

## Changes in Area Under Agricultural Sector of Bihar : A Zonal Aggregate View

TARA SHANKAR<sup>1</sup>, K. M. SINGH<sup>2</sup>, S. S. SINGH<sup>3</sup> AND ANAND KUMAR<sup>4</sup>

*ICAR Research Complex for Eastern Region, ICAR Patna  
 Patna, India*

<sup>1</sup> NAIP Component-3, <sup>2</sup> Division of Socio-Economic Extension & Training

<sup>3</sup> Division of Crop Research, <sup>4</sup> DFID Project

### Abstract

Study aims to analyze the changes on status in area under agricultural sector in Bihar. There are four agro-climatic zones and almost all the zones of Bihar, agricultural area consistently declined from first period (1970-71 to 1974-75) to the present situation (2000-01 to 2004-05) because this area shifts into the non-agricultural uses. At present, in Zone-IIIa of the state barely 57.39% of land under agricultural sector whereas zone-IIIb has about 69% of the respective geographical area. Zone-II of the state has much better in comparison of other zones of Bihar comprises 72.11% of the area while over 70.87% of the area under this sector in zone-I. These areas declined from 60.32, 80.14, 82.89 and 80.73% in first period in zone-IIIa, zone-IIIb, zone-II, and zone-I respectively. If tenancy would be duly recognized and legalized, it will instill a sense of security of land ownership and promote full utilization of agricultural lands. Finally, keeping in view the need for speedy reforms and large scale interventions in agriculture, the subject to be brought under the concurrent list of Indian constitution.

**Key words :** Physical features, Agro-climatic zones, Agricultural sector, Divided Bihar.

The year 1967-68 marked the beginning of the green revolution leading to quantum jumps in the productivity and production of food-grains, particularly in wheat and rice. The last 15 years have witnessed a fatigue in the green revolution with the growth rate in food grain production falling below population growth. Thus human members are increasing faster than our capacity to make the goal of Food for All a reality. At the same time, consumption is not going up due to inadequate purchasing power at the household level. A famine of jobs/livelihoods as a result of poor growth of opportunities for employment in the rural non-farm and off-farm sectors in leading to a famine of food at the household level. Since land is a shrinking resources for agriculture, the pathways for achieving these goals has to be higher productivity per units of arable land and irrigation water, thus it needs to be passed on to the succeeding generation without improvising it. The average farm size is going down and nearly 80% of the farm families belong to the marginal and small farmer categories. The slow agricultural growth has led to a decline in the overall growth of the economy. The agriculture sector has been hit by the economic boom, WHO regulations and falling per capita income

in rural areas. Thus, there is an urgent need to look afresh at the agriculture sector. Here, the investigation is confined only to Bihar, because Bihar after division has emerged as the most potential frontline agricultural state, but with least or marginal production spectrum in major food crops in the map of India. Farming is directly linked with the area under agricultural sector and this area declined from 77.23 to 68.80 total geographical area during study period (1970 to 2005) in Bihar. Hence, completing the unfinished agenda in land reforms, initiate comprehensive assets and agrarian reforms in rural areas of Bihar may be plays a vital role in economic development of the state. The present study was aimed to analyzed issues on the changes in area under agriculture sector, causes and the remedies of unsatisfactory progress in agriculture.

### *Physical Features of Bihar*

Bihar lies between 24°15' to 27°31' N latitudes and 83°20' to 88° 19' E longitudes with an average length of 483 (E-W) and width of 385 km (N-S). The state has subtropical sub humid monsoonal climate with moderate cold winter followed by hot dry and

**Table 1.** Important features of different agro-climatic zones of Bihar. Source : NARP report, R.A.U., Bihar.

Name of the zone	Geographical area (in 000 ha)	Percentage area	Districts
Zone-I North-West Alluvial plains	3449.09	36.85	E & W Champaran, Saran, Siwan, Gopalganj, Siwar, Muzaffarpur, Vaishali, Darbhanga, Samastipur, Begusarai, Madhubani, Sitamarahi.
Zone-II North-East Alluvial plains	1798.11	19.25	Purnea, Katihar, Khagaria, Saharsa, Supaul, Araria, Madhepura, Kishanganj.
Zone-IIIa South-East Alluvial plains	1194.51	12.76	Munger, Shekhpura, Jumui, Banka, Lakhisarai, Bhagalpur.
Zone-IIIb South-West Alluvial plains	2917.84	31.17	Patna, Gaya, Jahanabad, Nawada, Nalanda, Rohtas, Bhojpur, Buxar
Bihar	9359.56	100.00	Aurangabad, Bhabhua, Arwal. Total 38 Districts

humid summer. It is bounded by Nepal from North, Jharkhand from South, Uttar Pradesh from West and West Bengal and Bangladesh from East. At present there are 38 districts in divided Bihar and these districts has been grouped in for distincts agro-climatic zones which is also called as a NARP zones. Important features of different Agro-climatic zones are given in Table 1.

### Methods

The study is based on structural changes in area under agricultural sector over the period of 35 in all the zones and the Bihar as a whole. On account of technological revolution of the late sixties causing major changes in agricultural land use in the districts and some changes in the methodology of reporting during the late fifties, the period from 1970-71 to 2001-05 is considered more appropriate for the present analysis. For the purpose of gaining meaningful insights into changes in area under agricultural sector, the study period was divided into six sub-periods, namely Period-I (1970-1975), Period-II (1975-80), Period-III (1980-85), Period-IV (1985-90), Period-V (1990-1995), Period-VI (1995-2000) and Period-VII (2000-05) were considered as a present situation.

Secondary data were taken up from the various publications of Bihar through figures (Directorate of Statistics and Evaluation, Government of Bihar) from 1970 to 2005 and these information were compiled on

zoned basis (1). Five years (quinquennial) average proportionate area under agricultural sector to the respective geographical area has been computed for studying the trend of this sector in Bihar.

### Results and Discussion

Net area sown, current fallows, other fallows and culturable waste land comes under agricultural sector (2) and this area was continuously declined from the first period (1970-71 to 1974-75) to the present situation (2000-01 to 2004-05) in the state (Fig. 1), because most of these lands are either litigated land and associated with some religious relief or presence of absentee land lordism and thus, agricultural lands shift into the area under non-agricultural uses.

Current fallows are those lands which are not utilized in current year only whereas other fallows include all lands which were taken up for cultivation but are temporarily out of cultivation for a period not less than one year and not more than five years. The reason for keeping such land fallow may be (a) poverty of the cultivators (b) inadequate supply of water (c) mamarious climate and weather (d) un-remunerative nature of farming. Culturable waste land is that land which is at present not utilized for any purposes, i.e. lying waste and that can be brought under cultivation for growing crops. These lands are important contributors for increasing or decreasing of an area under agriculture sector (3).



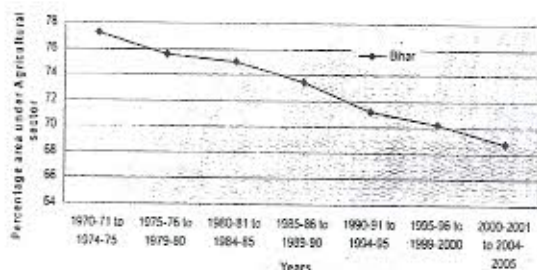


Figure 1. Declining trend of agricultural sector in various time-periods.

When we analyzed on zoned basis in the state, the zone-II had comparatively larger proportion of area under agriculture sector (82.89% of respective geographical area) in first period which was declined up to 72.11% at the present situation (4). Similar pattern was observed in zone-I which had second larger proportion of land under this sector (Table 2).

The larger proportion of land under this sector in these two zones was mainly due to comparatively less area under ecological sector (area under forest, permanent pastures and other grazing lands, miscellaneous trees and other groves and barren and unculturable land) than zone-IIIa and zone-IIIb. Zone-IIIa had only 60.32% area under agricultural sector in first period and observed declining trend up to the present situation except in fourth period (1985-86 to 1989-90).

This was probably due to these lands are upland of the marginal fertility characterized by thin soil, rapid run-off, limited soil moisture & possibility of production only by fallowing. We should remember that the zone-II and zone-IIIa of the state is considered as the Play ground of rivers because all the important

rivers of central north Bihar unite here to form Ghughri or Lower Kosi. Thus, the area is the collecting bowl for all major rivers of North Bihar. The area suffers mostly from devastating floods so that considerably percentage of the total area remains unsown. Hence, special efforts need to be made by the Government for the protection & proper maintenance of the system. Table 2 Shows that the area under agricultural sector almost in declining trend in all the agro-climatic zones of Bihar which warrants immediate action to increase agricultural productivity for food security in Bihar.

### Policy Options

We should not remain silent spectators to a steady agricultural decay in Bihar. Both human security & state sovereignty are at stake. Overall economic growth rates have little meaning if we do not look after the economic health and survival of our Eighty five percent of our population. To enhance in area under agriculture sector, few things should be considered on priority basis: There is a wide scope to bring down the existing cultivable waste and use it for increasing the area under crops with suitable technologies. A generalized approach may not help achieving the full utilization of cultivable and fallow land. Thus, there is a need for disaggregated regional studies into the characteristics and determinants of such land, which may serve as the basis for the formulation of long run region specific strategies for the purpose. Swaminathan (5) reported that the state government should immediate planned a policy for farmers, which encourages the farmers to improve income from farming system approach, using tradi-

Table 2. Area under agricultural sector in different agro-climatic zones of Bihar. Figures show percentage area (agricultural sector) of respective geographical area. Source: Directorate of Statistics & Evaluation, Govt. of Bihar (2):

Zones/ xyts	1970-71 to 1974-75	1975-76 to 1979-80	1980-81 to 1984-85	1985-86 to 1989-90	1990-91 to 1994-95	1995-96 to 1999-2000	2000-01 to 2004-05 Present situation
	Period-I	Period-II	Period-III	Period-IV	Period-V	Period-VI	
Zone-I	80.73	79.32	77.71	75.81	73.31	72.06	70.87
Zone-II	82.89	81.33	82.37	78.41	74.75	72.75	72.11
Zone-IIIa	60.32	59.66	60.14	62.25	60.11	59.63	57.39
Zone-IIIb	80.14	79.11	73.25	72.15	71.02	70.84	69.00
Bihar	77.23	75.57	74.97	73.44	71.19	70.22	68.80

tional and modern methods and which helps in encouraging the village youth to stay in farming. For the purpose, legalized tenancy may help in finding a landless or marginal entrepreneur to make full use of agricultural land; the smaller holdings are not sustainable, so state government should bring a legislation where a land holding below one acre cannot be further divided and ban on conversion of productive farm land to any other uses. Promotion of farming by co-operative village management. Clearly outlined research priorities and increased accountability of researchers so that cutting edge technologies for improving productivity, suited to the diverse agro-climatic regions of Bihar, could be developed. Bridging the gap in lab and land results by delivering the technologies, best practises, success models etc. through the launch of 24 hours one regional news channel. A farm Knowledge Mission outlines the priorities for developing reservoir of ideas, innovations, traditional practises and the knowledge developed by farmers through the ages. The mission to also focus on skill development for farm sectors. A State Water Management Policy towards conserving water resources for renewable use in agriculture under drought condition is known. The policy must focus on efficient use of water resources through adoption of micro-

irrigation system on a large scale. Promoting public-private participation in developing technologies, providing extension services, marketing infrastructure and information delivery system to bring about a revolution in farm management and value added services. Leveraging upon the power of IT in agriculture on a big scale to deliver technologies, market information and facilitate farmers. Finally, effective linkage of farm industry for assured marketing, reduction in post harvest losses and significant addition of value in farm produce can only bring the revolution in farm and the income of farmers.

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