

## **Public expenditure on agricultural inputs and farm support services in India – An overview**

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### **ABSTRACT**

The objective of this study is to make an in-depth assessment of the public expenditure on agricultural inputs and support services at both state and national level. Panel data on public agricultural expenditures have been compiled from the Finance accounts of different states and Combined Finance and Revenue accounts, Government of India. A comparative regional analysis revealed that the western and southern regions focused majorly on irrigation sector, whereas the eastern region has given more focus towards rural development. Out of total expenditure on agricultural inputs and services, crop husbandry has gained significance with a higher expenditure percentage share over the period. The intensity of public expenditure on agricultural inputs and support services has shown more than three-fold increase within a span of eleven years, which will indirectly help to increase rural incomes and narrow down the rural-urban disparity. The study observed imbalances in inter-state allocation of public expenditure in agriculture, which needs to be considered in the future to achieve the goal of inclusive growth in Indian agriculture.

**Key words:** Public expenditure, Panel data, Regional analysis, Expenditure intensity, and Agricultural inputs and support services

For many developing countries, agriculture has been the largest sector in terms of its share in the gross domestic product (GDP) and employment. More importantly, the majority of the world's poor live in rural areas and depends upon agriculture for their livelihood. Therefore, agriculture is critical both for poverty reduction and economic development (Singh *et al.*, 2015). Studies revealed that in developing countries expenditure on agriculture is one of the most important government instruments for encouraging economic growth and alleviating poverty in rural areas (Fan and Rao, 2003; FAO, 2012). The Indian government has initiated umpteen number of agriculture development

programmes for the overall development of rural areas. The main objective of these development programmes is to eradicate poverty, which is multi-dimensional.

To put the agricultural sector on a higher growth trajectory, the government's strategies and policies must be backed by a range of technological and institutional innovations that demands public investments across a broad spectrum of agricultural production systems. Government expenditure targeted to infrastructure and farm inputs and support services has been an important element of agricultural policy in India. The experiences of the green revolution have also confirmed that a strategy of public support for agriculture has paid rich dividends. Further, while the role of

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investments in encouraging economic growth and poverty reduction is being widely recognized (Fan *et al.*, 1999), it is important to study the existing allocation pattern of public investments and set right priorities of investments with improved efficiency to gear up the agricultural economy. It is often argued that agriculture did not receive due attention it deserved in terms of allocation of public resources in the 1980s (Rath, 1989; Shetty, 1990; Kumar, 1992; Alagh, 1997; Gulati and Bathla, 2001). Consequently, agricultural growth has also tended to slacken during the 1990s. The pertinent question is whether there is decline in the public investment during the recent period? The above question can be addressed by an in-depth state-wise analysis of the public investment in agriculture. The expenditure head under agricultural inputs and support services includes various centrally sponsored, central sector and additional central schemes related to agriculture and allied sector, which intend to serve multiple purposes like increase in rural incomes, transforming the countryside, narrowing rural-urban disparity through agricultural modernization, and public services expansion in rural areas (Singh *et al.*, 2015). With this background, an attempt has been made in this study to examine the pattern of public expenditure in agriculture and agricultural inputs and support services in particular.

#### MATERIALS AND METHODS

State-wise time series data on central and state agricultural expenditures in different sub-schemes from the period 2006-07 to 2016-17 have been compiled from the Finance accounts of different states and Combined Finance and Revenue accounts, Government of India. The time-series data on various heads of state plan agricultural expenditure includes actual revenue and capital expenditures incurred on irrigation (major and medium, minor and command area development), rural infrastructure (rural roads, rural electricity, agricultural finance, cooperation and marketing), agricultural inputs and support services, rural development (rural employment programmes, land reforms, others), and agricultural research and education and extension and training. The expenditure made

under the head capital account adds directly to the productive capacity of the economy, and hence termed as investments as against the revenue account which includes salaries, overheads and operational cost for delivering public goods (Singh, 2011).

The real expenditure and investment series was prepared by deflating at 2011-12 prices by implicit price index of agricultural capital formation. The state-wise time series data were aggregated into 6 regions *i.e.* Northern region (Haryana, Himachal Pradesh, Jammu and Kashmir, Punjab, Rajasthan, Uttar Pradesh and Uttarakhand), Southern region (Erstwhile Andhra Pradesh, Karnataka, Kerala, and Tamil Nadu), Eastern region (Bihar, Jharkhand, Odisha, and West Bengal), Western region (Gujarat and Maharashtra), Central region (Chhattisgarh and Madhya Pradesh) and North-Eastern region (Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim, and Tripura).

Comparison of state-wise public agricultural expenditure in actual terms will not indicate the clear picture, as it is a known fact that larger states will get higher fund allocation by the government as compared to smaller states. Hence in the present study per hectare public agricultural expenditure was calculated by taking the area under cultivation (*i.e.* gross cropped area) into consideration. Agricultural inputs and support services intensity was calculated by taking the expenditure on agricultural inputs and services as the percentage of agricultural gross domestic product (AgGDP).

#### RESULTS AND DISCUSSION

Analysis of region-wise cumulative agricultural expenditure in India during the period 2006-07 to 2016-17 revealed that share of public expenditure under irrigation sector was high in the western region (42%) followed by the southern region (37%), whereas the eastern region has major share in public expenditure on rural development (46%) followed by the northern and central regions of the country (Figure 1). The percentage of public expenditure in Agricultural inputs and services out of total public agricultural

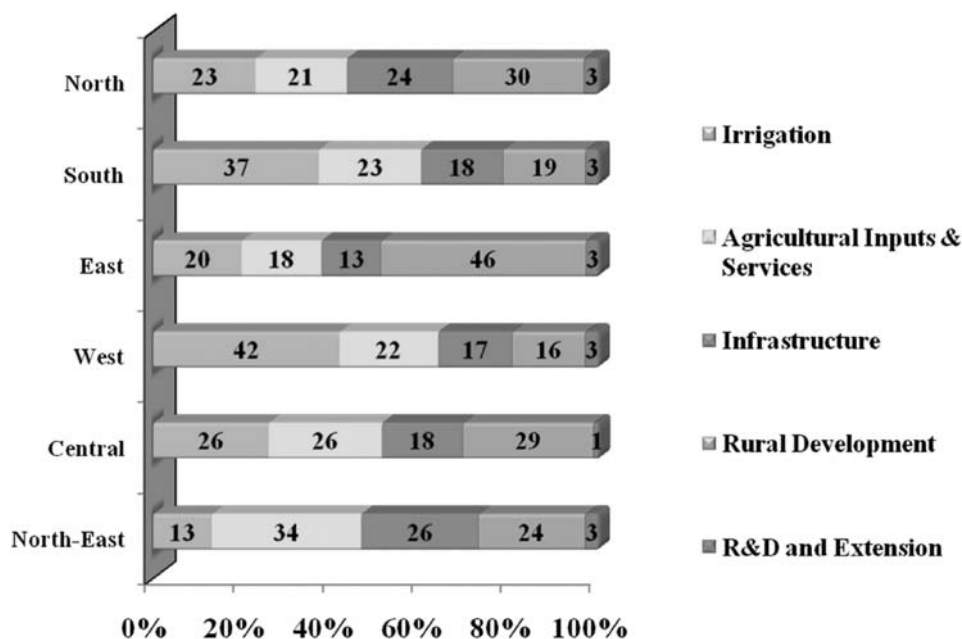


Fig. 1. Region-wise cumulative agricultural expenditure in India (percentage): 2006-07 to 2016-17

expenditure ranges from 18 percent (Eastern region) to 34 percent (North-Eastern region) in India. It can be observed that relatively better equitable distribution of public fund (except R&D and Extension) can be seen in the northern and central regions compared to other regions of the country, whereas higher disparity can be observed in the eastern region with nearly half of the total public fund being spent on rural development alone; it was followed by western and southern regions. Results clearly revealed that all the regions except the central region (1%) were spending just around 3 percent of its total public agricultural expenditure on Agricultural Research and Development (R&D) and extension during the same period, which needs to be considered for better allocation by the policy makers in future.

Figure 2 shows the state wise per hectare agricultural expenditure in India during the period 2006-07 to 2016-17. The study found that all the north eastern states except Assam have higher per hectare public expenditure in agriculture. These are followed by other states like erstwhile Jammu and Kashmir, Himachal Pradesh, Uttarakhand, Jharkhand, Odisha, Kerala and Tamil Nadu. States such as Rajasthan, Maharashtra, Punjab, Uttar Pradesh, Madhya

Pradesh and West Bengal received very low per hectare public agricultural expenditure during the same period.

Mapping was done to study the pattern of public expenditure in agricultural inputs and farm support services in different states. It shows that hilly states such as erstwhile Jammu and Kashmir, Himachal Pradesh, Arunachal Pradesh, Meghalaya, Mizoram, Tripura and Sikkim received higher per hectare public expenditure in agricultural inputs and support services. Whereas lower expenditure was found in states such as Rajasthan, Punjab, Haryana, Uttar Pradesh, Bihar, Madhya Pradesh and West Bengal (Figure 3). From the study, it was found that North-eastern states such as Arunachal Pradesh, Meghalaya, Mizoram, Tripura and Sikkim had higher per hectare public expenditure on both agricultural inputs and services, and agriculture as a whole. In contrast to this, opposite scenario was seen in states such as Rajasthan, Punjab, Madhya Pradesh, Uttar Pradesh and West Bengal.

Activity wise allocations of public expenditure on agricultural inputs and support services are presented in Table 1. It clearly showed that public expenditure on agricultural

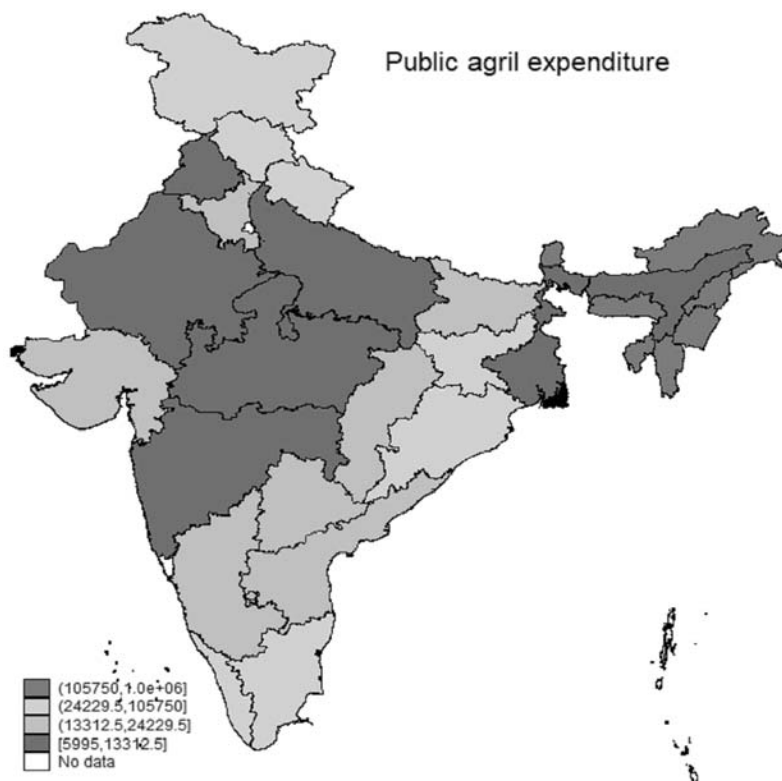


Fig. 2. State-wise per hectare public agricultural expenditure in India: 2006-07 to 2016-17

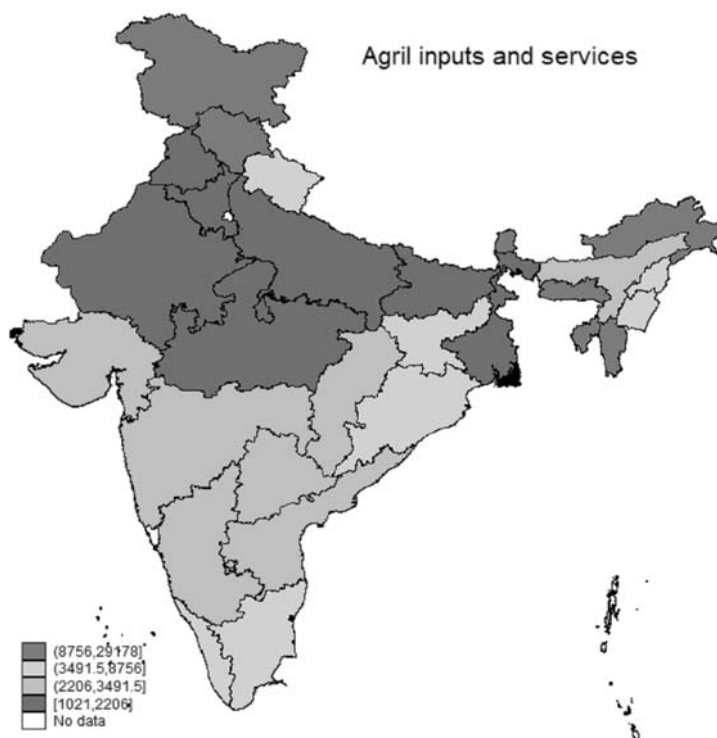


Fig. 3. State-wise per hectare Public expenditure in agricultural inputs and support services: 2006-07 to 2016-17

**Table 1: Activity wise allocations of total agricultural inputs and services expenditure: all India**

Activities	Public expenditure in agricultural inputs and services (Rs. Crores)		
	2006-07	2011-12	2016-17
Crop husbandry	694112 (36.4)	2174011 (48.9)	4324085 (55.6)
Soil and water conservation	182574 (9.6)	305285 (6.9)	770834 (9.9)
Animal husbandry	291109 (15.3)	659130 (14.8)	839220 (10.8)
Dairy development	132214 (6.9)	190633 (4.3)	270623 (3.5)
Fisheries	83662 (4.4)	163631 (3.7)	237359 (3.1)
Forestry and wildlife	504522 (26.5)	889015 (20.0)	1209837 (15.6)
Plantation	483 (0.03)	1163 (0.03)	1120 (0.01)
Marketing and quality control	16138 (0.8)	59022 (1.3)	121954 (1.6)
Total	1904814 (100)	4441890 (100)	7775033 (100)

Note: Figures in parenthesis indicates percentages

Source: Computed by authors

inputs and services has diverted more towards crop husbandry sub sector, which has increased from 36.4 percent in the year 2006-07 to 55.6 percent in 2016-17. On the other hand the opposite scenario was seen in sub sectors like animal husbandry (15.3% to 10.8%), dairy development (6.9% to 3.5%) and forestry and wildlife (26.5% to 15.6%) with decrease in public expenditure percentage during the same period. Actual expenditure on agricultural inputs and support services has seen nearly four folds increase from Rs. 1904814 in 2006-07 to Rs. 7775033 in 2016-17. These finding are in agreement with those of Singh *et al.* (2015).

Table 2 shows the trends in the intensity of government expenditure on agricultural inputs and support services at 2011-12 prices in India between 2006-07 and 2016-17. The real per hectare expenditure made by the government in 2016-17 registered about four-fold increase since 2006-07. The high and increasing public expenditure after 2006-07 coincides with the technological and institutional interventions through various central and state sponsored programmes such as Rashtriya Krishi Vikas Yojana, National Horticulture Mission, National Food Security Mission *etc.*, which were initiated to enhance public investments in agriculture (Rajesh and Singh,

**Table 2: Intensity of agricultural inputs and services expenditure: all India**

Indicators	2006-07	2011-12	2016-17
Expenditure at 2011-12 prices (Rs. Crores)	1904814	4441890	7775033
Ratio of expenditure to AgGDP (%)	1.55	2.96	5.37
Expenditure/ha of Gross Cropped Area (@ Constant prices)	99003	227439	394271
Per Capita Expenditure (Rs.)	24674	53318	89348

Source: Computed by authors.



2020). Agricultural inputs and support services intensity rose from 1.55 in 2006-07 to 2.96 in 2011-12 and to 5.37 in 2016-17. These intensity ratios indicate that expenditure on agricultural inputs and support services has grown since 2006-07, but the major jump came in 2016-17, almost doubling the expenditure intensity within a span of 5 years in the country. Also, per capita expenditure has seen more than three-fold increase between 2006-07 and 2016-17 at all India level.

#### CONCLUSION

This study has examined the expenditure pattern and intensity of agricultural inputs and services expenditure in India. Agricultural inputs and support services intensities has been showing

increasing trends over the years, which is a positive sign. There are imbalances in inter-state allocation of public expenditure in agriculture and the reasons for such imbalances need to be identified. Further steps need to be taken by the policy makers to achieve the goal of inclusive growth in Indian agriculture. It was observed that public expenditure in agricultural R&D is very low as compared to other sectors. Studies showed that investment in R&D and infrastructure have the biggest pay-offs for reducing rural poverty and increasing growth (Pingali, 2011). Therefore, investment in these sectors must be treated as a strategy for rural development and sustained increase in public investments needs to be maintained to benefit the agriculture sector in the country.

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