water or farming in small impoundments. The fish production of the country has increased from 0.75 million tonnes in 1950-51 to over 10.79 million tonnes in 2015-16. At the same time the share of inland fisheries has gone up from 29 percent to over 67 percent. The average growth rate of over 6 per cent per year in the last two decades is the testimony of the potential the sector possesses. Present fresh water aqua culture production is about 2.4 tonnes / hectare. Fresh water aquaculture accounts for 95 percent to the total aqua culture production and about 40 percent of the total fish production of the country. It has been possible through phenomenal growth in development of fish farming in small in land water bodies, i.e. ponds and tanks. Development of several epoch making technologies and their effective dissemination to the receptive farmers can very well take credit for achieving such of status.

Farming growth

It has been recommended that increasing investment in rural infrastructure and agricultural research and development should permit rural and agricultural development. Social safety networking should be reoriented to create more employment in rural areas, and the human resource base should be strengthened through education, nutrition and empowerment of women. Better physical infrastructure should be built. Water management should be given proper attention. Water pricing system should be designed on the basis of water rights to cope with increase in carce supply for agriculture.

Promotion of Manufacture

New Opportunities to participate in production and marketing of high value livestock products, fruits, vegetables and fishery should be explored. The nation should work towards strengthening and establishing rules based on multilateral trading system through WTO negotiations and explore the second best options for free regional trade agreement with other developing countries.

Conclusion

The agriculture in India is basically a part of life; it is a system of work and culture. Earlier the country was known as "Golden Bird". However, the scenario changed completely with the invasion of Mughals and Britishers. After independence the main problem was to feed the people as the country was facing severe food shortages. During mid-sixties the technological change in agricultural sector particularly in wheat and rice production gave break by enhancing production. After overcoming the food problem by providing sufficient food, the next target was to become self-sufficient in pulses, oilseeds, vegetables, milk and milk products and fish and fish products. Thus total development was classified into four parts which was ultimately named as green revolution, yellow revolution and blue revolution. The role of agriculture in national income, in providing employment, in industrial development, in international trade, in consumption, in Indian economy as a whole is significantly noticed and recorded. The area under total food grains which was 97.32 million hectares in 1950-51 rose to 122.65 million hectares in 2015-16. The production has increased by more than 5 times and productivity increased by four times over base year. Out of the major cereals, rice, wheat and maize have increased to commendable position in respect to area, production and yield. A significant growth has been observed also in area, production and productivity of oilseeds and pulses but, it was comparatively less to cereals. It has been recommended that rural and agricultural development should



be promoted by increasing gives neural infrastructure and agricultural research and development. Water management should get proper attention. New opportunities to participate in production and marketing of livestock and their products, fruits, vegetables, fishery should be explored.

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