Foundation for Agrarian Studies

PUBLIC SPENDING ON AGRICULTURE IN INDIA: 2010-11 TO 2019-20

A PROJECT REPORT PREPARED BY
THE FOUNDATION FOR AGRARIAN STUDIES

ROSA LUXEMBURG STIFTUNG

APRIL 2022

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FOREWORD

This report is an outcome of a research project titled "Trends of Public Spending on Agriculture in India (2010-11 to 2019-20)," undertaken by the Foundation for Agrarian Studies in 2021. The project is part of a larger study of public spending on agriculture in four countries — Tanzania and Zambia in Africa, and India and Vietnam in Asia — conducted by Rosa Luxemburg Stiftung.

India's agricultural growth was historically dependent on the investments made by the public sector. The green revolution that led to a significant increase in overall agricultural production and productivity was made possible by state intervention in terms of research and development, extension services, prices, credit, and marketing. However, there has been a marked withdrawal of state from these spheres in the period of economic liberalisation. In a way, continuity and change mark the period of liberalisation in Indian agriculture. On the one hand, many features of the long-run path of agrarian change continue into the contemporary agrarian regime. On the other hand, Washington Consensus-inspired policies after 1991 have led to acute adverse impacts on the conditions of life and work in rural India.

In this broad context characterized by the withdrawal of the state from the agricultural sector in the period of liberalization, this project analyses the trends, patterns, and composition of public spending in agriculture (and rural development) in India during the last decade (2010-11 to 2019-20.) The study is based on data on government (both, central and federal) expenditure on the agriculture sector, including crop production, livestock, fishery, forestry, irrigation and rural development. The data are compiled from different official sources.

The study concludes that public spending in agriculture in India is low, particularly when compared with the size of the sector in the overall economy. Further, public expenditure in agriculture as a share of overall public expenditure is also falling. The study also highlights a shift in the burden of

public expenditure on agriculture, from the central government to the federal units that are the state governments. A summary report on the impact of the Covid-19 pandemic on agricultural policy in India has also been prepared under the project, and will be released separately.

The project team included Abhinav Surya, Deepak Johnson, Divya S. Devadiga, Nihira Ram, and Raya Das. The project was supervised by R. Ramakumar, Professor, Tata Institute of Social Sciences. The Foundation is grateful to the team for conceptualizing and executing the project, and for preparing the project report. We are specially thankful to Abhinav Surya and Raya Das for compiling and analysing the data from various official sources. Abhinav also prepared a set of infographics that summarise the findings of the report. These figures have been added as an appendix of figures in the report by Abhinav and Sethu C. A. Thanks to Mansi Goyal for editing the various drafts of the report. Deepak Johnson was instrumental in curating an online seminar and panel discussion in March 2021, to present and discuss the key findings from the research. Inputs from this event helped in finalising this project report. We also thank Nihira Ram for her role in organizing the event as well as for various graphic design work that she has done for the project. The Foundation is grateful to Divya Devadiga and Sethu C. A. for conceptualizing the design and layout of the final report. Special thanks are due to R. Ramakumar for his constant guidance on all aspects of the study. He was instrumental in conceptualizing and designing the study, and in preparing the project report.

Sandipan Baksi
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I

INTRODUCTION

TRACING THE CRISIS OF AGRICULTURE IN INDIA

Indian agriculture after 1947

When in 1947, India became free from the yoke of colonialism, it had an increasingly lopsided agricultural economy, marked by low, and at times declining, yield of crops, low share of irrigated area, large extent of cultivable land left fallow, deterioration of soil quality and the use of poor quality seeds and poorly yielding livestock (see Nanavati and Anjaria, 1947). The reasons for the deteriorating state of agriculture under colonialism were many and complex. Nevertheless, the one overarching reason was the backward and oppressive relations of production in agriculture. Big landlordism was the dominant feature of agrarian relations. All the land systems of British India, though diverse in their features, were united in their outcomes: sub-division and extreme fragmentation of operated land, sub-infeudation of holdings, insecurity of tenures, rack-renting, illegal cesses and usury.

After independence, the Indian state embarked on a system of national planning for the economy. The necessary condition for a rapid increase in the growth of the agrarian economy was a radical transformation of land relations. However, notwithstanding the emphasis on the land question in the plan documents, agricultural policy after independence never really considered the reform of property rights in land as a means of eliminating structural inequalities in the economy and expanding the home market. Land reforms were a major failure; and the agrarian question remained unresolved. Agriculture was viewed as a "bargain sector" i.e., a sector where output can be increased with very little additional investment.

By the mid-sixties, the possibilities of expanding the cultivated area had been exhausted and agricultural production slowly headed towards a plateau (Rao, 1994). The food crisis of the 1960s threatened to derail the planning process itself. A significant assumption in the planning process was that of government control in the supply of wage goods. With the wage goods bottleneck building up, an increase in agricultural production was essential to sustain industrial growth rates.

The green revolution of the 1960s

The two successive drought years of 1965-66 and 1966-67 led to a sharp fall in food grain production from 89 million tonnes in 1964-65 to 74.2 million tonnes in 1966-67 (Dantwala, 1970). Over the third five year plan period, food prices are estimated to have risen by about 50 per cent. There were fears that food imports to India under the PL-480 scheme from the United States would be discontinued. This apart, the food crisis also threatened to derail the planning process itself. The shift of agricultural strategy in the mid-sixties must be seen in this context.

The droughts in the mid-sixties were preceded by another drought year in 1957-58. It was from here on that fears of inadequacy of food production began. In 1959, the Government of India requested the Ford Foundation to undertake a detailed study of Indian agriculture. The report, titled "India's Food Crisis and Steps to Meet It", was a document that came to have a major influence on agricultural policy. It noted that given the trends in production and population, a rapid rise in the production was inevitable. The report suggested that new emerging technologies in agriculture should be used to formulate a concentrated development effort on crops and areas with maximum potential for increasing production. It also recommended an immediate improvement in the irrigation and drainage facilities, better water management, concentration on small-scale irrigation projects and increased consumption of fertilisers as part of a short-term action programme. In response, the government introduced the Intensive Agriculture Development Programme (IADP) in 1961 and the Intensive Agricultural Area Programme (IAAP) in 1964.

These programmes of intensive agricultural development aimed at encouraging the adoption of a "package" of high yielding inputs, combining improved technology, credit, high yielding seeds and assured irrigation. It is this New Agricultural Strategy (NAS) that is credited for what came to be known as the "green revolution". The technologies of the green revolution were a product of the National Agricultural Research System (NARS). After the late-1960s, there was a significant rise in the public expenditure on agricultural research and extension. In PPP terms, the central government's expenditure on agriculture in India rose from US$ 15,491 million in 1972 to US$ 22,877 million in 1980, US$ 30,549 million in 1985 and US$ 39,109 million in 1990. As a share of total expenditures, these increases in absolute expenditure reflect only as a moderate rise: from 9.7 per cent in 1975 to 14.6 per cent in 1980, 12.6 per cent in 1985 and 11.5 per cent in 1990.

While the NAS was mainly a technology-led programme, it was also supported by four forms of institutional support – price support, credit support, input-subsidy support and marketing support. First, the adoption of the new technologies required price incentives, i.e., higher product prices. The Agricultural Prices Commission (APC) and the Food Corporation of India (FCI) were established in 1965 to advise the government on the level of administered product prices and assist in procurement.

Secondly, the policy of nationalisation of commercial banks in 1969 helped to significantly raise the availability of credit for peasants. Bank nationalisation helped to mop up the new liquidity in the rural areas, improve the geographical spread and functional reach of public banks and weaken the hold of usurious moneylenders in rural areas (Ramachandran and Swaminathan, 2005). Formal institutions of credit provision, mainly commercial banks, emerged as important sources of finance to agriculture displacing usurious moneylenders and landlords. A vigorous branch expansion policy was followed by commercial banks in rural areas, because of which the number of rural bank offices rose from 1443 in 1969 to 35134 in 1991 (Shetty, 1997). Banks were also required to implement schemes of sectoral targeting in rural areas in the form of priority sector lending (Chavan, 2005). About 40 per cent of the total lending was to be necessarily lent to the priority sectors, which primarily included agriculture. About 10 per cent of the total lending was to be directed to "weaker sections" that included small and marginal cultivators and agricultural labourers. The policy of social and development banking was a supply-led policy; it aimed at augmenting the supply of credit to rural areas, and that too at an affordable interest rate.

Thirdly, the subsidy policy of the 1970s covered the pricing of important inputs like fertilisers, pesticides and electricity for irrigation. Prices of major inputs were "controlled" to promote their adoption. For example, the maximum retail prices of fertilisers were fixed by the government, and fertilizer producers were paid the difference between the production costs and maximum retail prices from the governments budget. Fertiliser prices were thus kept under control, and affordable for farmers.

Fourthly, the Agricultural Produce and Marketing Committee (APMC) Act and the Essential Commodities Act were passed in States to regulate the marketing of farm produce by minimising distortions in exchange. Under the APMC Act, a number of regulated markets were set up across the country.

The NAS made a signal contribution towards reducing India's dependence on food imports. The NAS was instrumental in transforming the "ship-to-mouth" predicament of India in the 1960s and, as the agricultural scientist M. S. Swaminathan pointed out, "established the linkage between [national] sovereignty and food self sufficiency". Yet, for all its technological advantages, the outcomes of the NAS were far below potential, especially in the 1970s.

The limitations of NAS have to be understood in terms of the "failure of planners...to see agriculture as a strategic, system transforming sector" that would have required a "focus away from the supply side to the centrality of property relations and mass demand as a propellant for the whole economy". The implementation of land reform was a crucial factor in determining the extent of technological diffusion; the limits of NAS lied in its circumvention of this strategic choice.

Consequently, the benefits of green revolution were distributed unevenly with a "region-wise, crop-wise and class-wise concentration of production". The NAS focussed on regions well- endowed with irrigation, on just two crops (rice and wheat) and on sections of the peasantry that could mobilise the investment necessary for adopting the new technology. The regions that benefited more were Punjab, Haryana and western parts of Uttar Pradesh, which already had considerable past investments in irrigation development. Old landlords and rich peasants, who retained large tracts of land in the absence of implementation of land reform, were able to make major investments in cultivation and accumulate faster than others. The new technology did trickle down to other classes of peasants, but the process was slow and uneven.

The liberalisation of the 1990s

As distinct from the earlier periods, agricultural policy in the 1990s took a different turn; the agricultural sector was significantly liberalised and globalised after 1991. India's economic "reform" was based on an explicit rejection of the need to transform the traditional institutional framework of agriculture. The basic premise of the reform programme was that with increased openness of the economy, the barriers to raising agricultural surplus could be overcome by using external trade as an instrument. The need for land reform did not just take a backseat; the effort was to reverse the implementation of land reform altogether.

The critique of the agricultural policy followed till the 1980s was first put forward by international financial institutions, such as the World Bank, and willingly embraced by the ruling governments. In the new discourse, the concept of terms of trade began to dominate discussions on agricultural policy. It was argued that the earlier policy deliberately skewed the terms of trade against agriculture through protectionist industrial and trade policies and an overvalued exchange rate. As the argument went, once we "get the prices right", the incentive structure in agriculture would improve, and farmers would respond to higher prices by producing more.

Liberalisation of domestic agriculture and agricultural trade was put forward as important steps towards imparting "efficiency" to Indian agriculture. A free trade policy was envisaged not just to "promote farmers' own investments", but also "investments by industries producing inputs for agriculture and agro-based industries". In 1994, India signed the WTO agreement.

According to the new view, terms of trade was biased against agriculture also because the policies of input subsidies and output support prices suppressed domestic prices (see Ramakumar, 2010 for a review). Subsidies in agriculture were "fiscally unsustainable...inefficient and costly to farmers". It was argued that the government should gradually retreat from the functions of procurement of food, as "government cannot manage commodity trade in an efficient way". The large buffer stocks of food should be gradually brought down; as a corollary, food subsidies should not be universally accessible, and need targeting. Instead of public procurement and distribution of food, private trade could be relied up on.

The agenda for the liberalisation of the agricultural sector also included a number of additional components. First, as part of the larger programme of financial liberalisation, the policy on agricultural credit underwent significant changes towards deregulation. Banks should function on a commercial basis, and profitability should be their prime concern. Thus, banks were permitted to rationalise their branch network in rural areas. Norms related to the compulsory provision of agricultural credit by banks were considerably diluted (Ramachandran and Swaminathan, 2005).

Secondly, it was argued that the existing laws on agricultural marketing discriminated against farmers by not allowing them to interact directly with the big buyers. Contract farming was seen to be beneficial to farmers in their efforts at crop diversification. It was argued that land ceilings have to be raised so that rich peasants and agri-business firms can freely lease in land. The underlying belief was that if permitted, land leasing could provide economies of scale by attracting potential investors, including corporate players, into agriculture.

Thirdly, though the official policy often reaffirmed its commitment to encourage public agricultural research, private sector research was to be promoted in a large number of sectors. To encourage the private sector and meet the commitments of the WTO agreement, an Intellectual Property Rights (IPR) regime was endorsed in agricultural research. Prior to the IPR regime, the NARS was the major investor in seed production. Most seeds were open-pollinated varieties, which the farmers could save and sow again. However, with the coming of IPRs, the private sector invested largely in the production of hybrids, where the farmer was forced to buy new seeds every year.

Impacts of liberalisation

The longer period of implementation of the liberalisation policies in agriculture in India was also a period of slowdown in agricultural growth rates. Agricultural growth rates in India after 1991-92 were lower than the growth rates recorded for the 1980s. In the period between 1980-81 and 1991-92, the Index of Agricultural Production (IAP) grew at 3.4 per cent per annum. Between 1992-93 and 2018-19, the annual growth rate of IAP fell to 2.2 per cent (Ramakumar, 2021). Rate of growth of food grain production, especially rice and wheat, slowed down significantly.

In spite of these obvious adverse outcomes, it is required that each argument raised in favour of liberalisation and their outcomes be examined more closely.

Reversal of land reform laws

New economic policies in Indian agriculture were premised on a rejection of the need for a basic institutional transformation in rural areas. It is no surprise, then, that one of the most important features of this policy has been a rejection, and reversal, of state-led land reform.

The new policy aimed at a shift of India's cropping pattern from less-remunerative food grains to high-value and export-oriented crops. Such a change in cropping pattern was to be achieved by promoting economies of scale in agriculture, allowing free leasing in and leasing out of land, boosting agro-processing and facilitating the development of private post- harvest and marketing infrastructure in rural areas. The new organisation of production demanded possession of large tracts of land with private firms, which was constrained by the ceilings on land possession in the land reform laws. Post-1991 policies aimed at removing the ceiling limits by amending these laws, to allow private firms to cultivate unlimited areas of land.

In a country with a terrible track record on land reforms, lifting of land ceilings have encouraged absentee farming by large farmers and corporations. It has also reduced the extent of ceiling-surplus land, while a substantial proportion of rural households is still landless.

The stagnation of public capital formation in agriculture

Public expenditure on agriculture has a significant impact on agricultural growth. According to scholars, government spending on productivity-enhancing investments, such as rural infrastructure, irrigation and agricultural research, have significantly contributed to growths in agricultural productivity as well as rural poverty reduction (see Fan, Hazell and Thorat, 2000). However, public investment in agriculture, as a share of agricultural GDP, began to decline from the early-1980s and continued to decline after the 1990s. Between 1985-86 and 1989-90, public investment in agriculture averaged about 3.1 per cent of the agricultural GDP. This fell to 1.9 per cent by the 1999-00, 2.6 per cent by 2010-11 and 2.5 per cent by 2017-18 (Ramakumar 2021). Almost all the increase in total fixed capital investment in the 2000s and 2010s came from private sources.

The promise of free trade in agriculture

The argument put forward in support of trade liberalisation was that it would improve the prospects of export-led growth in agriculture. This promise has remained unfulfilled. Between 1990-91 and 2014-15, while agricultural exports grew at an annual rate of about 13 per cent, agricultural imports grew at a faster rate of about 21 per cent. Driven by a surge in agricultural imports, the difference between the rupee value of farm exports and imports significantly narrowed after the mid-1990s, from 5.4 in 1993-94 to 2.0 in 2018-19

(Ramakumar, 2021). Between 1990-91 and 2018-19, if agricultural exports grew at an average annual rate of 14.5 per cent, agricultural imports grew at a faster rate of about 17.6 per cent Exports and imports in agriculture also displayed significant instability in the period after the mid-1990s.

Consequently, there was a sharp fall in domestic prices of many commodities after the mid-1990s. In the background of greater integration between domestic and international markets, domestic prices of cotton, tea, coffee, spices and many fruits and vegetables fell after 1997- 98 following a fall in the corresponding international prices.

The increased alignment of domestic and world prices after trade liberalisation also effectively imported the volatility of international prices – formed in highly imperfect and monopolised market environments – into Indian agriculture. On the one hand, price volatility increased the uncertainties in cultivation. On the other hand, price volatility also sent misleading price signals to domestic producers. Misleading price signals encouraged cropping pattern shifts that were largely ecologically unsound and economically unviable in the medium term.

The rise in input costs

The rationale for the provision of input subsidies has historically been to provide farmers with remunerative as well as stable prices so as to enable them to adopt new technologies and raise yields. Also, subsidies help to compensate for imperfections in the capital market and the risks associated with the adoption of new and high-cost technologies. There is by now wide agreement that input subsidies have significantly aided the process of adoption of new technologies in the post-green revolution period.

The argument in favour of reducing subsidies was based on three reasons: first, subsidies constitute a substantial burden on the finances of the government; secondly, subsidies crowd out public investment by diverting resources; and thirdly, the prices of inputs do not reflect their scarcity value and hence these inputs are prone to overuse resulting in environmental degradation and fall in soil quality.

The Indian government's policy in the 1990s and 2000s was to cut input subsidies. As a result, input prices and costs of production increased sharply. It was the prices of fertilisers

and pesticides that rose most sharply. Particularly after 2009, the prices of phosphoric and potassic fertilisers tripled or quadrupled. In 1995, the maximum retail price (MRP), in terms of Rs per kg of nutrient, of di-ammonium phosphate, single super phosphate and muriate of potash were Rs 18.50, Rs 17.66 and Rs 7.57 respectively. The corresponding MRPs in 2019 were Rs 47.61, Rs 49.05 and Rs 31.67. The rise of input costs, coupled with the fall of output prices, shrank profitability of agriculture in a range of crops.

Public expenditure on agricultural research

Historically, the government has been the leading investor in agricultural research, as it was considered a "public good." In the developed world, public spending on agricultural research as a share of agricultural GDP ranges between 2 and 3 per cent. For all developing countries put together, public spending on agricultural research as a share of agricultural GDP was 0.6 per cent in the 2000s. In India, the corresponding share stood at 0.56 per cent.

In the 1990s and 2000s, private firms have expanded their hold over agricultural research. Of the total quantity of seeds sold in India in 2014-15, about 59 per cent was sold by the private sector. The shares of private sector seeds in total quantity of seeds sold in paddy and wheat were 42.5 per cent and 53.4 per cent respectively. But in specific crops like cotton, maize and sunflower, the share of the private sector seeds in total quantity of seeds sold was above 95 per cent. If we consider the total quantity of hybrid seeds sold in India in 2008, the share of private sector hybrids was 100 per cent for cotton, sunflower and vegetables, 98 per cent for maize, 90 per cent for paddy and 82 per cent for millets (Ramakumar, 2021). In crops like bajra and jowar too, the share of the private sector in seed production was between 80 and 90 per cent.

However, private sector research has never been considered a substitute for public sector research. Pardey and Beintema (2001) noted that private research across the world covered only a "small sub-set of the needs of the poor." Technologies developed by the private sector were mainly suited to "capital-intensive forms of commercial agriculture with high value-added aspects off the farm." Private sector research focussed mainly on the development of herbicides, insecticides and technologies related to food storage, transport and processing technologies (see also Alston et al, 2000). In India too, private sector agricultural research is confined to a few crops, such as maize, sunflower, cotton, pearl

millet, oil seeds and sorghum, where the expected profit levels are high.

Shrinking credit to agriculture

The period of financial liberalisation between the early-1990s and early-2000s was clearly a period of reversal of the achievements of bank nationalisation in 1969. Three aspects of the post-1969 policy of social and development banking stood out. First, according to the new branch licensing policy, commercial banks were required to open four branches in unbanked rural areas for every branch opened in metropolitan or port areas. Secondly, according to the policy of priority sector lending, 40 per cent of the net bank credit was to be provided to those sectors of the economy (or sections of the society) that would not get timely and adequate credit in the absence of binding targets. Thirdly, according to the differential interest rate scheme of 1974, loans were provided at concessional interest rates on advances made by public banks to selected low income groups to engage in productive and gainful activities.

In the 1990s, there was (a) large-scale closure of commercial bank branches in rural areas; (b) a widening of inter-State inequalities in credit provision, and a fall in the proportion of bank credit directed towards regions where banking was historically underdeveloped; (c) a sharp fall in the growth of credit flow to agriculture; (d) increased sidelining of small and marginal farmers in the supply of agricultural credit; (e) increased exclusion of the disadvantaged and dispossessed sections of the population from the formal financial system and (f) strengthening of the hold of moneylenders on rural debt portfolios (see Ramachandran and Swaminathan, 2005; Ramakumar and Chavan, 2014 for a detailed discussion). For example, about 922 rural bank branches were closed down between 1995 and 2005. The annual growth rate of agricultural credit fell from 6.8 per cent between 1981 and 1991 to 2.6 per cent between 1991 and 2001.

In sum, a consequence of the squeeze of formal credit in the 1990s was the resurgence, in different degrees across India, of the informal sector of credit, particularly moneylenders. Studies have shown that the expansion of the informal sector of credit sharply raised the costs of credit in agriculture in the 1990s (see Ramachandran and Swaminathan, 2002). Beginning from the early-2000s, the supply of agricultural credit assumed a totally different role – of financing new forms of commercial, export-oriented and capital-intensive agriculture, including by corporate houses.

In summary

Agricultural development in post-independence India is marked by a failure of the state to resolve the agrarian question, i.e., ending the extreme concentration of land ownership and use and weakening the factors that fostered disincentives in investment and technology adoption, tied workers to a social system with considerable pre-modern features and compressed purchasing power. While this failure shaped the pattern and nature of agricultural growth in India after 1947, the implementation of economic "reforms" after 1991 introduced new dimensions to the contradictions of the earlier regime.

The green revolution of the 1960s and 1970s helped Indian agriculture overcome a "ship-to- mouth" existence and achieve self-sufficiency in production. The per head availability of food grains rose from 150 kg in 1947 to 175 kg in 1992. This achievement was built on a platform of state support; there was price support, subsidy support, credit support and marketing support. The interventionist role of the state in the 1970s and 1980s led to the creation of a network of institutional support structures in rural areas. Indeed, given the unreformed agrarian economy with dwindling public investment, the benefits of these support structures were distributed unequally – across crops, classes and regions.

But economic "reform" after 1991 was based on an explicit rejection of the need for an institutional transformation of Indian agriculture. Instead, it was argued that with increased openness, the barriers to raising agricultural surplus could be overcome through free trade. Diversification away from food grains, and towards export-oriented crops, was sought to be promoted. Land reform laws were amended in many States to raise land ceilings and encourage private corporate investment.

Over the longer period of reform between 1992-93 and 2010-11, agricultural growth rates slowed down. In the 1990s and 2000s, there was a weakening of public institutional support to agriculture. The protection offered to agriculture from predatory imports was removed, resulting in a fall in prices of many commodities. As part of fiscal reforms, the input subsidy system was restructured, due to which input prices and costs of production increased sharply. The growth of public capital formation in agriculture stagnated, as did the growth of public expenditure on research and extension. The expansion of rural credit slowed down in the 1990s, reopening the doors for the informal sector; in the 2000s, public banks increasingly catered to the needs of large farmers and corporate agri-business

groups. Of all the credit given to agriculture, over half has been estimated to have been diverted to categories other than farmers (Ramakumar and Chavan, 2014).

In sum, continuity and change mark the period of liberalisation in Indian agriculture. On the one hand, many features of the long-run path of agrarian change continue into the contemporary agrarian regime. On the other hand, Washington Consensus-inspired policies after 1991 have led to acute adverse impacts on the conditions of life and work in rural India.

It is in this broad context that this report tries to analyse the withdrawal of the state from spending, investing, regulating and intervening in the agricultural sector in the period of liberalization. We analyse the spending pattern of the government in agriculture in this report. The period of analysis is limited for the most recent decade (2010-11 to 2019-20).

II

OBJECTIVES

This broad objective of the study is to analyse the trends, patterns, and composition of public spending in agriculture (and rural development) in India during the last decade (2010-11 to 2019-20). The study is an assessment of the public budget for agriculture in India, against five broad parameters:

i. State sovereignty,
ii. Environmental sustainability,
iii. Transformation of agricultural systems,
iv. Target group small-scale food producers and focus on pro-poor, and
v. Public research and extension services.

More specifically it would inquire into the following questions:

1. What has been the general trend of public expenditure in the last decade?

2. What has been the trend of public spending in the agriculture sector -- including crop production, livestock, fishery, irrigation, and rural development, in absolute terms?

3. What has been the trend of public spending in the agriculture sector as a share of overall public expenditure?

4. What has been the contribution of international development assistance to development of the agriculture sector in India? or what is the share of external funds in the budgetary provision for agriculture?

5. What has been the trend of government expenditure (including subsidy support) on conventional/chemical intensive technologies such as artificial fertilisers, and pesticides?

6. What has been the trend of public spending on sustainable farming systems?

7. What has been the trend of public expenditure on research and extension in agriculture?

8. What are the specific budgetary measures that target small farmers, and women farmers?

III

DATA AND METHODOLOGY

This report is based on data on government both, central and federal) expenditure on the agriculture sector, including crop production, livestock, fishery, forestry, irrigation and rural development. The data are compiled from different official sources.

The Government of India annually publishes data on capital and revenue expenditure in the different sectors of the economy, including in agriculture, as part of the union budget. The budget documents are publicly available.

Analysis based on functional classification

The datasets include both the functional classification by sectoral composition from budgetary expenditure, and department or ministry-wise classifications of expenditure under various schemes.

The data on functional expenditure, i.e., expenditure made under various functional categories for the union government were obtained from Volume 1 of the expenditure budget documents of the Ministry of Finance, Government of India. This dataset provides information based on broad functions of government expenditure. All the functions are divided into two heads: social services and economic services. Agriculture and allied activities are included under economic services. All the expenditures categorised under agriculture and allied activities and irrigation in economic services, including agriculture research and extension services, were considered as the total expenditure for agriculture spent by the Union Government.

For the State governments, a similar dataset on overall functional expenditures of all the State governments was obtained from the yearly reports published by the Reserve Bank of India (RBI), titled "State Finances: A Study of Budgets." These reports provide the data on combined expenditure by all State governments on different sectors of the economy, including agriculture. They also give the expenditure on broad functional categories, similar to the budget documents published at the central level.

Analysis based on ministry-level spending

The study further details the expenditure under various schemes by ministries and

departments under central government including capital and revenue expenditure. Agriculture and allied activities schemes are identified from various ministries including Ministry of Agriculture and Farmers' Welfare, Ministry of Chemicals and Fertilizers, Ministry of Development of North-Eastern Region, Ministry of Food Processing Industries, Ministry of Rural Development, Ministry of Water Resources/Ministry of Jal Shakti, Ministry of Power and Ministry of Finance. As the next step, each scheme was coded based on the indicators we wanted to analyse. These codes included were the following:

- Technology development;
- Crop diversification;
- Seed variety and promotion;
- Agriculture and market infrastructure;
- Farmers' income support by direct cash transfer;
- Farmers' income support by price stabilization in output market;
- Crop insurance;
- Agriculture knowledge generation;
- Sustainable agriculture;
- Subsidy for agriculture inputs;
- Agriculture mechanisation;
- Rural finance;
- Rural employment;
- Land reform;
- Irrigation infrastructure;
- Ground water irrigation and power subsidy;
- Agriculture research;
- Inclusivity in agricultural development; and
- Food security.

Further, the indicators were grouped according to the broad objectives of the report; for instance, some of the groups were: alternative agriculture practices; state sovereignty and spending towards vulnerable sections of the society. To analyse the various dimensions of public expenditure like environmental sustainability, transformation of agricultural systems, etc., we utilise the data collected on various schemes of the government. We study these

schemes and classify the expenditures under various dimensions, to draw inferences on the budget expenditure.

Other macroeconomic data

We collected the annual Gross Value Added (GVA), Gross Domestic Product (GDP) and GVA from agricultural from the publications of the Ministry of Statistics and Programme Implementation, Government of India. In India, GVA is calculated by the Central Statistical Office (CSO) by adding the value of output from all the sectors including agriculture, manufacturing, trade, transport, public administration, etc. Gross Domestic Product (GDP) is further obtained by adding the net product taxes and subsidies. As we are analysing the public investment in the agriculture sector, GVA is a better indicator to quantify the changes in the trends and composition of expenditure in this sector.

We also collected data on Gross Tax Revenue and Fiscal Deficit of the Union Government, and State governments' share in union taxes from the Annual Report of the Controller General of Accounts, Department of Expenditure, Government of India. Goods and Services Tax (GST) compensation paid by the Union government to the State governments are available from the monthly reports published by the Ministry of Finance. These data were collected to construct indicators for various union and federal government expenditures to analyse and draw conclusions on overall public expenditure in India.

Construction of indices of expenditure

We used the following four indices for estimating the trend, pattern and composition of public expenditure in agriculture.

1. **Public Expenditure Ratio (PER)** is the ratio of the total expenditure by Government to the GVA of the specific year. It is an estimate of public expenditure as a proportion of the total output generated in the economy of the country.
2. **Agriculture Orientation Ratio (AOR)** is the ratio of public expenditure in agriculture and allied sectors to total government expenditure in a particular year. It gives an idea of the proportion of public expenditure that goes to agriculture.
3. **Agricultural Priority Ratio (APR)** is the ratio of expenditure in different sub-sectors within agriculture to the total public spending on agriculture sector. This measure gives an idea of the distribution of public spending in agriculture across different sub-sectors.

4. **Agriculture Expenditure Ratio (AER)** is the ratio of expenditure in different sub-sectors of agriculture to GVA of agriculture. It is an estimate of the public spending on various sub-sectors within agriculture as a proportion of the total output generated in agriculture.

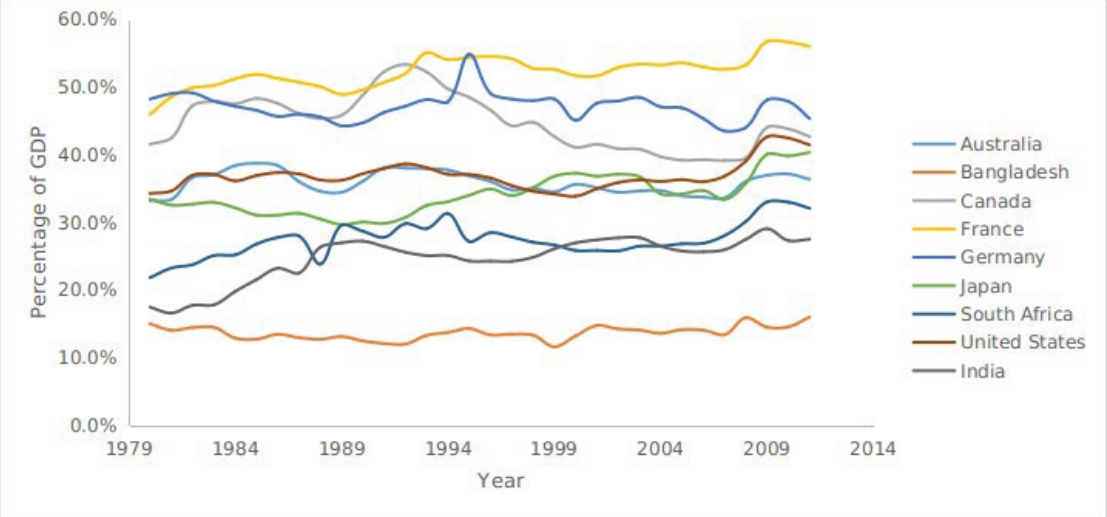
For the calculation of the above indices, the nominal data were used.

IV

PUBLIC EXPENDITURE IN INDIA

Figure 1 shows the public expenditure pattern of countries at different levels of development. The share of public expenditure to GDP in India is much lower than in developed countries; barring few years, the figure is lower than South Africa. Between 2010-11 and 2018-19, the public expenditure as a percentage of GDP has also seen a decreasing trend.

Figure 1 *Trends of public expenditure as per cent of GDP in different developed and developing economies 1980-2011*

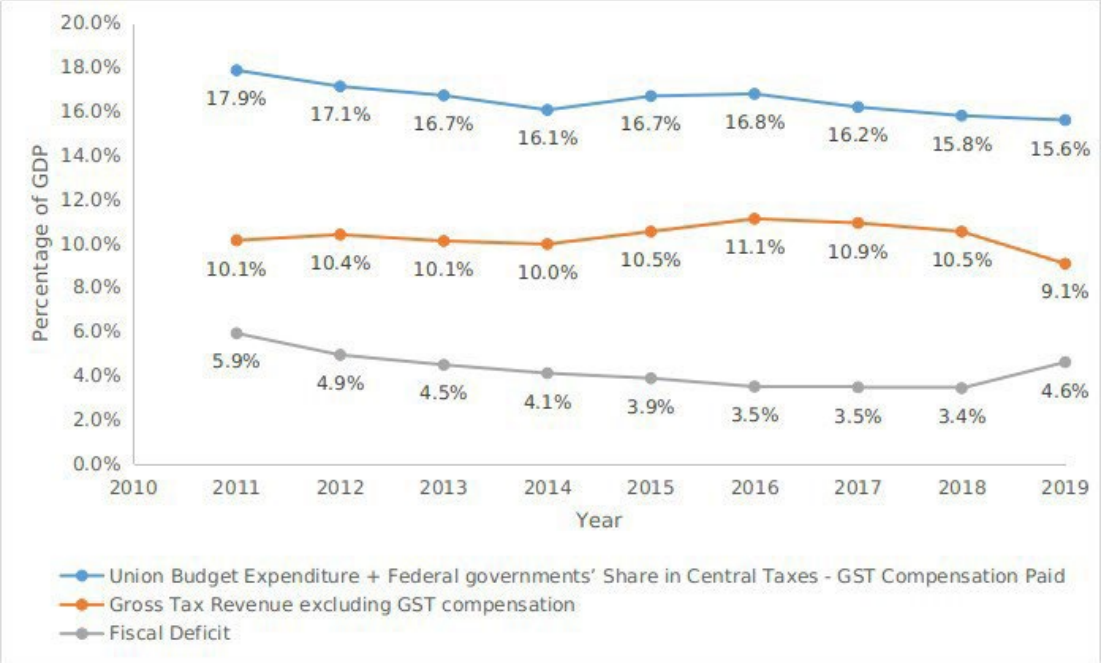


Increasing public expenditure burden on states

In this section, we pay special focus to the nature of public expenditure in India during the last decade. Working within the neoliberal framework, the Union government has been aggressively pursuing "fiscal consolidation" policies i.e., reducing the fiscal deficit as a percentage of GDP. Net central government expenditure can be measured as the total burden on the union government's revenue books (i.e., Central Budget Expenditure + State's Share in Central Taxes - GST Compensation Paid). This net central government expenditure as a percentage of GDP has seen a decreasing trend: 17.8 per cent in 2011-12 to 15.8 per cent in 2018-19. This phenomenon is seen at the same time when the total tax revenue of the central Government (Gross Tax Revenue - GST compensation) as a percentage of GDP has fairly remained constant, with even a marginal increasing trend. This has resulted in a downward trend in the union government's fiscal deficit as a

percentage of GDP (5.9per cent in 2011-12 to 3.4per cent in 2018-19). These trends can be seen from Figure 2. This target of fiscal consolidation is primarily being achieved by cutting down Union government expenditure.

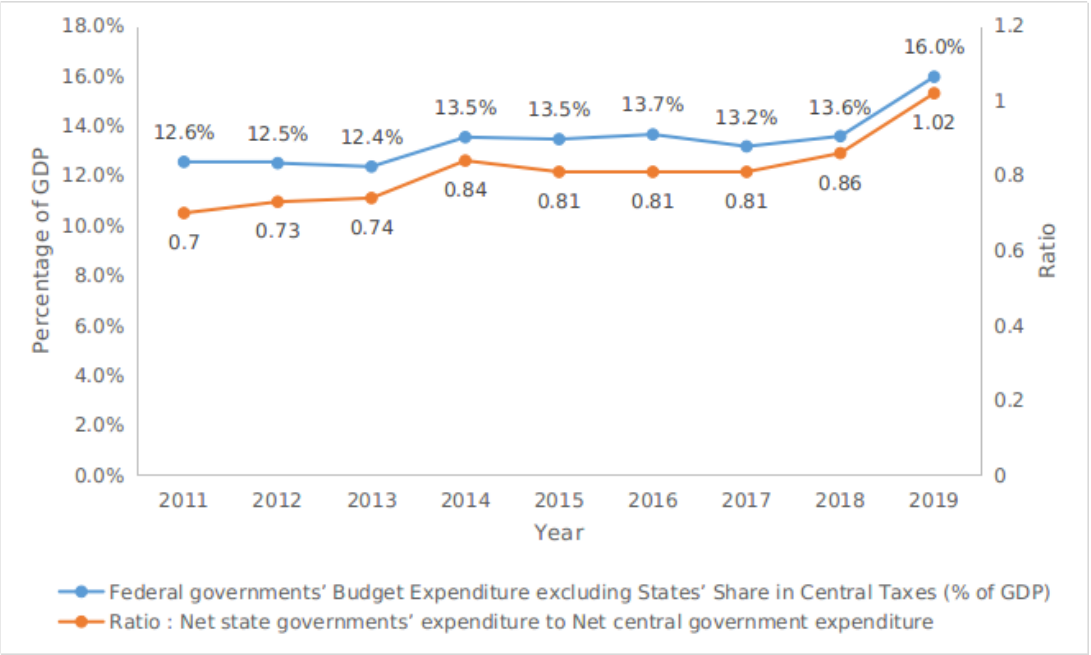
Figure 2 *Net Expenditure of Union Government as per cent of GDP*



Simultaneously, the burden on State governments has increased. Net state governments' expenditure can be measured as the total burden on state governments' own revenue books (i.e., States' Budget Expenditure – States' Share in Central Taxes). This net state government expenditure as a percentage of GDP has seen an increasing trend (12.5 per cent in 2011-12 to 13.6 per cent in 2018-19) over the past decade. This trend can be seen in Figure 3.

Moreover, the ratio of net state governments' expenditure to net central government expenditure has been seeing an increasing trend over the past decade (Figure 3). So, clearly, the burden of maintaining the public expenditure is being transferred from the Union government to the state governments, despite the union government's total tax revenue as a percentage of GDP seeing a marginal upward trend. This phenomenon has taken place at the same time when the union government is aggressively attempting to erode the rights of the state governments by introducing the GST regime, which heavily centralises the revenue generation process and severely curtails the capacity of the state governments to raise their own revenue to fund their public expenditure projects. Attempts are also being made to enforce stricter fiscal deficit targets on the state governments.

Figure 3 *Net Federal Governments' Expenditure as per cent of GDP*



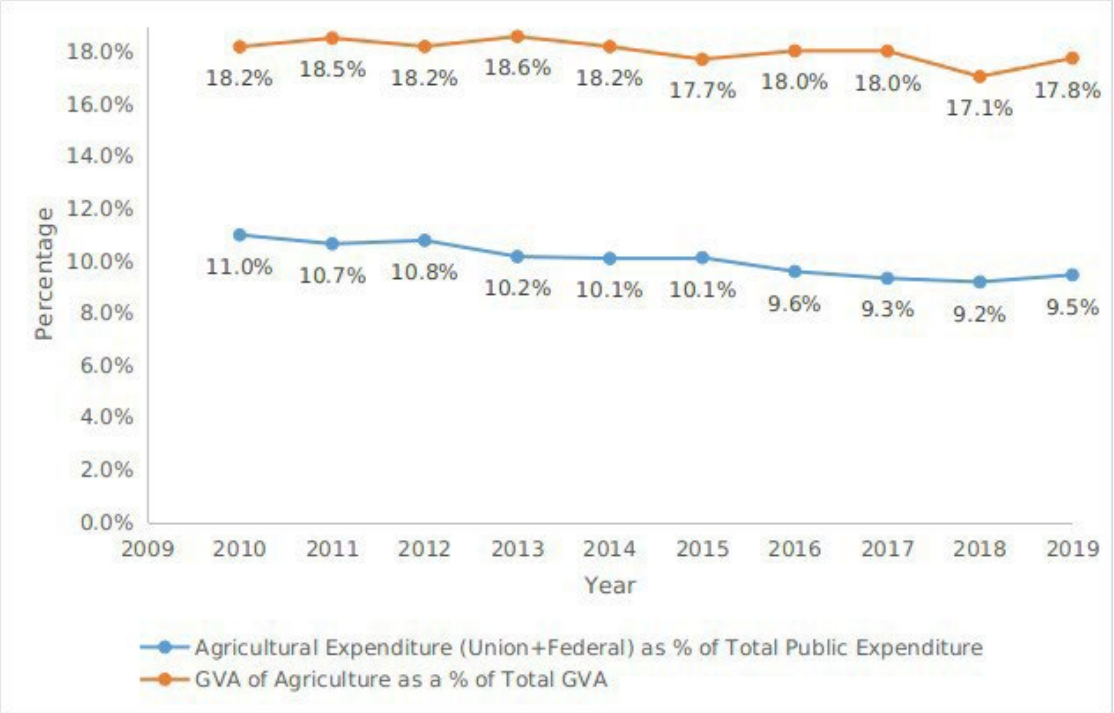
V

PUBLIC BUDGET FOR THE AGRICULTURE SECTOR IN INDIA

Trends in public expenditure in the last decade

In Figure 4, we see the trends of public expenditure in the agricultural sector as a share of total public expenditure. From the plot, we can see that the share of expenditure on agriculture in the total expenditure is lower in comparison to the share of agricultural GVA in the total GVA. More importantly, the share of expenditure on agriculture in the total expenditure decreased from 11 per cent to 9.5 per cent between 2010-11 and 2019-20, with a CAGR of -1.65 per cent. At the same time, the share of agricultural GVA in total GVA decreased from 18.2 per cent to 17.8 per cent during the same period, with a CAGR of -0.27 per cent. In other words, public expenditure on agriculture has declined faster than the decline in the relative importance of agriculture in the economy.

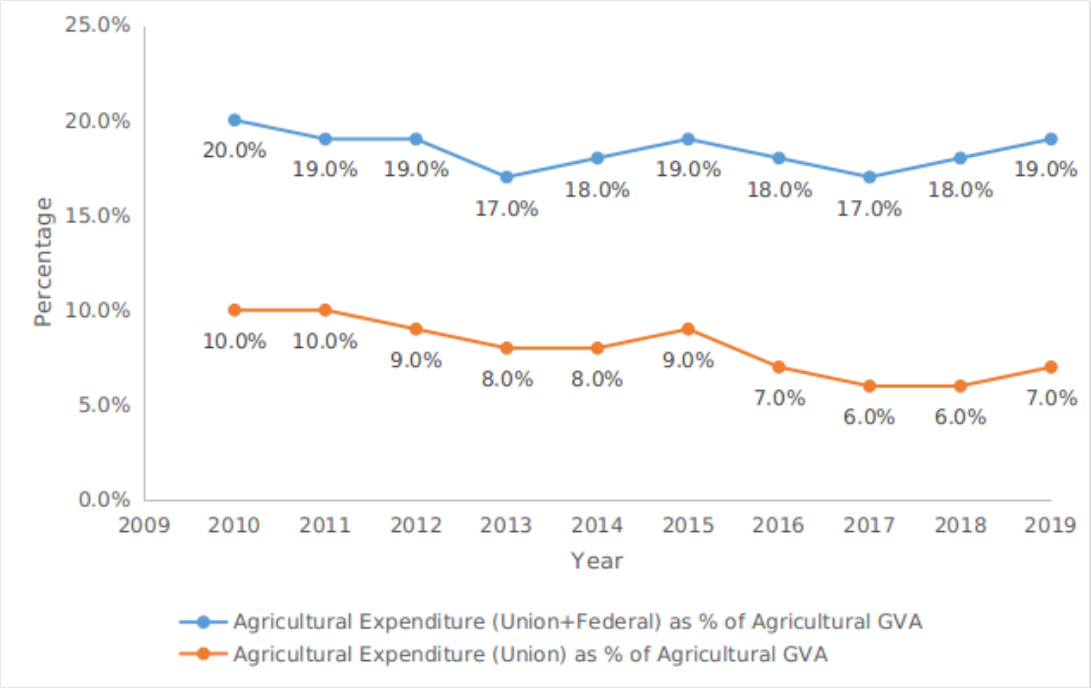
Figure 4 *Trend in Public Expenditure on Agriculture*



As a result, from Figure 5, we can see that the AER has declined from 20 per cent to 19 per cent during the last decade. But more importantly, the AER of union government expenditure on agriculture has declined sharply from 10 per cent to 7 per cent. Hence, we can conclude that, similar to total public expenditure, in the agricultural sector also, the burden of public expenditure has been transferred from union government to federal

governments. In absolute terms (See Appendix Figure 8), we see that there has been an increase in public expenditure on agriculture at constant prices over the last decade. However, there is an observable trend of stagnation in expenditure by the Union government on agriculture. The rise in total public expenditure is almost entirely led by State government expenditure. Most recently, there has been an increase in direct income transfer scheme (by way of PM-KISAN) by the Union Government, explaining the spike in expenditure incurred by the Union Government in the last two years. However, these increased expenditures have not been commensurate with the output generated in the sector, as seen from the movement in AER (Figure 5).

Figure 5 *AER of Union Government and Overall Public Expenditure on Agriculture*



VI

Expenditure in Different Sectors of Agriculture: Trends and Pattern

The sluggish growth of the agricultural sector and an overdependence on the sector as a source of employment makes it immensely pertinent to analyze the composition of public expenditure in agriculture.

Shift in focus of union expenditure away from production

We clearly see a falling AOR and APR in the agricultural sector over the last decade. The focus of union government's expenditure in this sector is gradually shifting away from expenditure for real production and towards income support, interest subsidy and credit support for farmers. Trends in Figure 6, Figure 7 and Figure 8 point to a decreasing trend in APR and AER for "Crop Husbandry" (which includes schemes on seeds, soil health, crop management, urea subsidy, etc.), "Food Storage" and "Agricultural Research." The primary reason for the sharp rise in APR and AER for "Crop Husbandry" in 2018-19 and 2019-20 is due to a new scheme titled PM-KISAN; this was a direct cash transfer scheme for farmers announced by the union government.

Figure 6 *AER and APR of Crop Husbandry (Union Government)*

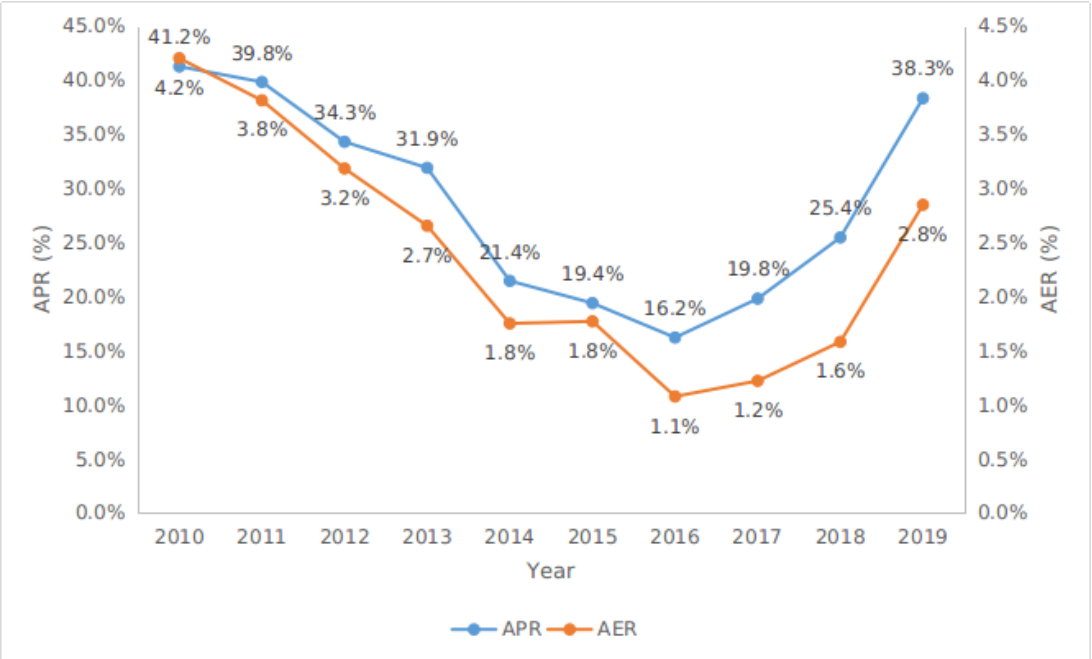


Figure 7 *AER and APR of Food Storage (Union Government)*

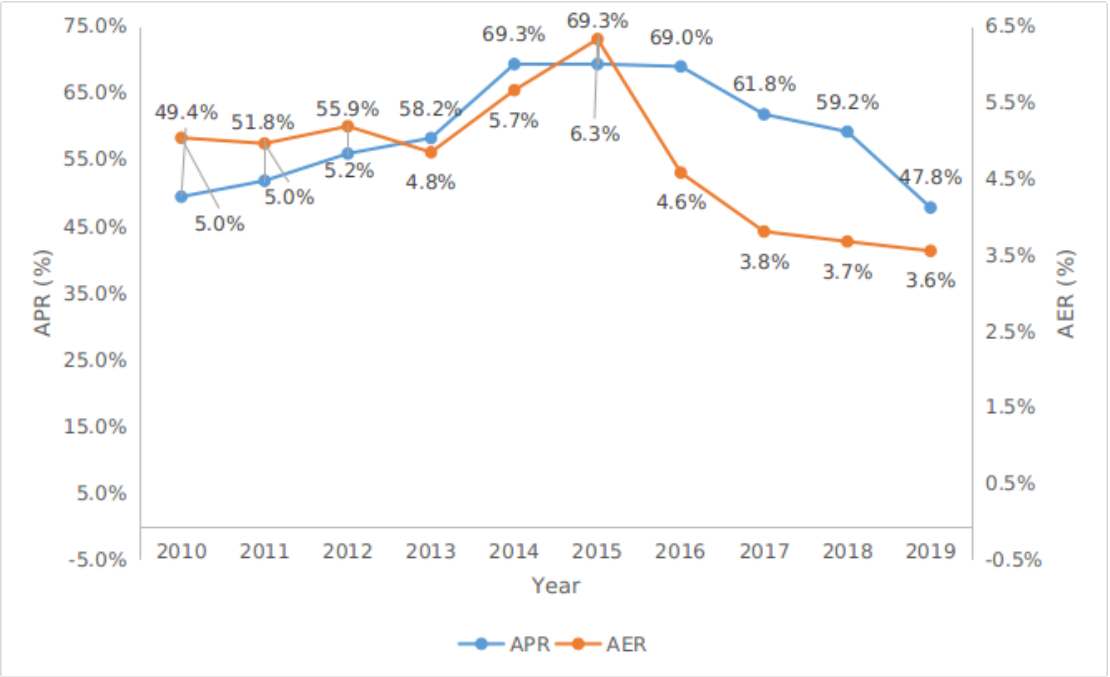
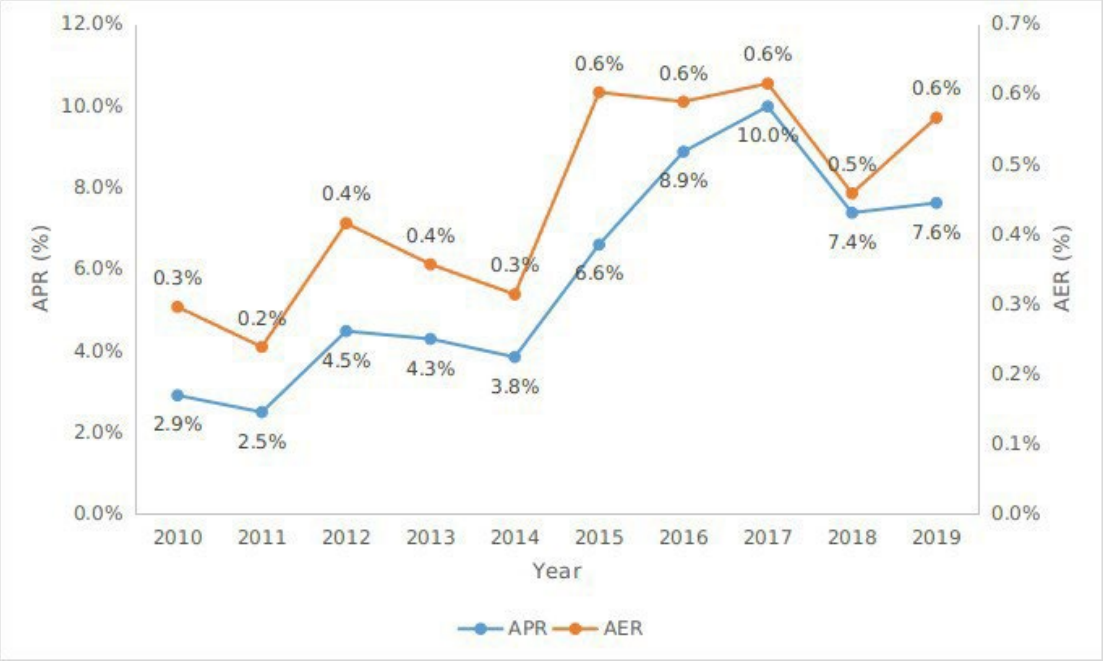


Figure 8 *AER and APR of Agricultural Research (Union Government)*

But at the same time, both AER and APR for allocations under "Agricultural Financial Institutions" have increased, which primarily constitute schemes for credit disbursement and interest subsidy (Figure 9). The largest payout in these schemes is not from the government but the banks. But the government outlays in this sphere are primarily subsidies on interest rates offered to the farmers. Our conclusion is that the government's

budget focus has been shifting away from investment and expenditure in the real sector of agriculture. More focus is being given to cash support to farmers and interest/credit subsidies. This shift has been taking place in the larger context of shrinkage of agricultural expenditure relative to the size of the economy. In absolute terms, the expenditure for crop husbandry declined until 2017-18 (at constant prices), with a sharp increase in the last two years of analysis only due to the PM-KISAN scheme. The expenditure on food storage has stagnated, and on agricultural research has marginally declined. Here too, we see that, in absolute terms, there is a sharp increase in allocation towards agricultural financial institutions. (See Appendix Figures 9, 10, 11and 20.)

Figure 9 *AER and APR of Agricultural Financial Institutions (Union Government)*



Animal Husbandry and Fisheries

Faced with negative farm incomes during most years, income from livestock has played a crucial role in stabilising the agricultural income for small and medium farmers of rural India. Looking at the AER and APR for animal husbandry, we see a decreasing trend until 2017 (Figure 10). But in 2018 and 2019, we see an increase in APR and AER for budget expenditure. At the same time, it is notable that these increases were too moderate to be taken seriously. But in case of fisheries, these values see a negative trend over the last decade (Figure 11). The absolute terms follow a similar trend, although there is a significant rise in the expenditure for animal husbandry after 2017. (See Appendix Figure 12 and 13.)

Figure 10 *AER and APR of Animal Husbandry (Union Government)*

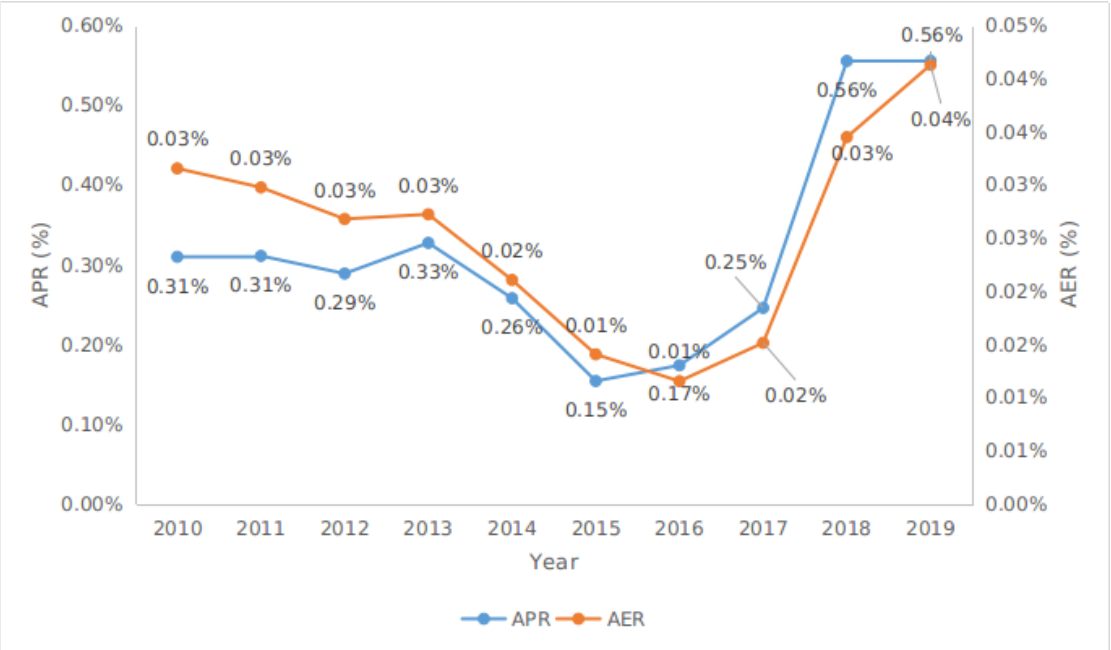
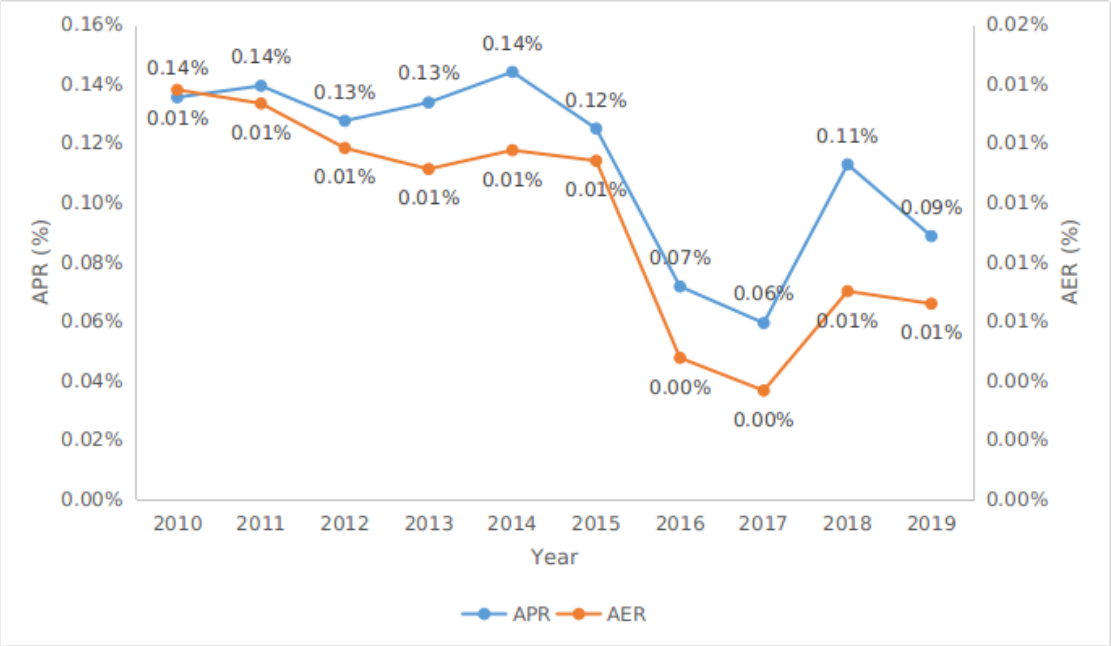


Figure 11 *AER and APR of Fisheries (Union Government)*



Grants in-aid to State Governments

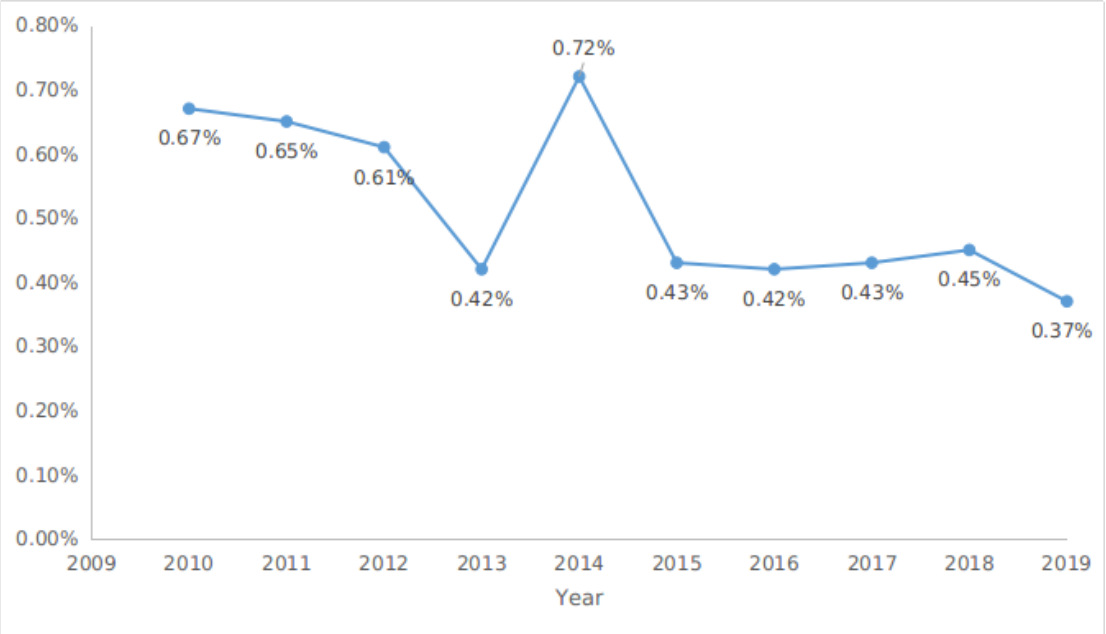
Prior to the union budget for 2017-18, the budget documents clearly specified the sub-category (like "Crop Husbandry") under which the allocation for each scheme was made. But since 2017-18, such exclusive specification has been dropped.

Since certain scheme allocations are made under the sub-category of "Grants-in-aid to

State Governments", we needed to rule out the possibility of change in categorisation of schemes related to agriculture to this sub-category, which might have caused a negative trend in AER for several sub-categories (like "Crop Husbandry", "Agricultural Research", etc., as seen above). Hence, we analysed the allocation made under this category by three departments - Department of Agriculture and Cooperation, Department of Agricultural Research and Education, and Department of Animal Husbandry, Dairying and Fisheries.

From Figure 12 we see that the trend in total agricultural allocation as a percentage of agricultural GVA, made under the sub-category "Grants-in-aid to State Governments" (by the three departments), is negative over the past decade. Hence, we can safely conclude that the negative trends in AER in the previous sections were not because of any potential exclusions due to possible changes in the categorisation of schemes under this category. In absolute terms, the allocation under this head represents a stagnating trend over the decade (See Appendix Figure 19.)

Figure 12 *Agricultural Grants-in-aid to Federal governments as per cent of Agricultural GVA*



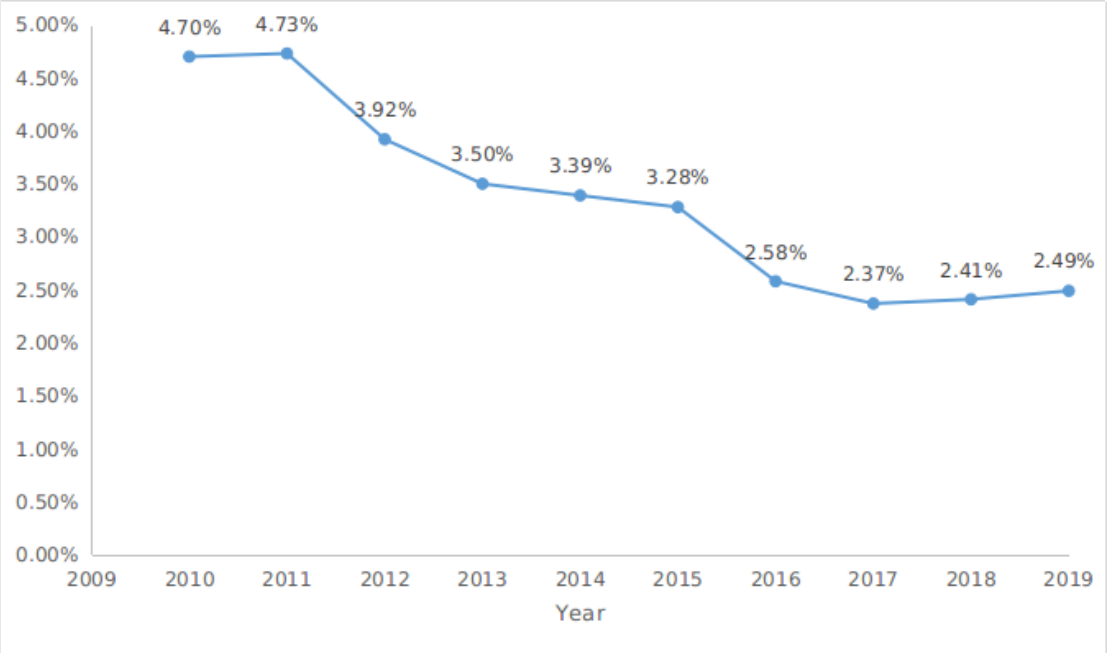
Fertiliser Subsidy

Fertilizer subsidies are an important part of agricultural expenditure of the union government. A part of the allocation for subsidies made towards the "Department of Fertilisers" is captured under allocations for "Agriculture and Allied Activities," while another part is categorised as allocation for "Industries" in manufacture/sale of urea. As claimed by the budget document, even the allocation for industries is "intended to make

fertilizers available to the farmers at reasonable prices" (Department of Fertilisers, Expenditure Budget, Government of India). Since all the allocations made under this department are intended to directly/indirectly benefit the farmers, we analyse the allocation made under this department over the years.

From Figure 13, we see that the allocation made under this head as a percentage of agricultural GVA has significantly decreased over the last decade. Hence, one of the major factors for the drop in AER of union government's agricultural expenditure is the reduction in real expenditure on fertilizer subsidy. In absolute terms too, we see a decline in allocation towards this department over the last decade. (See Appendix Figure 14.)

Figure 13 *Allocation towards Department of Fertilisers as per cent of Agricultural GVA*



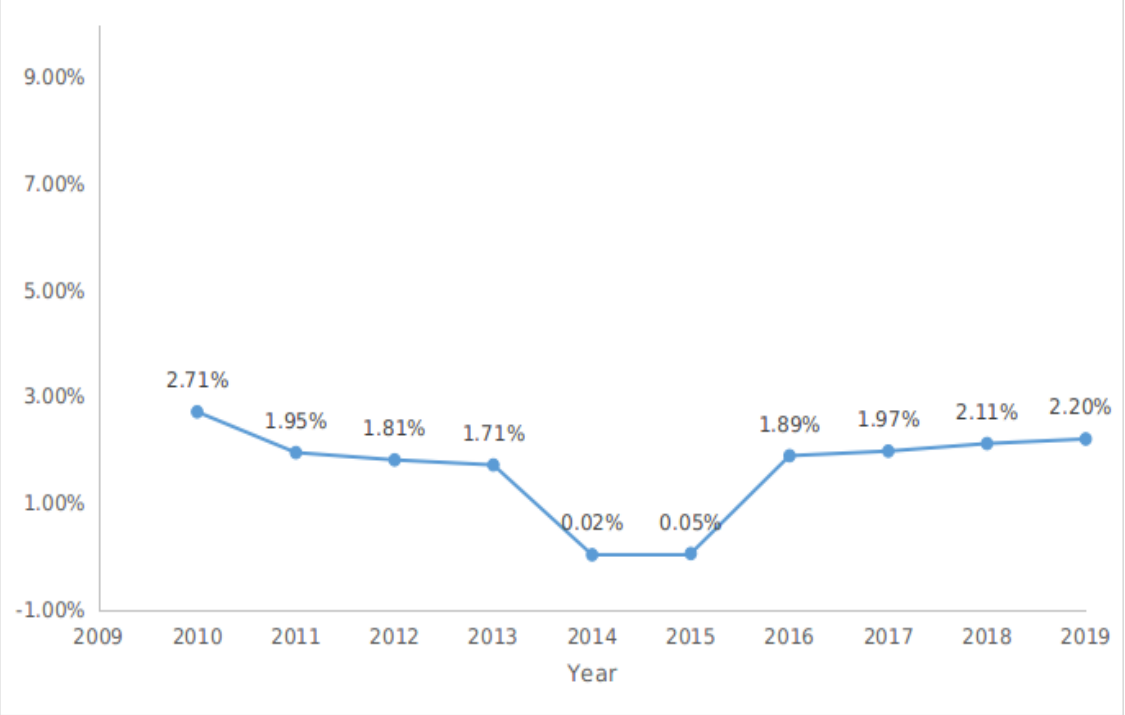
Rural Employment

Allocation for rural employment is made under the Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS), which was started with the vision to provide hundred days of guaranteed employment and wages to every rural household. Since its inception, the scheme has been playing a crucial role in poverty alleviation and ensuring valuable income to the rural population of India. A study by NCAER (2015) found that at least 25 per cent of the decline in poverty is observed among participating households in MGNREGA between 2004-05 and 2011-12 based on IHDS data (Indian Human Development Survey). Consumption expenditure on durables including nutrition increased during the same period among MGNREGA participating households (Varman

and Kumar, 2020).

The total expenditure for rural employment as a percentage of total agricultural GVA is provided in Figure 14. As evident from the data, the AER for rural employment is mostly stagnant, with even a marginal decrease seen between the beginning and the end of the decade. This phenomenon is seen during the period in which increasing percentage of rural population demanded MGNREGS jobs, owing to the increasing severity of crisis in rural India. From Figure 5, we also know that the AER of total public expenditure on agriculture has also decreased over the past decade. Hence, it is evident that in the face of severe rural and farm crisis, the union government hardly made any significant efforts through the MGNREGS to offer relief to the rural population. In absolute terms, although there is an increase in Union Government expenditure on Rural Employment, the rise is very marginal and grossly insufficient to meet the demand for employment. (See Appendix Figure 17.)

Figure 14 *Allocation towards Rural Employment as per cent of Agricultural GVA*



Overall Rural Development Expenditure

From the functional expenditure data, we look at the AOR and APR for overall (Union + States) public expenditure on Rural Development. We see that the total public expenditure on rural development as a percentage of both overall public expenditure and agricultural GVA has seen a considerable increase. About 90 per cent of the expenditure classified as "Rural Development" by the Union Government is allocated under the Rural

Employment (MGNREGS) scheme. As seen from Figure 14, Rural Employment expenditure as a percentage of agricultural GVA has remained stagnant. But due to a sharp increase in allocation under "Rural Development" by the State governments, the overall public expenditure in this sphere has seen a considerable increase in terms of AOR and APR. Appendix Figures 17 and 18 depict the same trend in absolute terms as well. Disaggregated data on Rural Development is not available for federal governments.

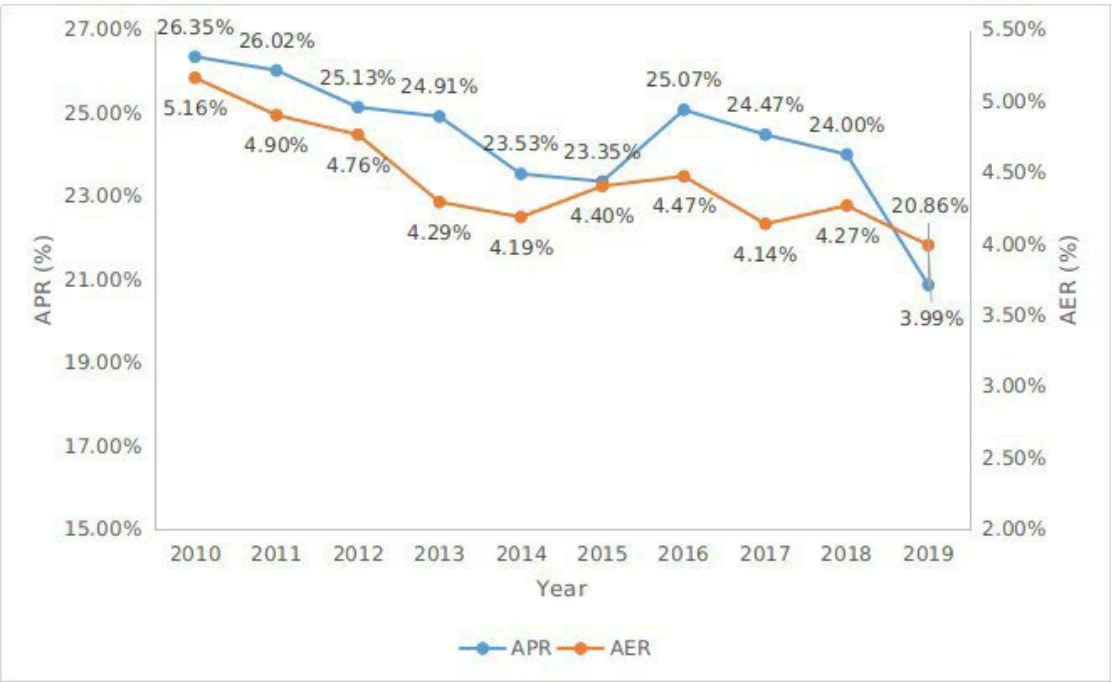
Figure 15 *AOR and AER of Total (Union+Federal) allocation towards Rural Development*

Irrigation

A significant characteristic of public expenditure on agriculture in India post-1991 is the negligence towards irrigation infrastructure. From the functional expenditure data of union budget, we see that both AER and APR for irrigation have increased (Figure 16). But it is to be noted that more than 96 per cent of the expenditure on irrigation are made by State governments. Therefore, only the trend on Union + States government expenditure on irrigation will provide a holistic picture. From Figure 17, we see that both AER and APR for irrigation have seen a decreasing trend over the past decade. Hence, the state government's negligence towards irrigational infrastructure continued during the period of 2010-2020. In absolute terms, there is only a marginal increase in total public expenditure (Union+Sate) towards irrigation. (See Appendix Figure 16.)

Figure 16 *AER and APR for Irrigation (Union Government)*

Figure 17 *AER and APR for Irrigation (Union+Federal Governments)*

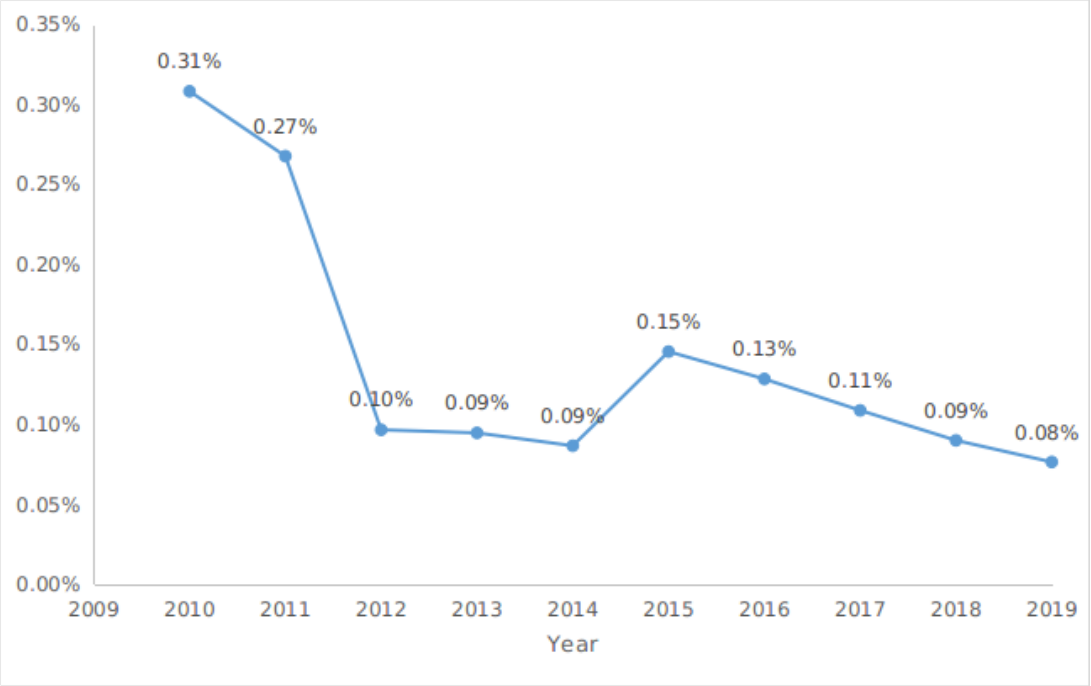


Roads and Bridges

Disaggregated data on public expenditure on Roads and Bridges are available only for the Union Government. Based on this data, we see a significant decrease over the past decade in union government expenditure on schemes related to development of rural roads and bridges as a percentage of total GVA. But as seen from Figure 18, the APR and AER for

total (Union+Federal) government expenditure on Rural Development has seen a nominal rise over the past decade. Due to lack of availability of disaggregated data for federal governments, it is currently not possible to draw conclusions on overall expenditure on rural roads and bridges. But, the possibility of overall rise in AER and APR for rural roads and bridges cannot be ruled out.

Figure 18 *Allocation towards Rural Roads and Bridges as per cent of Total GVA (Union Government)*



VII
CHARACTERISTICS OF PUBLIC SPENDING IN AGRICULTURE

State sovereignty

India was historically less dependent on external aid compared to other developing countries. The contribution of foreign donors to public expenditure on agriculture is shown in Figure 19. As seen in the figure, the share of aid funds, or "international cooperation fund", as mentioned in the budget documents, do not form a significant percentage of Indian agricultural public expenditure. It has remained at less than 0.1 per cent of agricultural public expenditure, and has declined during the past decade. In the last decade, India also became a "emergent donor country" (Agrawal, 2007). "We do not require the aid. It is a peanut in our total development spending," so said the then Finance Minister Pranab Mukherjee in 2012. However, India is still the third largest recipient in terms of gross Official Donor Assistance (ODA). Japan and Germany are the major sources of ODA. As of 2011, India received US$ 396 million for agriculture and food security sector comprising 7.4 percentage share of ODA. We see that, in absolute terms too, the allocation under this head is very small and has been declining. (See Appendix Figure 21.)

Figure 19 *Net ODA received as a percentage of central government expenses*

Source: Development Assistance Committee of the Organisation for Economic Co-operation and Development, Geographical Distribution of Financial Flows to Developing Countries, Development Co-operation Report, and International Development Statistics database.

Figure 20 *AER and APR of expenditure from international fund*

As seen in the previous sections, in the post-liberalisation era, the increased penetration of large private players and the general extension of a pro-market environment have been pursued through gradual withdrawal of the state. The recent Farm Laws enacted by the Government of India, which attracted widespread criticism, has further facilitated the greater presence of multinational corporations in agricultural production and marketing. Foreign "aid funds" have not played a significant role in this arena.

Transformation of agricultural systems

From the previous sections, we learned that the share of public expenditure on fertiliser subsidies have sharply declined during the past decade. In the case of pesticides, the production of almost all pesticides is in the private sector; the government has fully deregulated the prices of pesticides. Thus, public expenditure on pesticides has always been insignificant. Hence, we explored the possibility of any supplementary increase in public expenditure on schemes related to crop diversification, which would assist the cultivators through diverse and better yield generating crop varieties and cultivation practices.

From the Union government schemes, sum of expenditure on schemes categorised as "Seed and Planting Material," "Horticulture and Vegetable Crops," "Plant Protection," "Crop Sciences," "Horticulture science," and "Other Commercial Crops" have been

considered as expenditure on "Crop Diversification." Figure 21 shows the public expenditure on crop diversification schemes of union government. We can infer that the expenditure on crop diversification schemes have been low in terms of AER and APR, and has declined during the last decade. Hence, although share of public expenditure in spheres like synthetic fertiliser subsidies have declined, it has not been supplemented by an increased share of public expenditure allocation on crop diversification. This is also evident from the declining overall expenditure towards crop diversification in absolute terms. (See Appendix Figure 22.)

Figure 21 *AER and APR of expenditure on crop diversification*

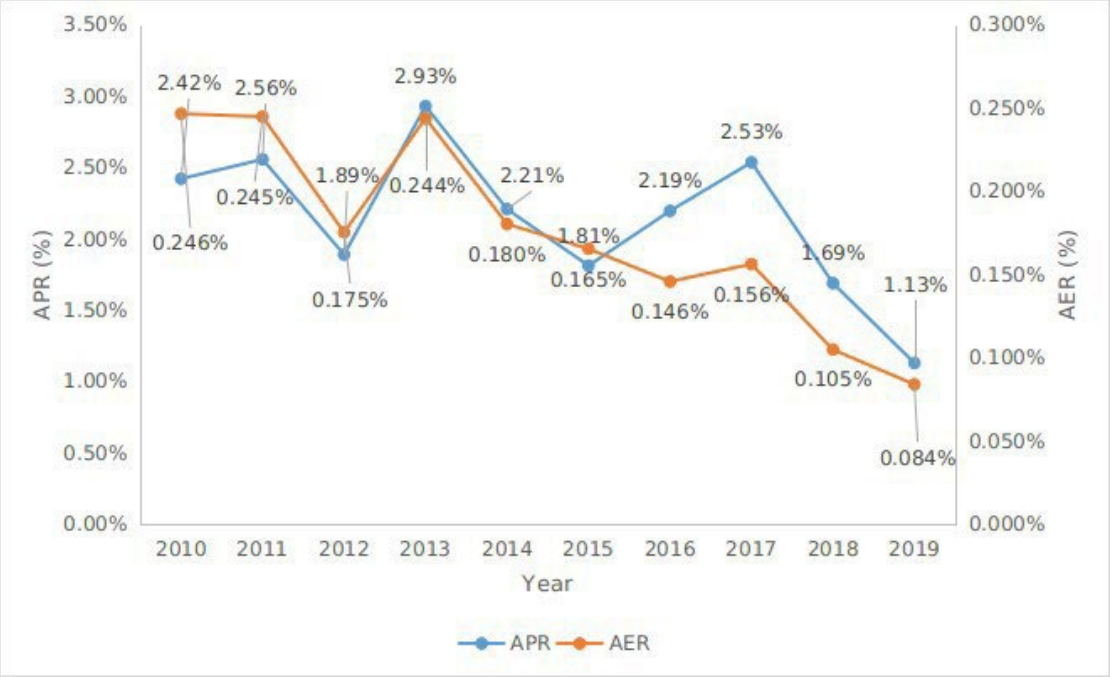


Figure 22 shows the AER and APR of expenditure under "Plant Protection," which is the scheme for expenditure on pesticides. We see the AER and APR to be decreasing over the past decade.

Figure 22 *AER and APR of expenditure on plant protection*

But from Figure 23 we see that AER and APR of sum total of other expenditures on crop diversification (seeds, horticulture, etc.) has also been declining.

Figure 23 *AER and APR of expenditure on crop diversification (excluding plant protection)*

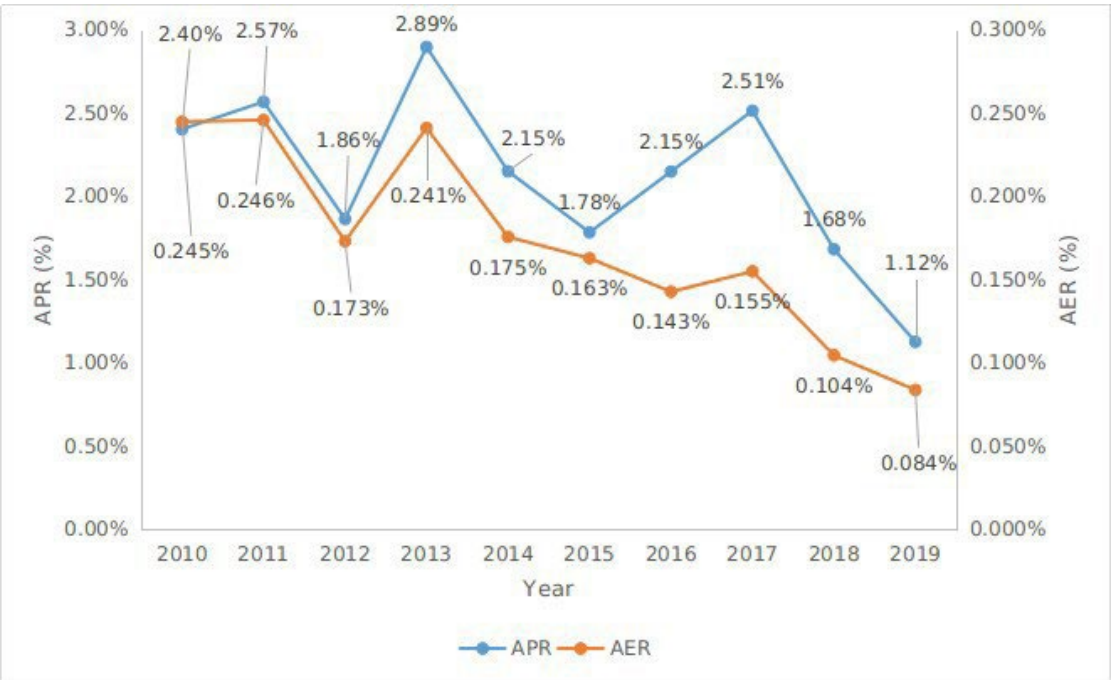


Figure 24 & 25 shows the composition of pesticide usage and intensity of pesticide use in

agriculture (kg per hectare of gross cropped area) during the last decade, which has remained stable and not declining. Hence, we are unable to conclude that the public expenditure of union government is geared towards transforming agriculture.

Figure 24 *Use of Pesticide*

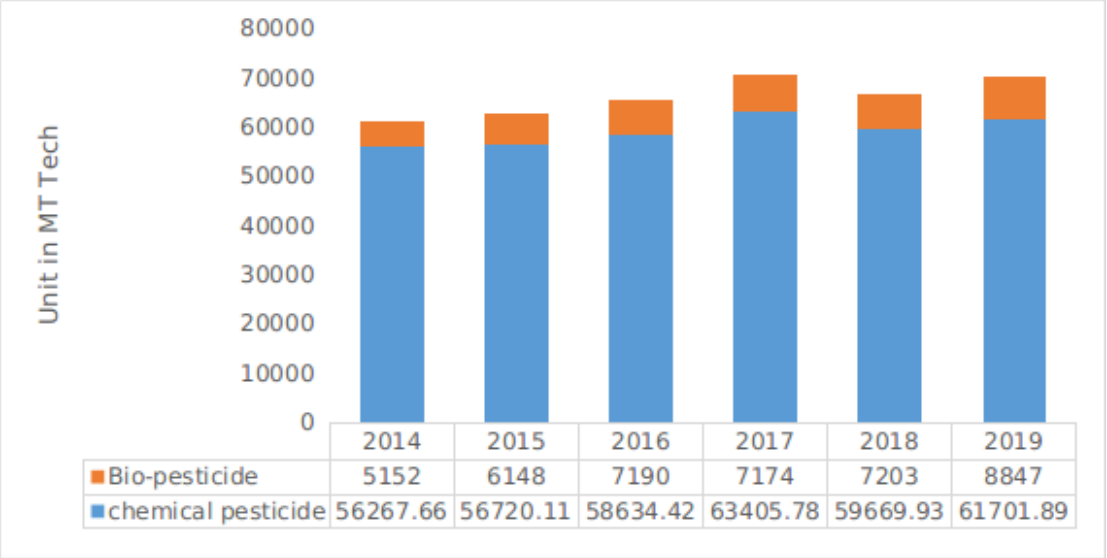
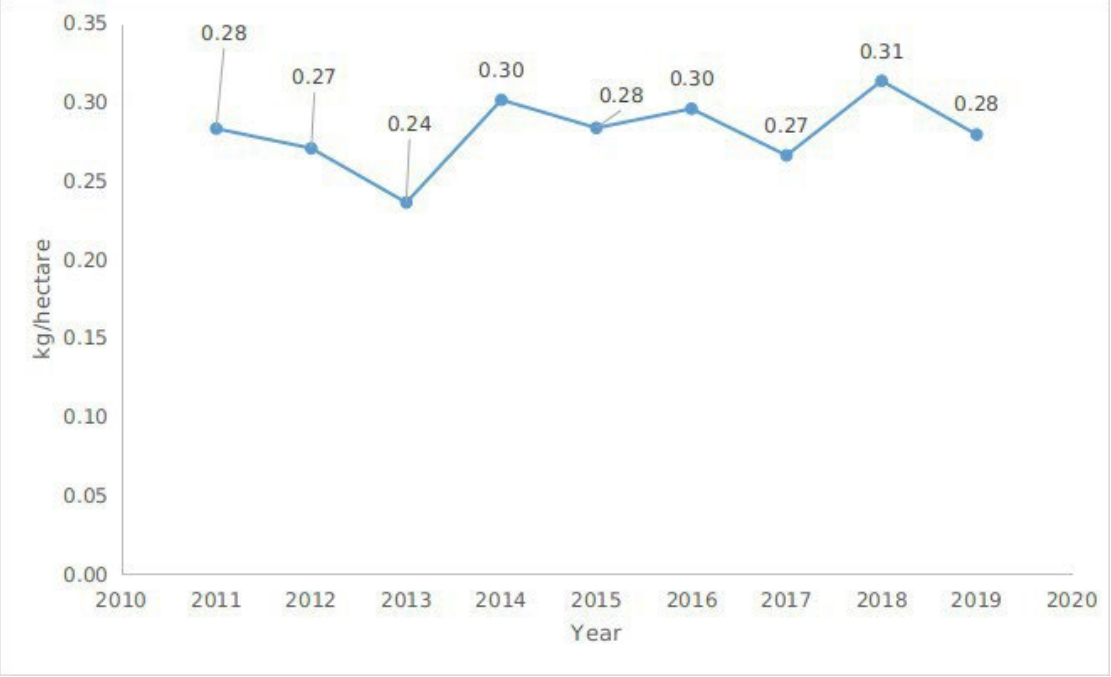


Figure 25 *Pesticide Usage Intensity (kg/hectare)*



Environmental sustainability

We analysed the public expenditure by the Union government on schemes related to alternative and sustainable farming. The sum of Union government expenditure on

schemes categorised as "Organic Farming," "Paramparagat Krishi Vikas Yojana," "Rainfed Area & Sustainable Agriculture," "Natural Resource Management Institutes including Agro Forestry Research," "Climate Resilient Agriculture Initiative," "Soil and Water Conservation Research Institute," and "National Adaptation Fund" have been considered as expenditure on "Alternative Farming."

From Figure 26, we see that the share of allocation to this sphere has been low and stagnant throughout the decade, barring a blip in 2014-15 due to increased allocation towards "Sustainable Agriculture." Despite the recent budget speeches stressing on the importance of alternative farming, it is to be noted that a meager two percent net-sown area in India is under organic farming. This stagnation is evident even in terms of Union government allocation towards alternate farming in absolute terms. (See Appendix Figure 23.)

Figure 26 *AER and APR of expenditure on alternative farming*

Even though the Green Revolution of the 1960s brought self-sufficiency in food production, the ecological cost was high seen from the lens of sustainable agriculture. The cropping area under coarse cereals declined from 40 percent of the total area in the 1950s to around 15 per cent in 2015. At the same time, the area under paddy showed a continuous expansion, and it increased from 34 million hectares during the initial phase of the Green Revolution to 43.39 million hectares in 2015-16.

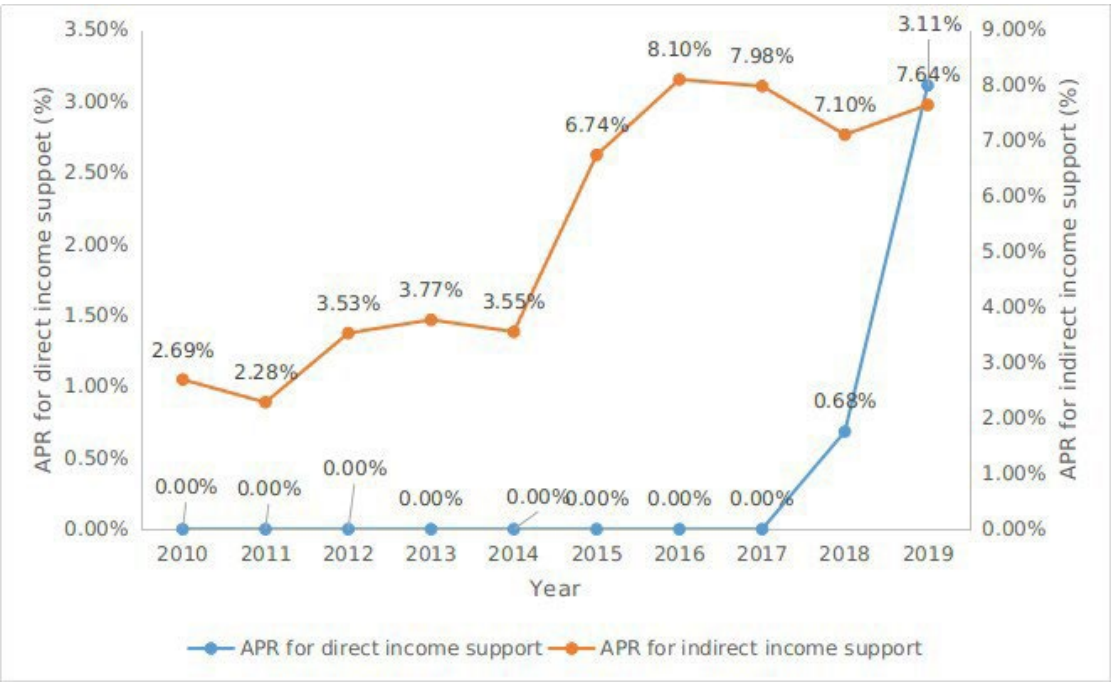
Inclination of policies towards target groups

Public expenditure in India mostly considers the farmers as a homogeneous group due to large section of marginal farmers (around 86 percent), owning 40 per cent of operational land holdings. However, the public expenditure in agriculture has a tendency of supporting farmers by providing credit with an expectation of universal coverage of agricultural households. Interest subvention in this regard was the basic scheme since the nationalisation of the banks in 1969 to help farmers afford rising costs of cultivation. Market stabilisation schemes intend to maintain the realisation of price by the farmers. The Union budget of 2019 identified the lack of institutional accessibility of production-credit by tenant cultivators. The budget intended to provide credit support for tenants. However, no allotment was made towards this in the budget documents. Hence, estimation of the share of budget towards small farmers are not estimable from the Indian budgets.

We analysed the trends in income support schemes in the Union budget. Union government expenditure under PM-KISAN scheme has been considered as expenditure on "Direct Income Support." Expenditure on schemes categorised as "Price Stabilisation Fund," "Market Intervention and Price Support," and "Interest Subsidy" have been considered as expenditure on "Indirect Income Support" (Figure 27). We see an increasing trend in APR for both categories. However, these assistances have come at a time when there has been a reduction in overall share of public expenditure on agriculture and much sharper decline in share of allocations towards real production.

India followed the Gender Responsive Budget (GRB) framework to ensure the gender sensitiveness of the policy. Women farmers are not specifically targeted in the Indian budget. However, women comprise 33 percentage of agricultural labour force and 48 percent of self-employed farmers with only 13 percentage owning agricultural land (IHDS, 2012). Around 5 per cent of the total Indian budget is allotted to women over the last decade with no significant change in terms of share. The schemes of gender budget under 'Ministry of Women and Child Development' which does not have a single scheme for the women farmers or agricultural labourers. Nevertheless, there are some schemes which can be used to check the gender sensitivity of the budget. For example, National Rural Livelihood Mission scheme has a component of social inclusion which targets single and women headed households.

Figure 27 *AER for direct and indirect income support schemes*



Public research and extension services

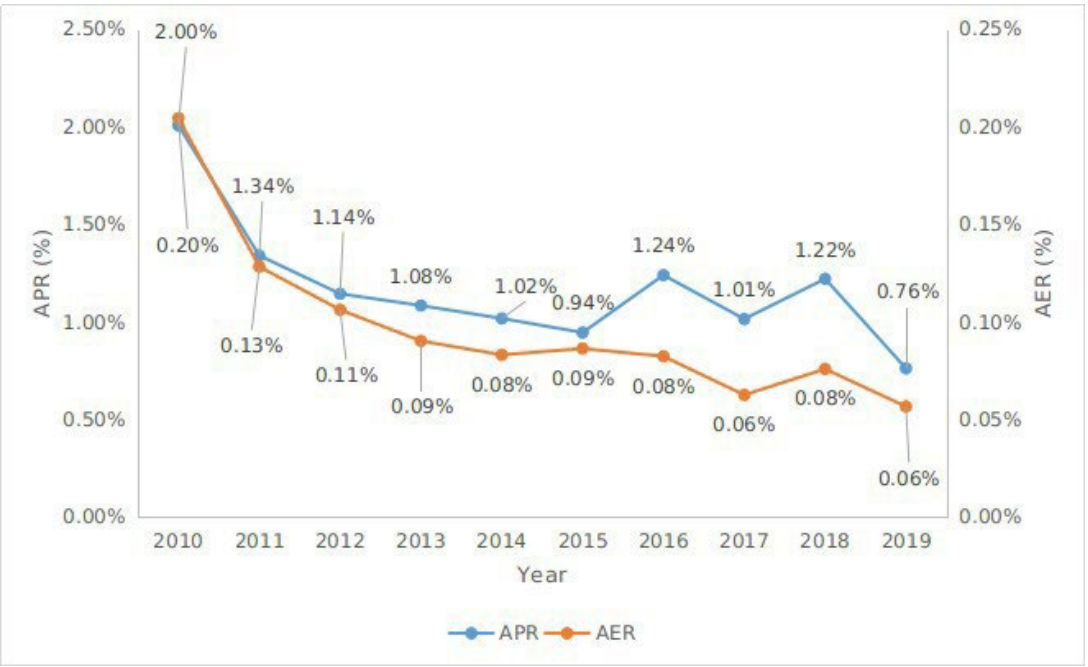
Public research, education and extension services have been the major source of agricultural growth during the post-green revolution period. However, there was a declining share of public expenditure in this area since liberalization.

Several schemes were introduced since the beginning of the last decade concentrated towards farmer's education on both appropriate use of input (seed, fertilisers, and pesticides), and the improvement of mechanisation and information dissemination through innovative methods. But the functionality of extension agents is not efficient and its coverage is still limited. Lack of public investment in infrastructure and transport system results from information asymmetries between research institutes and agents.

In the previous sections, we saw that the overall union government expenditure on agricultural research as a share of total union government expenditure and agricultural GVA has declined in the last decade. We also reviewed the expenditure on agricultural extension. Union government expenditure on schemes categorised as "Agriculture Extension & Training," "Agricultural Extension," "Agricultural Education" have been considered as expenditure on "Agricultural education and extension." Figure 28 shows that the APR and AER for this sphere have also declined in the past decade. The decline is also observed in terms of allocation towards this sphere in absolute terms. (See Appendix Figure

24.)

Figure 28 *AER and APR of expenditure on agricultural education and extension*



VIII

CONCLUSIONS

The prime takeaway from this study is that the share of public expenditure on agriculture is low in comparison to the size of the sector in the overall economy. This public expenditure on agriculture as a share of total public expenditure is also falling. As a result, the overall public expenditure (Union+States) on agriculture as a percentage of agricultural GVA has seen a reduction between 2010-11 and 2019-20, primarily led by sharp fall in union expenditure on agriculture as a share of agriculture GVA. Further, the burden of public expenditure on agriculture has also been transferred from union government to State governments. This phenomenon is taking place at a time when the overall federal structure of India is being gradually eroded through the GST regime and other similar centralizing measures.

Within the agricultural expenditure, the major proportion of expenditure is on crop husbandry and food storage, which have seen a sharp decline in share of expenditure. This is accompanied by an increase in share of public expenditure towards agricultural financial institutions, constituting schemes for credit disbursement and interest subsidy. After a sharp fall led by the decrease in fertiliser subsidy as a percentage of agricultural GVA, a partial revival in share of public expenditure for crop husbandry expenditure in the latter part of the decade is due to a new direct cash transfer scheme. The overall public expenditure (union+States) on irrigation as a share of total public expenditure has also declined over the last decade. In sum, public expenditure in agriculture has moved away from support for direct production towards income support and credit-based assistance.

The overall rural development expenditure has seen an increase in share of total public expenditure and as a share of agricultural GVA. Overwhelming expenditure of union government in this sphere is on the MGNREGS, which has received a stagnating allocation as a share of total public expenditure. Hence, even in this sector, the increase is led by expenditure by State governments.

Another important finding from this study is the decline in public expenditure on agricultural research, and agricultural education and extension as a share of agricultural GVA. This phenomenon is in line with the domestic and global policy in the post liberalisation era.

In addition to these findings, the study also finds out that despite attention towards spending on sustainable farming, the scheme classification over the last decade indicates that in reality, the share of public expenditure towards environmentally sustainable agriculture has remained low and stagnant in the previous decade. Similary, the share of public expenditure on crop diversification has also reduced. The expenditure towards traditional Green revolution indicators is mainly concentrated on fertilizer and seed technology development. The decline in biochemical and infrastructural input subsidies would ultimately only increase the cost of cultivation.

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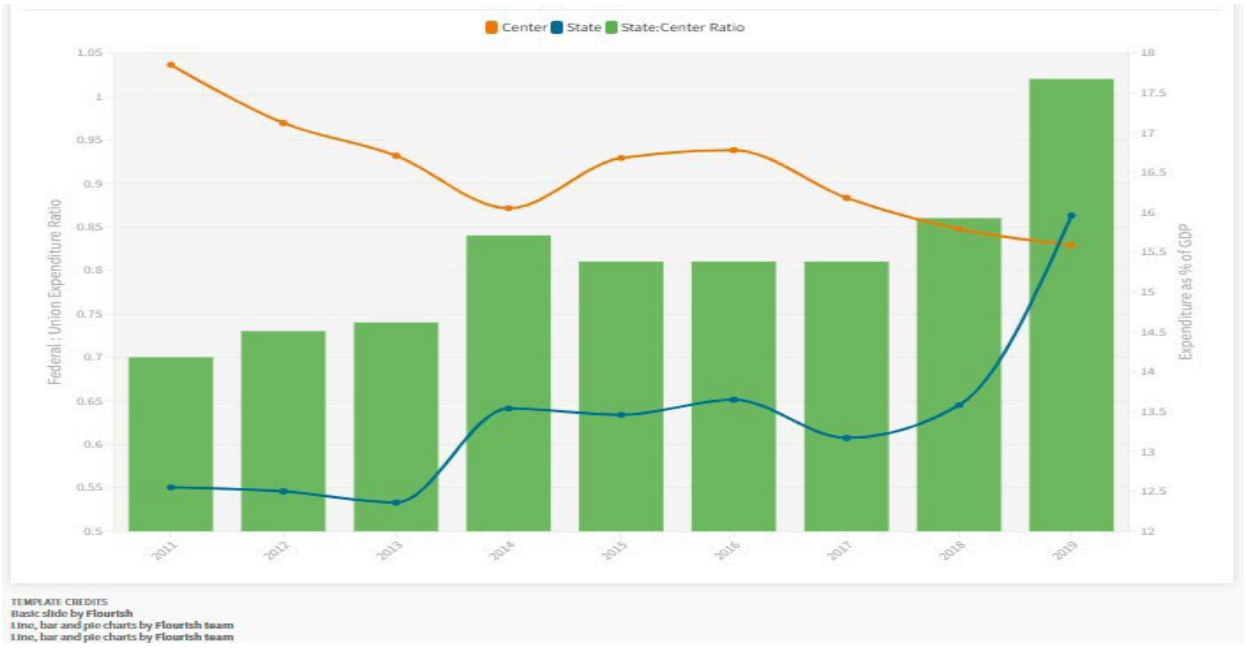
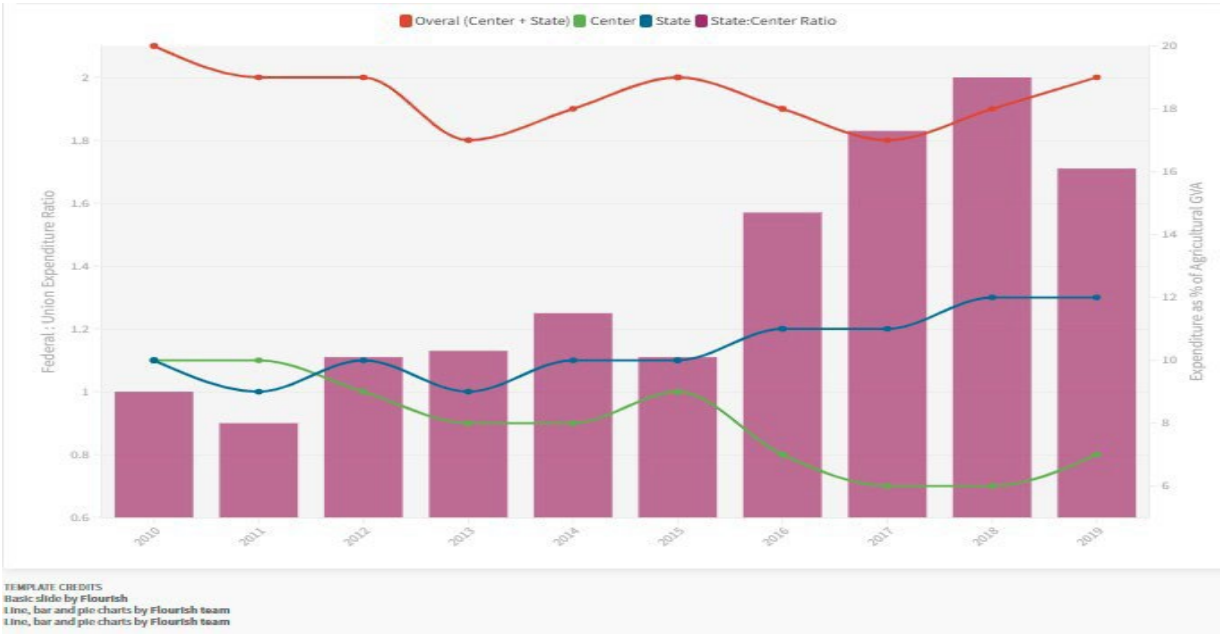
APPENDIX

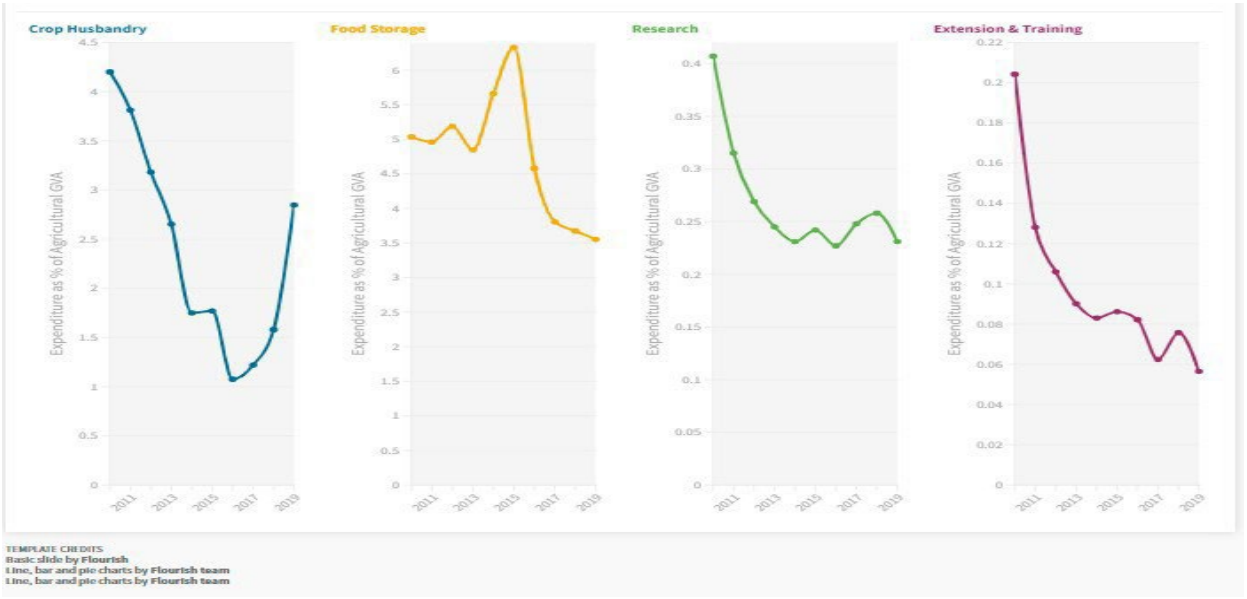
Appendix Figure 1 *Total expenditure burden on Government as a per cent of GDP*



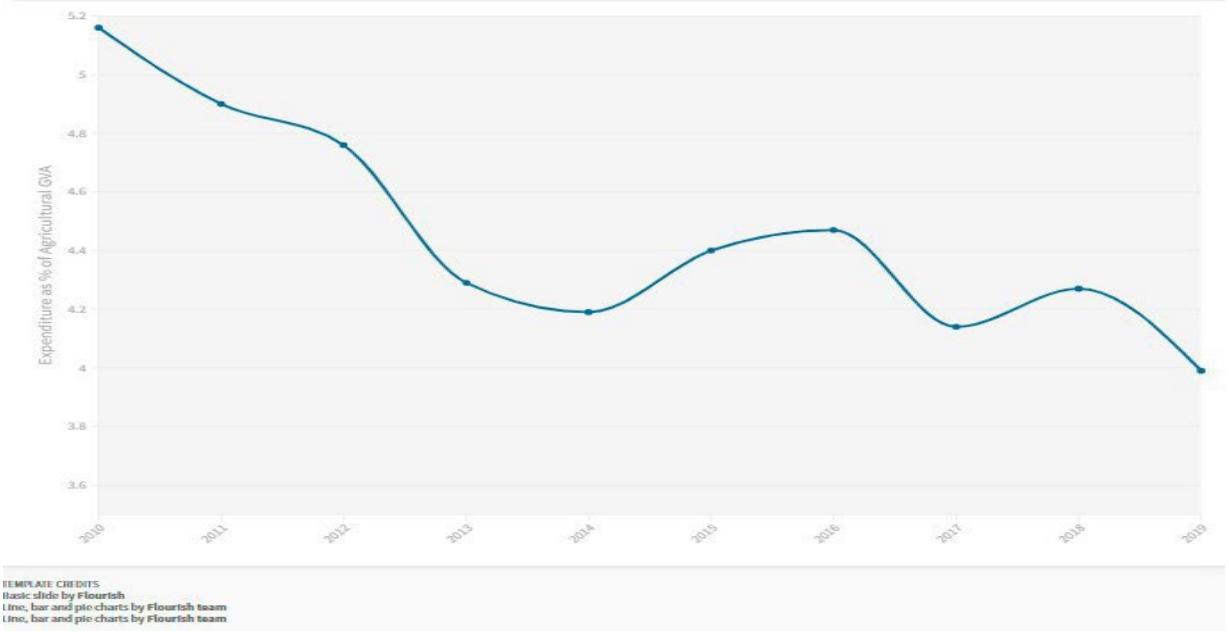
Appendix Figure 2 *Agricultural expenditure as a per cent of agricultural GVA*



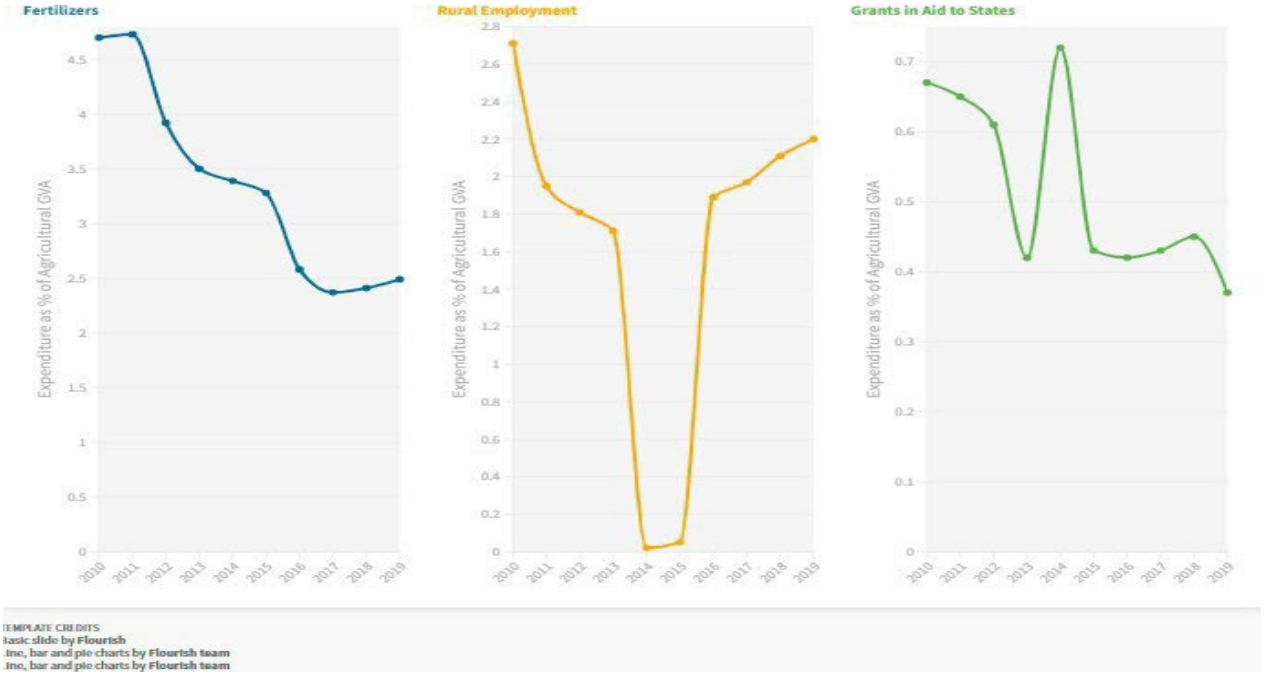
Appendix Figure 3 *Center's expenditure on agricultural production as a per cent of GVA*



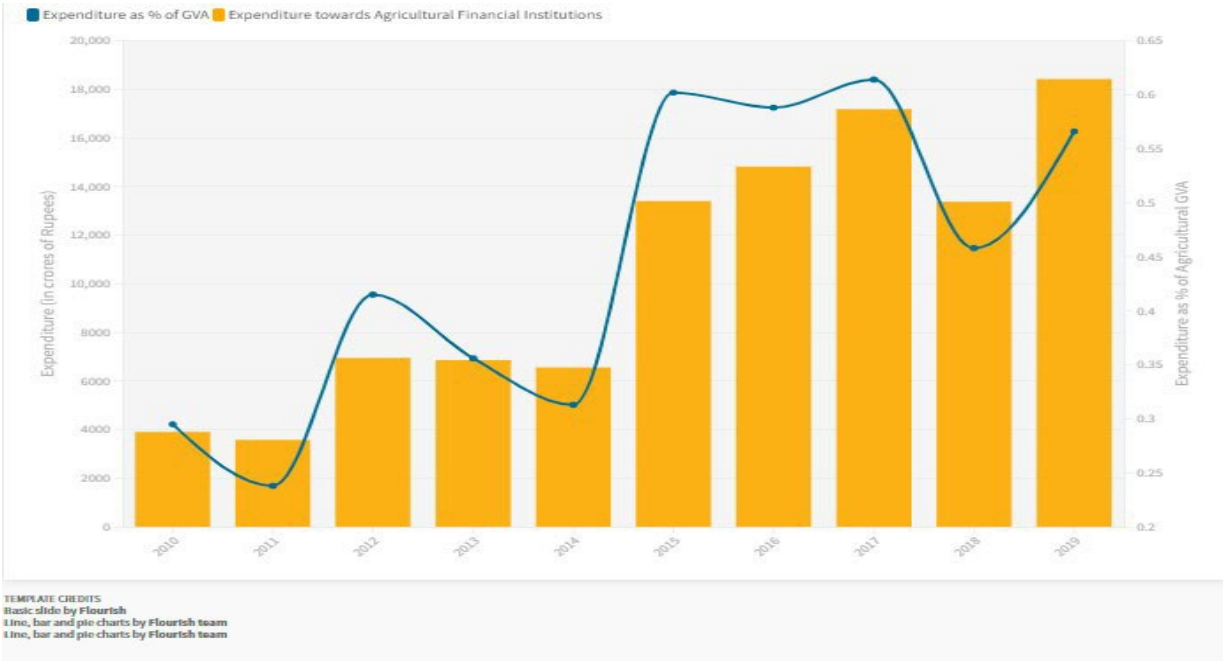
Appendix Figure 4 *Irrigation expenditure- total Central and State Governments (per cent of Agricultural GVA)*



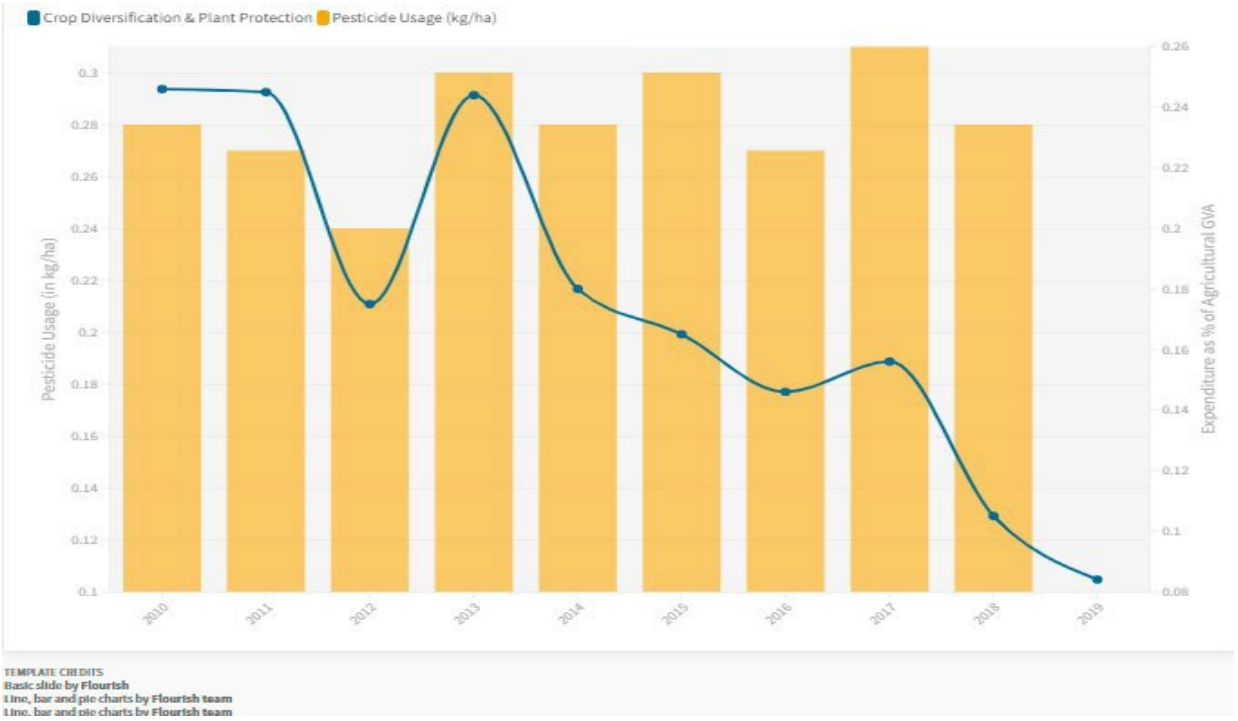
Appendix Figure 5 *Central Government expenditure on subsidies and welfare, as a per cent of agricultural GVA*



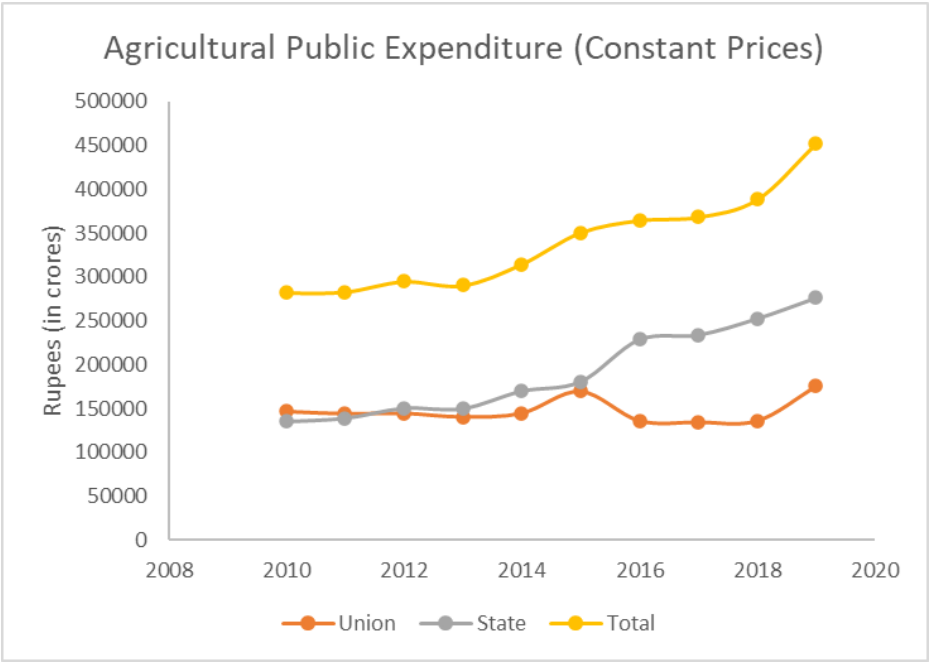
Appendix Figure 6 *Central Government expenditure towards financial institutions (per cent of agricultural GVA)*



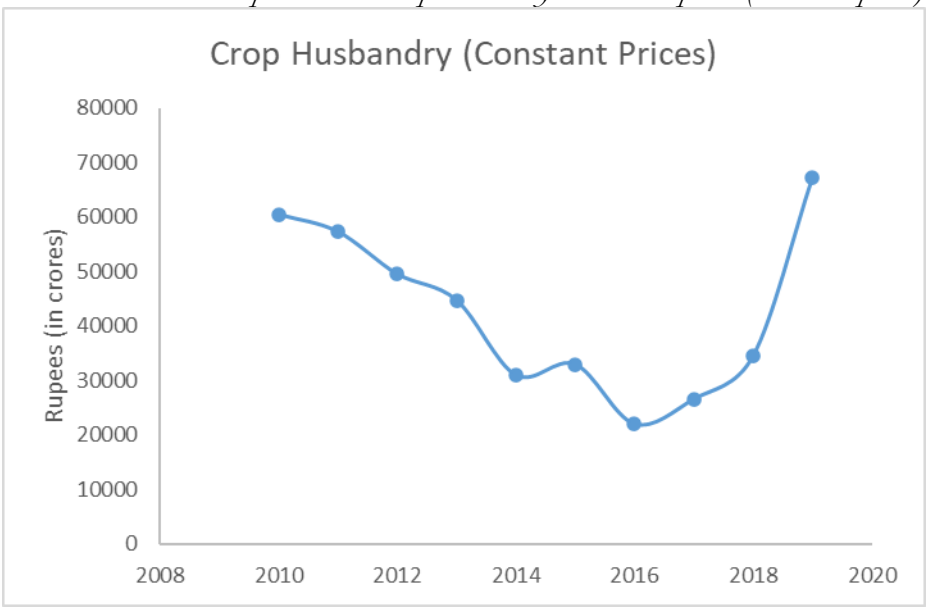
Appendix Figure 7 *Central Government expenditure on transformation of agriculture (per cent of agricultural GVA)*



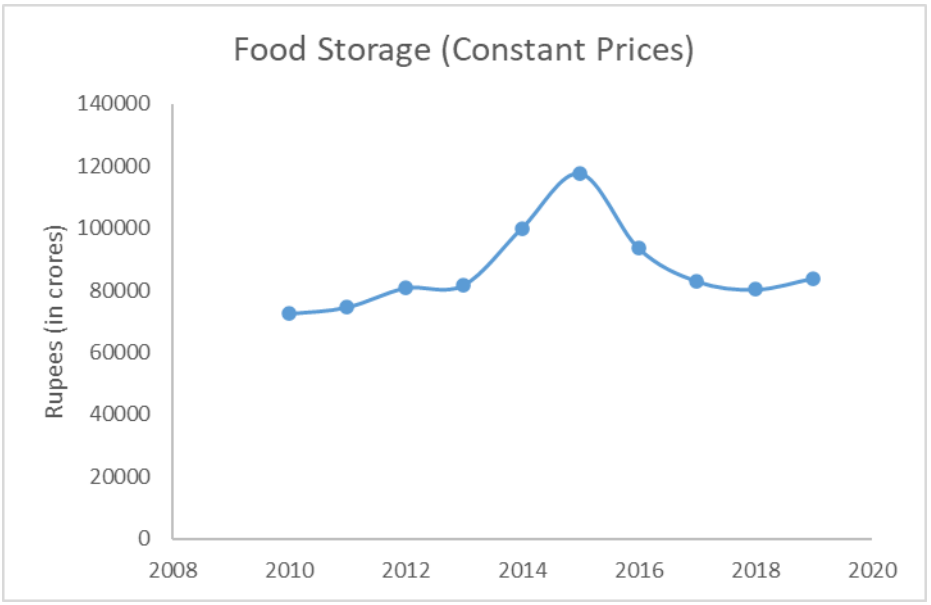
Appendix Figure 8 *Public expenditure on agriculture at constant prices (2011-12 prices)*



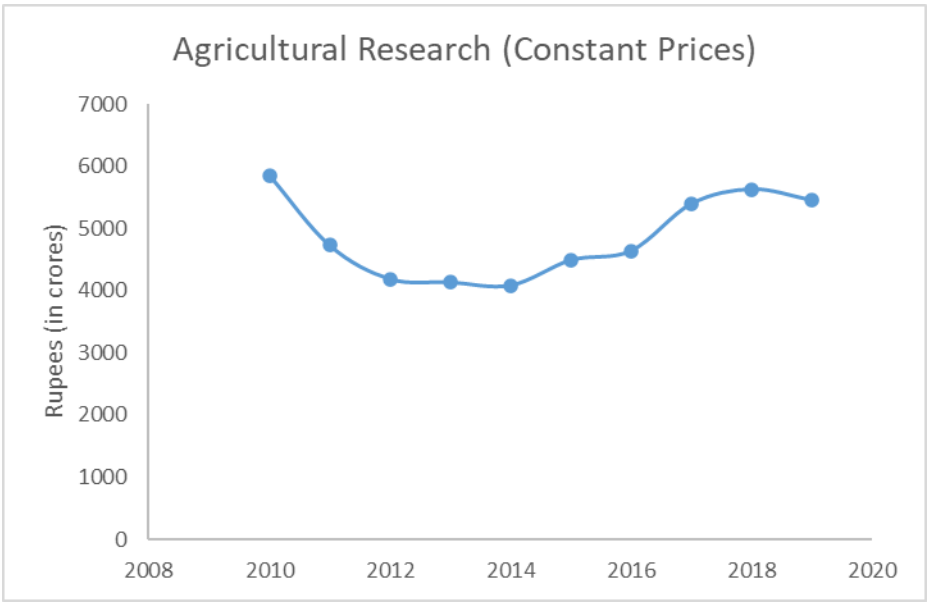
Appendix Figure 9 *Union Govt. Expenditure on crop husbandry at constant prices (2011-12 prices)*



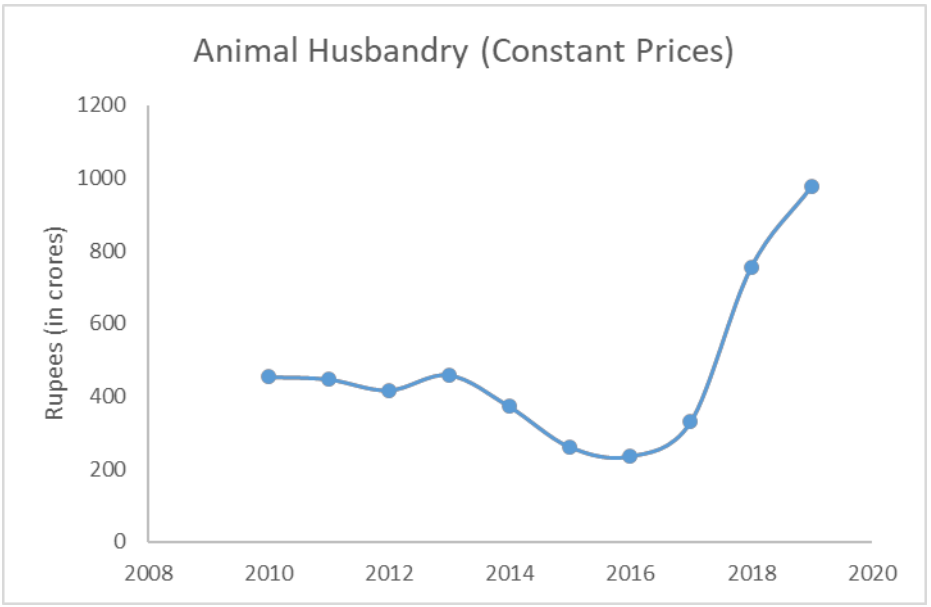
Appendix Figure 10 *Union Govt. Expenditure on food storage at constant prices (2011-12 prices)*



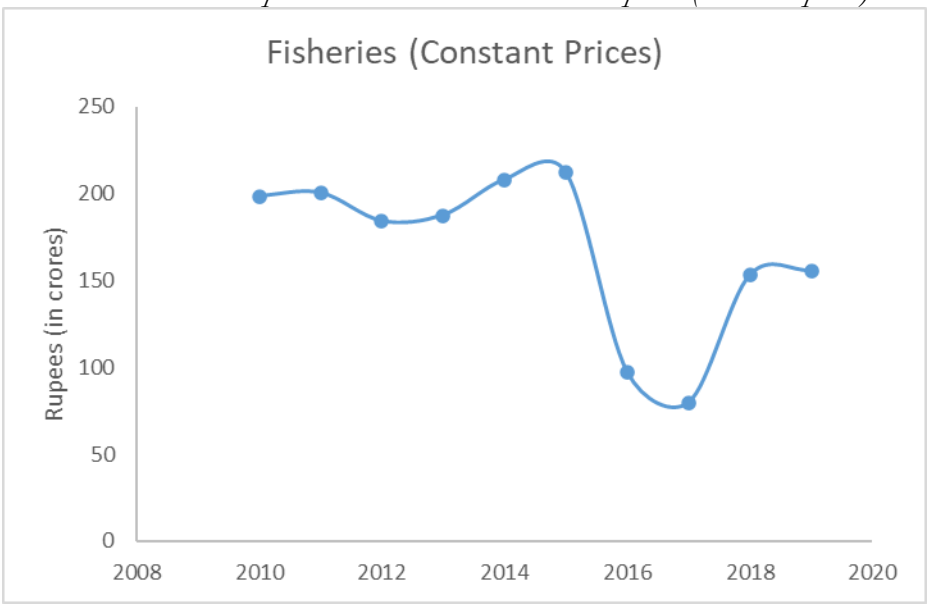
Appendix Figure 11 *Union Govt. Expenditure on Agricultural Research at constant prices (2011-12 prices)*



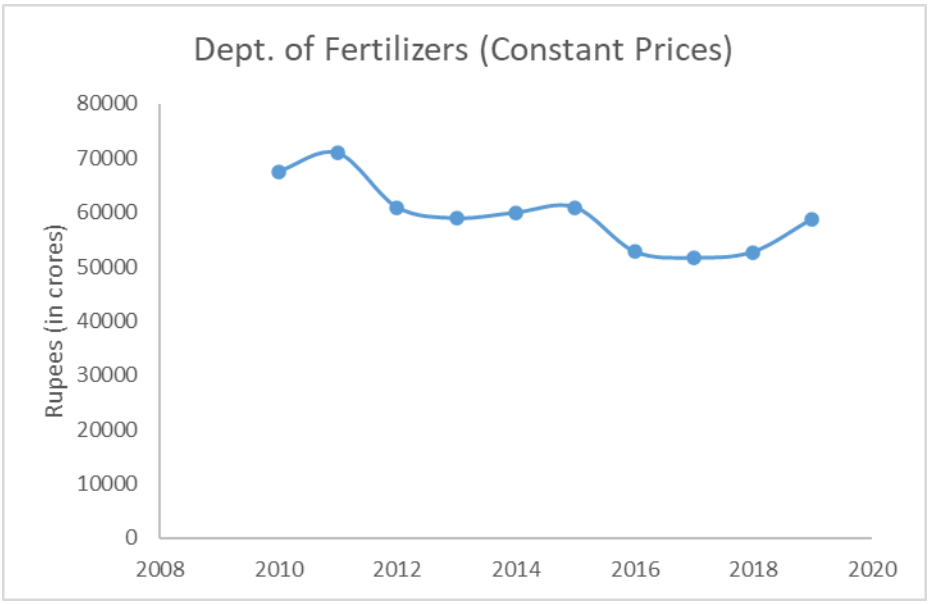
Appendix Figure 12 *Union Govt. Expenditure on Animal Husbandry at constant prices (2011-12 prices)*



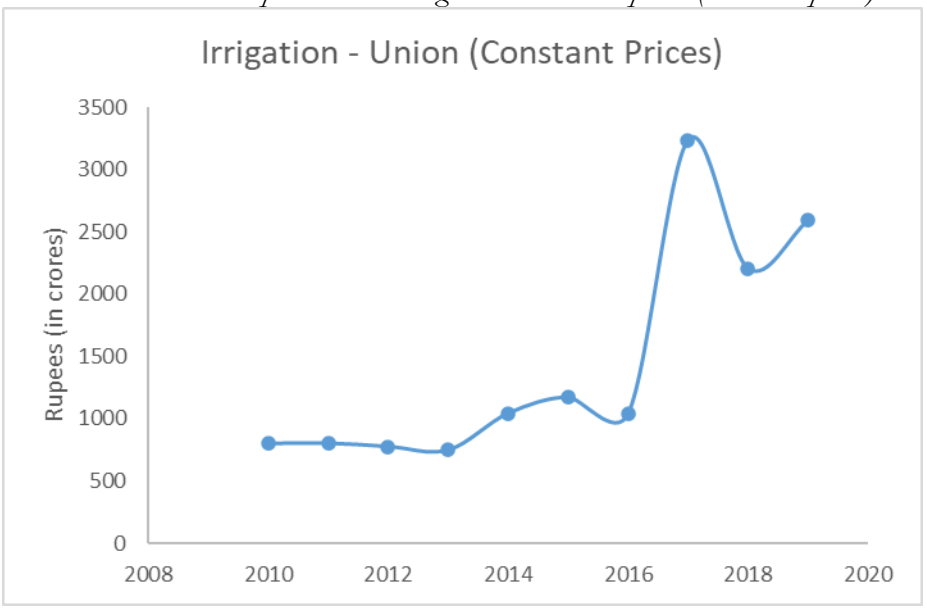
Appendix Figure 13 *Union Govt. Expenditure on Fisheries at constant prices (2011-12 prices)*



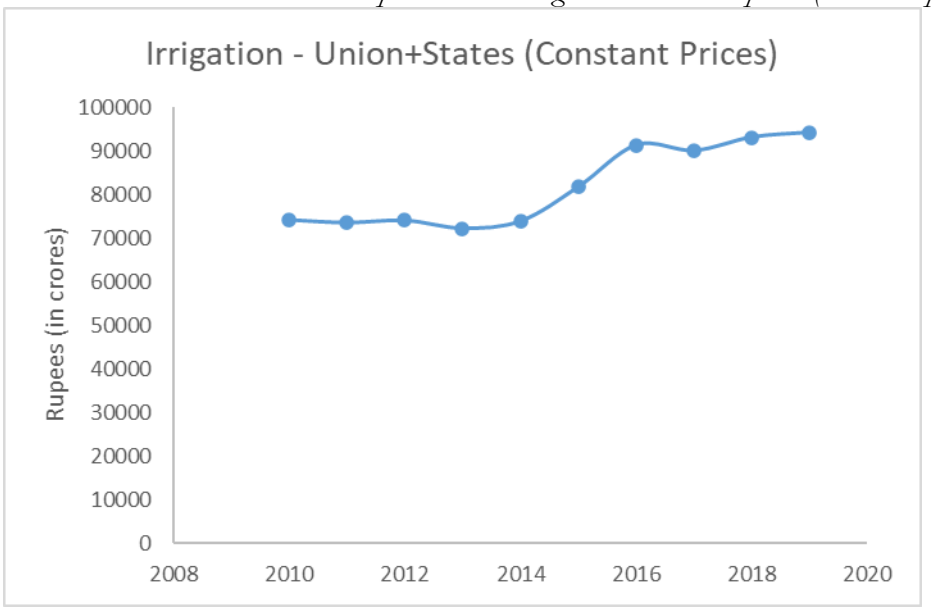
Appendix Figure 14 *Union Budget Allocation towards department of fertilizers at constant prices (2011-12 prices)*



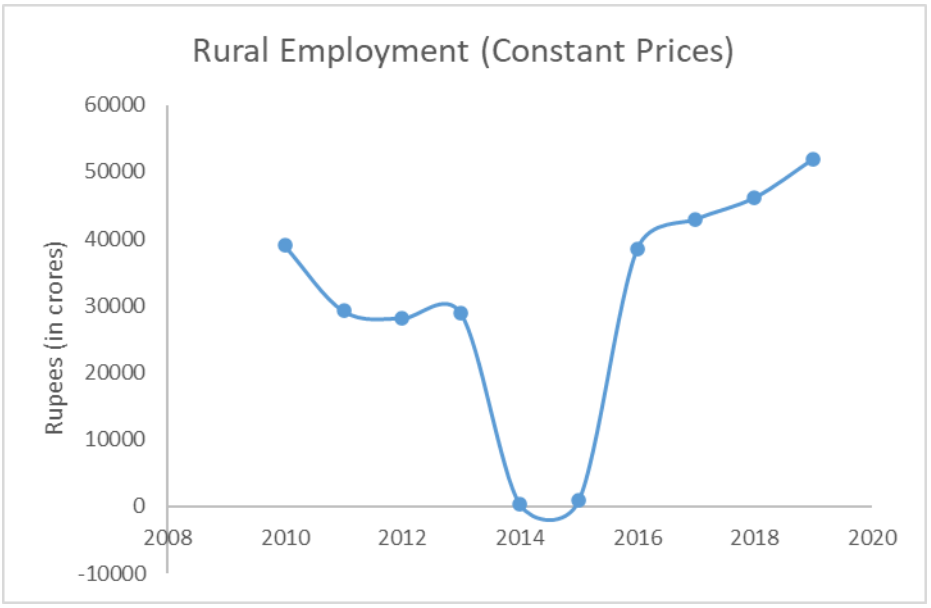
Appendix Figure 15 *Union Govt. Expenditure on Irrigation at constant prices (2011-12 prices)*



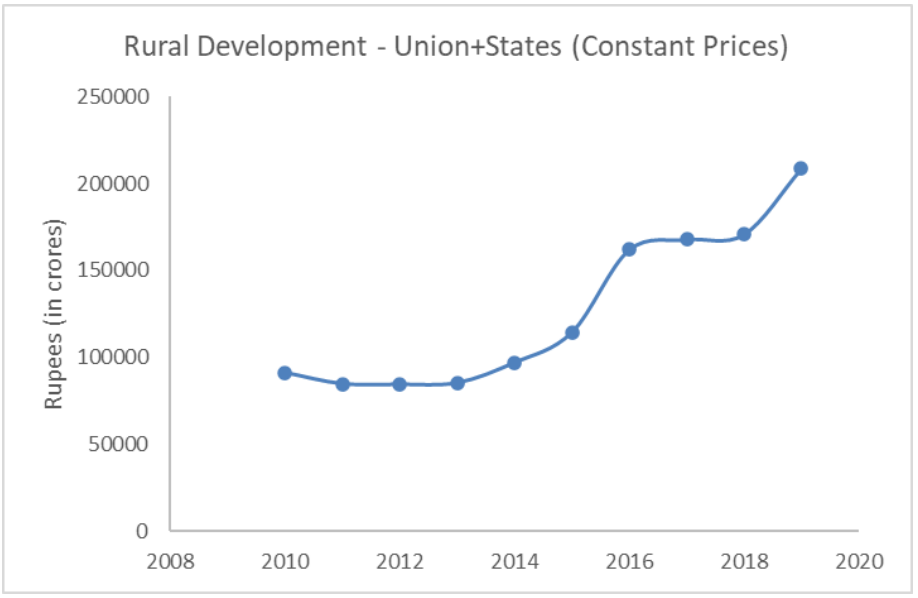
Appendix Figure 16 *Union + Federal Govt. Expenditure on Irrigation at constant prices (2011-12 prices)*



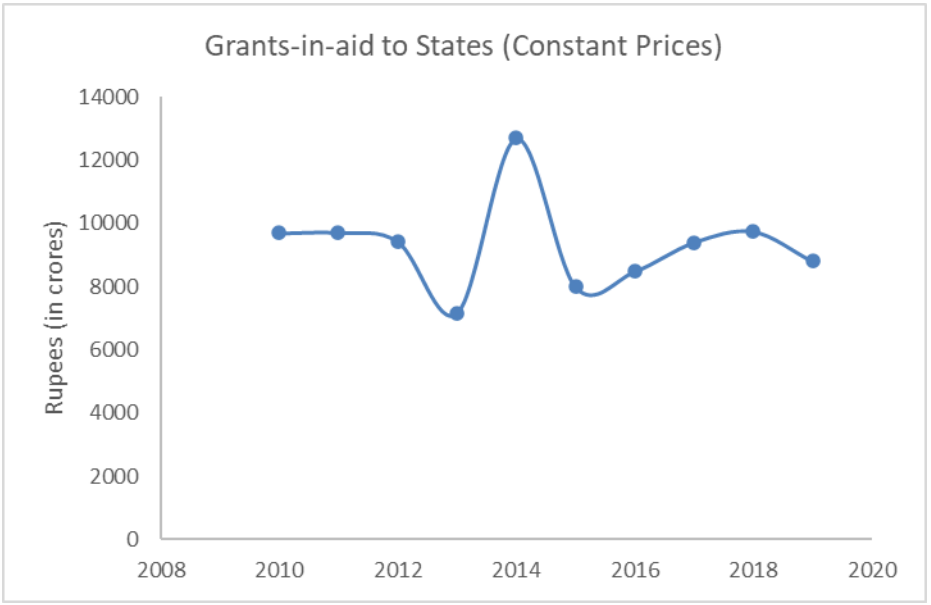
Appendix Figure 17 *Union Govt. Expenditure on Rural Employment at constant prices (2011-12 prices)*



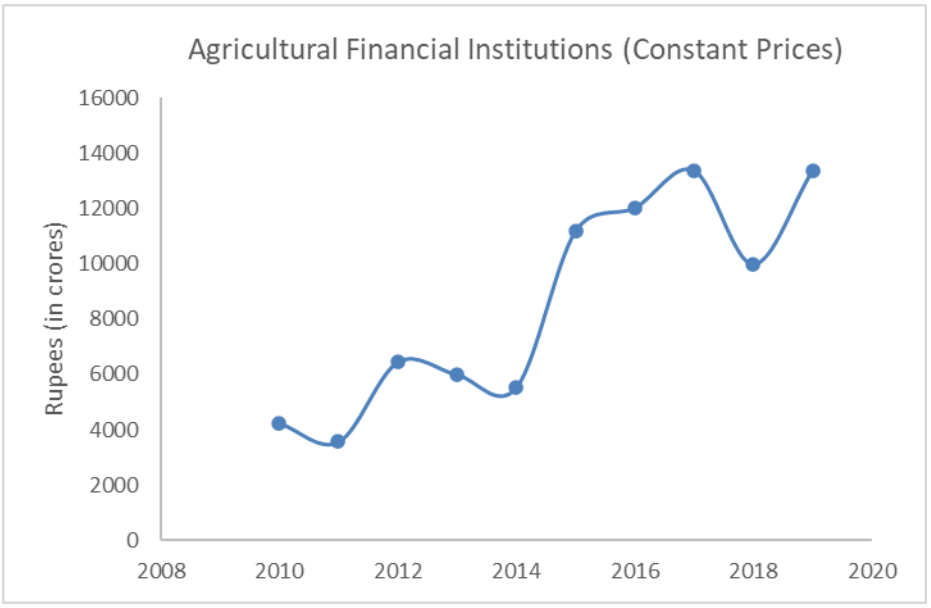
Appendix Figure 18 *Union Govt. Expenditure on Rural Development at constant prices (2011-12 prices)*



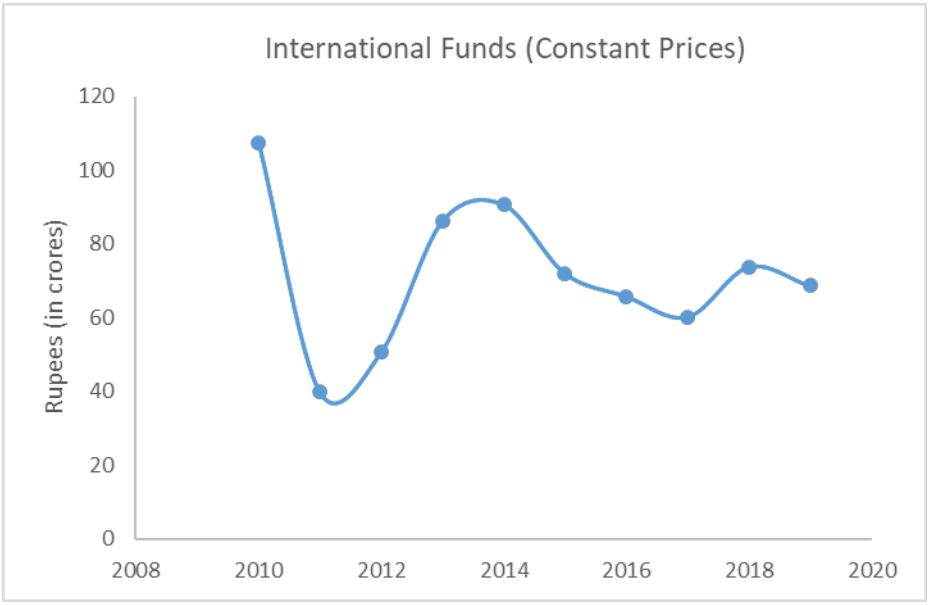
Appendix Figure 19 *Union budget allocation under grants-in-aid to states for agriculture at constant prices (2011-12 prices)*



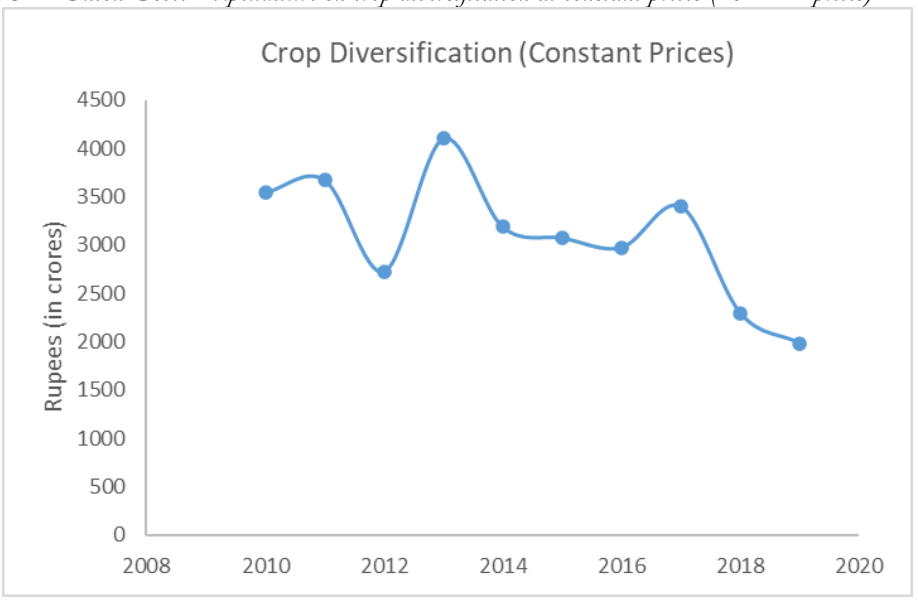
Appendix Figure 20 *Union Govt. Expenditure towards agricultural financial institutions at constant prices (2011-12 prices)*



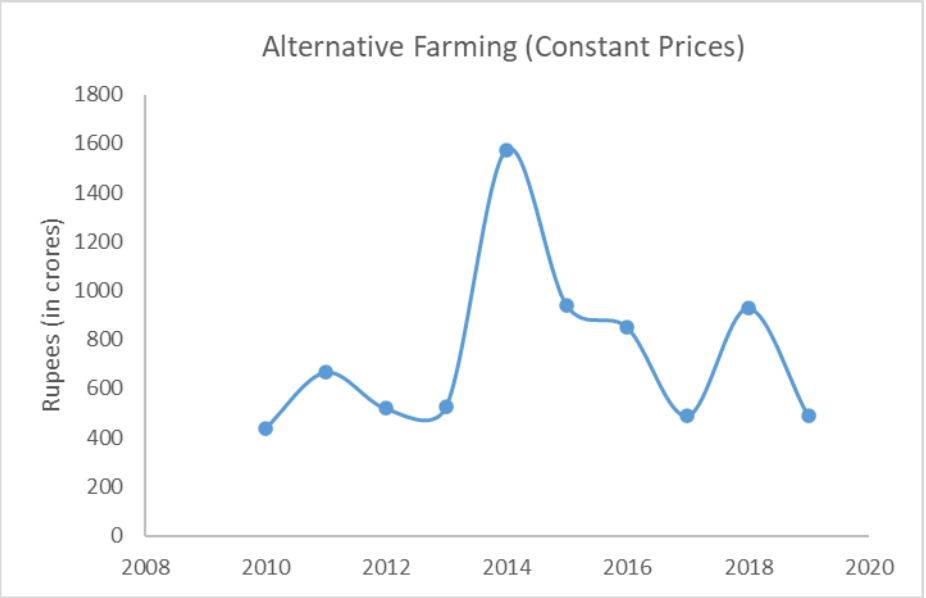
Appendix Figure 21 *Union Govt. Expenditure on agriculture through international funds at constant prices (2011-12 prices)*



Appendix Figure 22 *Union Govt. Expenditure on crop diversification at constant prices (2011-12 prices)*



Appendix Figure 23 *Union Govt. Expenditure on alternative farming at constant prices (2011-12 prices)*



Appendix Figure 24 *Union Govt. Expenditure on agricultural extension and training at constant prices (2011-12 prices)*