

Demand for Grants 2017-18 Analysis

Agriculture, Co-operation and Farmers' Welfare

The Ministry of Agriculture is divided into three departments: (i) Agriculture, Cooperation and Farmers Welfare, which implements programmes and schemes relating to crop husbandry, and manages agriculture inputs, (ii) Agricultural Research and Education, which manages agriculture universities, and promotes research in the sector and (iii) Animal Husbandry, Dairying and Fisheries, which manages the production and development of livestock, dairy and fisheries. This note analyses the expenditure trends and budget proposals of the Department of Agriculture, Cooperation and Farmers Welfare, which accounts for 82% of the Ministry's allocation.

Allocation to the Ministry in 2017-18

The Ministry has been allocated Rs 51,026 crore in 2017-18. The estimated expenditure of the Ministry has increased by 6.1% over the revised estimate in 2016-17 (Rs 48,073 crore). Detailed expenditure of the Departments may be found in the [Annexure](#).

Table 1: Allocation to the Ministry of Agriculture (in Rs crore)

Department	RE 2016-17	BE 2017-18	% change
Agriculture & Co-operation	39,841	41,855	5.1%
Agricultural Research & Education	6,238	6,800	9.0%
Animal husbandry, Dairying & Fisheries	1,994	2,371	18.9%
Total	48,073	51,026	6.1%

RE: Revised estimate; BE: Budgeted estimate.

Sources: Expenditure Budget, Union Budget 2017-18; PRS.

As seen in Table 1, in 2017-18:

- **Department of Agriculture, Co-operation and Farmers Welfare** has seen a 5.1% increase (Rs 2,015 crore) in allocation over the revised estimate of 2016-17. This is mainly on account of a 42% increase (Rs 1,610 crore) in the budgeted expenditure on the Pradhan Mantri Krishi Sinchayi Yojana.
- **Department of Agricultural Research and Education** has a 9% increase (Rs 562 crore) in allocation, over revised estimates of 2016-17. The increase may be attributed to significant increase in allocation to autonomous bodies under the Ministry (such as Indian Council of Agricultural Research and Central Agriculture Universities), of Rs 4,086 crore. At the same time, allocations to crop sciences and animal sciences have been reduced.

- **Department of Animal Husbandry, Dairying and Fisheries** has seen a 18.9% (Rs 377 crore) increase in allocation over the revised estimate of 2016-17. The increase is on account of allocations to the Rasthriya Gokul Mission (Rs 190 crore) and National Livestock Mission (Rs 60 crore).

Departmental Expenditure

The Department of Agriculture, Cooperation (DAC) and Farmers' Welfare has been allocated Rs 41,855 crore in 2017-18. Between 2007-08 and 2017-18, the expenditure of the department increased at an average rate of 18.3% annually. However, expenditure on the Department as a proportion of total expenditure has remained in the same range, increasing from 1.1% to 1.9% over this period.

Table 2 shows the Department's expenditure as a percentage of total expenditure, over the years.

Table 2: Department's expenditure 2007-17 (in Rs crore)

Year	DAC	% increase	Total expenditure	% of total
2007-08	7,814	48.0%	7,12,671	1.1%
2008-09	10,328	32.2%	10,24,487	1.0%
2009-10	11,675	13.0%	11,97,328	1.0%
2010-11	17,245	47.7%	11,97,328	1.4%
2011-12	16,719	-3.1%	13,04,365	1.3%
2012-13	17,953	7.4%	14,10,372	1.3%
2013-14	18,923	5.4%	15,59,447	1.2%
2014-15	19,255	1.8%	16,63,673	1.2%
2015-16	15,296	-20.6%	17,90,783	0.9%
2016-17	39,841	160.5%	20,14,407	2.0%
2017-18	41,855	5.1%	21,46,735	1.9%

RE: Revised estimate; BE: Budgeted estimate.

Note: 2007-08, 2008-09 2016-17: Revised estimate; 2009-10 to 2015-16: Actuals; 2017-18: Budgeted estimate.

Sources: Union budget documents; PRS.

Capital and revenue expenditure

99.8% of the Department's expenditure is estimated to be spent on revenue expenses such as such as subsidies on premiums and interest rates, among other things. 0.2% of the expenditure is estimated to be on capital expenses (Rs 79 crore). Of this, Rs 25 crore is to be spent on land development banks, and Rs 25 crore is to be spent on agricultural mechanisation. Rs 15 crore is to be spent on capital expenses under a seeds and planting material scheme.

Underutilisation of Funds

The Department's actual expenditure over the past few years has been more than 80% of the budgeted expenditure. However, actual expenditure as a percentage of budgeted expenditure decreased from 95.4% to 85%, from 2011-12 to 2014-15. In 2015-16, actual expenditure as a percentage of budgeted expenditure increased to 90%. The Standing Committee on Agriculture has observed that reducing allocations at the revised stage may be a result of slow spending in the first two quarters of the financial year.¹

During 2016-17, the expenditure of the department was 10.7% more than the budget estimates for the year. This was mainly on account of a Rs 7,739 crore increase in the allocation for the Pradhan Mantri Fasal Bima Yojana. The Finance Minister stated that this was in order to settle arrears claims for previous years.² Table 3 shows the trend in allocation and actual estimates of expenditure over the past five years.

Table 3: Departmental expenditure (in Rs crore)

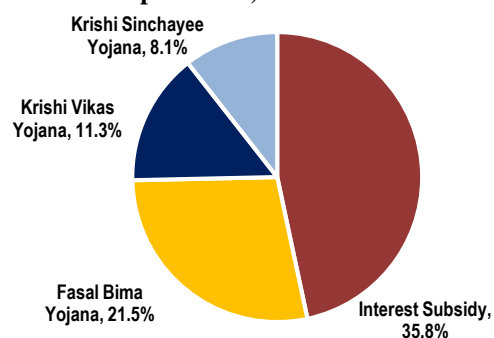
Year	Budgeted	Actuals	% of budgeted
2011-12	17,523	16,719	95.4%
2012-13	20,530	17,953	87.4%
2013-14	21,934	18,923	86.3%
2014-15	22,652	19,255	85.0%
2015-16	17,004	15,296	90.0%
2016-17	35,984	39,841	110.7%

Note: The 'actuals' figure for 2016-17 is a revised estimate.
Sources: Union Budget documents; PRS.

Composition of expenditure

Of the budgeted expenditure of the Department of Agriculture, Co-operation and Farmers Welfare, 77% is proposed to be spent on four schemes, (i) the Interest Subsidy Scheme, for short term credit to farmers, (ii) Pradhan Mantri Fasal Bima Yojana, to provide insurance coverage to farmers, (iii) Rashtriya Krishi Vikas Yojana, to implement state plans for agriculture development, and (iv) Pradhan Mantri Krishi Sinchai Yojana, to increase the coverage of irrigation in the country.

Figure 1: Expenditure on schemes in 2017-18 (as % of total expenditure)



Sources: Expenditure Budget, Union Budget 2017-18; PRS.

Table 4 shows the expenditure on various schemes under the Department.

Table 4: Expenditure on schemes (in Rs crore)

Scheme	RE 2016-17	BE 2017-18	% change
Interest Subsidy Scheme	13,619	15,000	10.1%
Fasal Bima Yojana	13,240	9,000	-32.0%
Krishi Vikas Yojana	3,550	4,750	33.8%
Krishi Sinchayee Yojana	1,990	3,400	70.9%

RE: Revised estimate; BE: Budgeted estimate.
Sources: Union Budget 2017-18; PRS.

Interest Subvention Scheme: In 2017-18, the interest subvention scheme has been allocated Rs 15,000 crore, accounting for 36% of the estimated expenditure of the Department. In 2016-17, Rs 15,000 crore was allocated to the scheme, which was revised down to Rs 13,619 crore. Until 2015-16, this scheme was accounted under the Ministry of Finance. It is now under the Department.

As of December 2016, Rs 4,128 crore had been released to NABARD and Rs 8,431 crore had been released to RBI to settle pending claims. Rs 2,441 crore was left to be spent until March 2017.³

Pradhan Mantri Fasal Bima Yojana: The scheme has been allocated Rs 9,000 crore in 2017-18, a 32% decrease over its allocation in 2016-17 (revised estimate).

The scheme, when it was launched in 2016, subsumed the existing crop insurance schemes: National Agricultural Insurance Scheme (NAIS), the Modified National Agricultural Insurance Scheme (MNAIS) and the Weather-based crop insurance scheme (WBCIS). In 2015-16 (up to December 2015), 181 lakh farmers were covered under the NAIS, 56 lakh farmers under the MNAIS, and 81 lakh farmers under the WBCIS.⁴

In comparison, the Fasal Bima Yojana covered 367 lakh farmers in Kharif season 2016 and 309 lakh farmers in Kharif 2015 season.⁵

Rashtriya Krishi Vikas Yojana: In 2017-18, Rs 4,750 crore has been allocated to this scheme, a 34% increase over the revised estimate of Rs 3,550 crore in 2016-17.

In 2016-17, as of November 2016, 68.7% of the amount allocated to the scheme has been spent by the states.⁶ Under the scheme, district and state agriculture plans are prepared for the development of various aspects under agriculture. The Standing Committee on Agriculture has noted that despite the increase in allocation, only 8 states have formed their state agricultural plans and only 192 district agriculture plans have been prepared, out of 652 districts, under the scheme.¹ It recommended that the Department ensure that all districts and states

comply with the provision of preparing district and state plans.

Pradhan Mantri Krishi Sinchai Yojana: In 2017-18, the Department has been allocated Rs 3,400 crore for the scheme, a 71% increase over the revised estimates of 2016-17. Note that no funds have been provided for capital expenditure under the Department. However, since the scheme is implemented jointly by the Ministries of Agriculture, Rural Development and Water Resources, funds for capital expenses (Rs 1.6 crore) have been allocated under them.

The scheme aims to increase the coverage of area under micro irrigation (sprinkler and drip irrigation). In 2015-16 (up to December 2015), 2.4 lakh ha had been covered under micro irrigation, compared to the target of 4.4 lakh ha.⁴

Policy proposals in Union Budget 2017-18

The following provisions were made for the Ministry in the 2017-18 Budget Speech:²

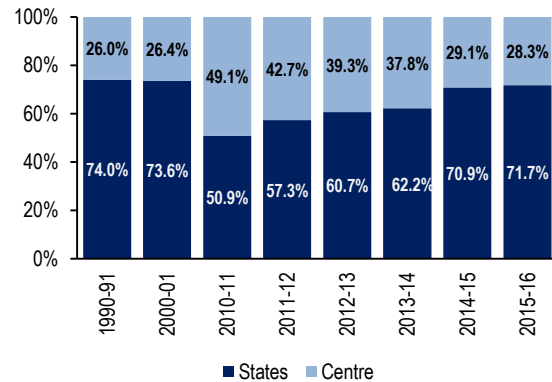
- **NABARD:** A micro-irrigation fund under National Bank for Agricultural and Rural Development (NABARD) will be set up with an initial corpus of Rs 5,000 crore. The long term irrigation fund which was set up under NABARD in 2016-17 has been provided with an additional Rs 20,000 crore in this year.
- **Agricultural credit:** An agricultural credit target of Rs 10 lakh crore has been fixed for 2017-18. This target was Rs 9 lakh crore in 2016-17 and Rs 8.5 lakh crore in 2015-16. In 2015-16, Rs 8.8 lakh crore was given as agricultural credit, and from April-September 2016, Rs 7.6 lakh crore was given as agricultural credit.⁷
- **Crop Insurance:** The coverage of the Pradhan Mantri Fasal Bima Yojana is proposed to be increased from 30% of the cropped area in 2016-17 to 40% in 2017-18, and 50% in 2018-19.
- **Agricultural markets:** Rs 75 lakh is proposed to be provided to each e-National Agricultural Market (e-NAM), and the number of e-NAMs is proposed to be increased from 250 to 585 markets. The e-NAM proposes to create a common electronic platform which provides real time prices for agricultural commodities, by linking state Agricultural Produce Market Committee (APMC) mandis.
- **Dairy processing:** A Dairy Processing and Infrastructure Development Fund is proposed to be set up under NABARD with an initial corpus of Rs 2,000 crore. It will be increased to Rs 8,000 crore over the next three years.

Expenditure by centre and states⁸

Agriculture is a state subject, i.e. both the centre and states make laws regarding it. The central government undertakes broad policy formulation in the sector, while state governments carry on the implementation of schemes.⁹ Most of the expenditure on the sector is carried out by state governments. In 2015-16, of the cumulative expenditure on agriculture, 72% was spent by state governments, while the centre spent 28%.¹⁰

Allocations from the department are devolved to the states for implementation of various schemes. In 2017-18, the government is estimated to transfer Rs 12,048 crore on grants-in-aid to state governments, accounting for 29% of the total departmental expenditure. Details of the expenditure by the centre and states on Agriculture can be found in Figure 2.

Figure 2: Expenditure on Agriculture by the centre and states

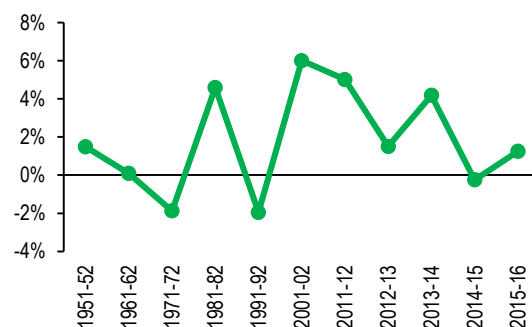


Sources: Indian Public Finance Statistics 2015-16, Ministry of Finance; PRS.

Growth in the agriculture sector

According to the Central Statistics Office, growth in agriculture output is expected to be 4.1% in 2016-17. However, growth has been volatile over the past few years; it was 0.8% in 2015-16, -0.2% in 2014-15 and 4.2% in 2013-14.^{11,12} Annual growth in agriculture over the past few decades is shown in Figure 3.

Figure 3: Agricultural growth (in %)



Sources: Agricultural Statistics at a Glance, 2015; PRS.

Within the agriculture sector, the output of the crop husbandry component declined by 2.2% in 2015-16, and contributed to 9.3% of the GDP. On the other hand, the livestock, fisheries and aquaculture component grew at 6.6%, and contributed to 4.8% of the GDP.

Analysis of agriculture sector

Growth and output of the agriculture sector depend on several aspects such as availability of inputs, access to credit, and pricing and marketing of agricultural commodities. We discuss some key issues regarding these factors below.

Soil health and fertilizers

Imbalance of nutrients in the soil and overuse of certain fertilizers has led to a deterioration of soil quality. There are three major types of nutrients used as fertilizers: Nitrogen (N), Phosphatic (P), and Potassic (K). Of these, the pricing of urea (containing N fertilizer) is controlled by the government, while P and K fertilizers are unregulated. This has led to the price of N remaining low, while P and K increasing over time due to market factors. The Standing Committee on Agriculture observed that urea is used more than the other fertilizers. While the recommended ratio of use of the NPK fertilizers is 4:2:1, this ratio in India is currently at 6.7:2.4:1.¹³ Details of N,P and K fertilizer consumption can be found in Table 10 in the Annexure.

In order to provide farmers with information regarding the quality of their soil, the Soil Health Card scheme was launched in 2015. If farmers are unaware about the kind of fertilizer which is required for the soil in which they sow their crops, the productivity of the soil will be subsequently affected. Under the Soil Health Card scheme, farmers are issued soil health cards, which contain information such as the nutrient status of the soil and the recommended dose of nutrients to be provided to improve its fertility. As of February 2017, 2.9 crore farmers have been covered under this scheme.¹⁴ 2.5 crore soil samples have been collected, and 1.8 crore samples have been tested.¹⁵ The Ministry had set a target of 2.53 crore samples to be collected by March 2017.

Quality of seeds

Quality seeds is another input necessary for agricultural productivity, and good quality seeds account for 20%-25% of increased crop productivity.¹⁶

About 30%-35% of the total seeds available are produced by private and public sector companies, and farm bred seeds account for the remaining seeds.¹⁸ While farmers can develop certain varieties of seeds from the crops harvested on their land, high-yielding varieties of seeds have to be

purchased from the market. The cost of these varieties is too high for marginal and small farmers to afford, thus dis-incentivising them from purchasing these varieties.¹⁷ Some of the challenges identified in the development and distribution of quality seeds are (i) access to quality seeds, and (ii) inadequate research support for the development of seeds.¹⁸

The Economic Survey 2015-16 recommended bringing in more players into the production of seeds, to improve their availability and also reduce their prices.¹⁸ Other recommendations include the creation of seed banks for price stability, creation of storage facilities and promoting domestic production of seeds.¹⁹

Irrigation

As of 2012-13, about 51% of the agricultural area cultivating food grains is covered by irrigation, the rest being dependent on rainfall.²⁰ The area under irrigation consumes about 84% of the total available water in the country.²¹ There is a need to improve the efficiency of water use, especially in agriculture.¹⁷

The Economic Survey 2015-16 stated that farmers should move from flood irrigation to the drip or sprinkler irrigation systems (micro irrigation).²² Micro-irrigation techniques help in conserving water as well as saving on the cost of irrigation. Using micro-irrigation systems (such as drip or sprinkler irrigation) has also been linked to an increase in the yield of crops. Details of micro-irrigation coverage in states may be found in Table 11 in the Annexure.

Agriculture Credit

Agriculture credit refers to the loans advanced to farmers for farming activities. Key issues relating to agricultural credit are unclear land records, skewed ratio between short term and long term agricultural credit, and inadequate access to crop insurance.²³

Access to agricultural credit is linked to the holding of formal land titles. As a result, small and marginal farmers, who account for more than half of the total land holdings, and may not hold formal land titles, are unable to access institutionalized credit.²³ A Reserve Bank of India (RBI) Committee had recommended that credit eligibility certificates, which would act as tenancy/lease certificates should be issued to tenant farmers.²³ These certificates would also enable landless tenant cultivators to obtain agricultural credit.

Farmers may require credit for short term uses such as purchasing inputs, weeding, harvesting, sorting and transporting, or long term uses such as investing in agricultural machinery and equipment, or irrigation. Over the past few decades, the trend

of short term and long term agricultural credit in the country has reversed. From 1990-91 to 2011-12, the share of long term credit decreased from about 75% to 61% (see Table 5).^{24,25} This implies that farmers are taking loans for recurring expenditures rather than to fund long term investments.

Table 5: Short term and long term loans as a % share of agricultural loans

Year	Share of short term loans	Share of long term loans
1990-91	24.9	75.1
2000-01	40.4	59.7
2010-11	54.1	46.0
2011-12	60.7	39.3

Sources: Appendix 1.5, Report of the Internal Working Group to revisit Existing Priority Sector Lending Guidelines, Reserve Bank of India; PRS.

The RBI noted that farmers with land holdings of less than a hectare primarily borrow from informal sources of credit such as moneylenders (41%), whereas those with land holdings of two or more hectares primarily borrow from banks (50% or more).²³ Informal sources of credit are typically offered at higher rates of interests, and may not have proper documentation. Other major sources of agricultural credit include shopkeepers, relatives or friends, and co-operative societies. Details regarding the sources of agricultural credit may be found in Table 14 in the Annexure.

Crop Insurance

As of 2011, about 10% of Indian farmers were covered under a crop insurance scheme.²⁶ Some persistent issues with the crop insurance system include (i) unawareness about insurance schemes, (ii) inadequate coverage of insurance schemes, (iii) assessment of the extent of damages in case of crop losses, and (iv) timely settlement of claims.²⁷

The Standing Committee on Finance has recommended that assessment of crop damage should be completed and compensation should be deposited directly into farmers' accounts in a timely manner.²⁷ In addition, to reduce the seeking of unproductive credit, the government should create awareness about what crops should be grown based on the quality of soil and incidence of rainfall, etc. in different regions.²⁷ In February 2017, the government, through a notification, made the use of Aadhaar mandatory as proof of identity, in order to avail of crop insurance schemes.²⁸

The Pradhan Mantri Fasal Bima Yojana was launched by the central government in January 2016.²⁹ The scheme aims to provide insurance coverage to farmers for crop failure, stabilise farmers' income, and encourage farmers to adopt modern agricultural practices, among others.³⁰ The scheme covers all farmers, including tenant farmers

and sharecroppers, who are growing notified crops in notified areas. The Finance Minister has stated that the government aims to increase the coverage of the scheme from 30% of all farmers in 2016-17 to 40% in 2017-18.²

The 12th Plan Working Group on Agriculture, in its report, observed that crop insurance schemes would be effective only if combined with measures such as soil and water conservation, sustainable agricultural practices and diversification of cropping pattern. The Standing Committee on Agriculture has also pointed out that issues such as (i) discrepancy in the area insured compared to the actual farm area, (ii) availability of weather data to determine damage to crops, (iii) lack of awareness among farmers regarding insurance schemes need to be addressed for schemes to be implemented effectively.³¹

Mechanisation

Mechanisation is the use of machinery or technology in agricultural activities. The status of mechanisation in agriculture varies for different activities, although the overall level of mechanisation is still less than 50%, as compared to 90% in developed countries.³² The highest level of mechanisation (60%-70%) is observed in harvesting and threshing activities and irrigation (37%). The lowest level of mechanisation is found in seeding and planting. To increase productivity, farm equipment which is durable, light-weight, low cost, and also specific to different crops and regions should be made available for small and marginal farmers.³² The Economic Survey 2015-16 recommends that there is also a need for a rental market for agricultural machinery to make it more cost-effective.¹⁸

One of the factors which may be contributing to the low usage of machinery in agriculture is the small size of agricultural land holdings. As per the Agricultural Census of 2010-11, 67% of the land holdings in India were less than 1 hectare.³³ This leads to difficulty in the usage of technology, due to size and capital investment constraints. Table 6 shows the share of agricultural land holdings as a proportion of total agricultural area.

Table 6: Share of agricultural land holdings in total area (%)

Size of holding	1980-81	1990-91	2000-01	2010-11
Marginal (> 1 ha)	56.4%	59.4%	62.9%	67.1%
Small (1-2 ha)	18.1%	18.8%	18.9%	17.9%
Medium (2-10 ha)	23.1%	20.2%	17.2%	14.3%
Large (<10 ha)	2.4%	1.6%	1.0%	0.7%

Sources: Agricultural Statistics at a Glance, 2015; PRS.

Minimum Support Prices (MSPs)

MSPs are the prices at which the central government purchases agriculture commodities from farmers. High MSPs provide incentives to farmers to adopt modern technologies and farming practices, in order to increase the overall productivity of their crops. The government currently announces MSPs for 22 crops (MSPs over the past 10 years may be found in Table 12 in the Annexure).³⁴ Some issues with the implementation of the MSP regime include (i) low awareness among farmers before the sowing season (according to NITI Aayog, 62% of the farmers were informed of MSPs after the sowing season), (ii) long distances to the procurement centres, (iii) increasing cost of transportation for farmers, and (iv) inadequate storage capacity.³⁵

The NITI Aayog noted that the agricultural pricing policy needs to be reviewed to ensure that farmers are receiving remunerative prices for their produce. Farmers are often forced to engage in distress sales, i.e., selling below the MSPs. One of the measures it recommends to assure remunerative prices is a price deficiency system.³⁵ Under such a system, farmers would be compensated for certain commodities if their prices fall under a specified threshold. This would reduce stock-holding by farmers who store commodities until prices increase, and also incentivise farmers to produce different crops. Farmers would be paid by using the direct benefit transfer system, through bank accounts linked to their Aadhaar numbers.

Over the past year, the government has been linking the issuing of welfare benefits to Aadhaar, and ration cards under the PDS are being seeded into Aadhaar System. In February 2017, the government made the use of Aadhaar numbers as identification mandatory, in order to receive food grains under the Public Distribution System.³⁶

¹ 25th Report of the Standing Committee on Agriculture: Demand for Grants 2016-17 of the Department of Agriculture, Co-operation and Farmers Welfare, May 2016, http://164.100.47.193/Isscommittee/Agriculture/16_Agriculture_25.pdf.

² Budget Speech, Union Budget 2017-18, <http://unionbudget.nic.in/ub2017-18/bs/bs.pdf>.

³ Implementation of Budget Announcements 2016-17, Union Budget 2017-18, <http://unionbudget.nic.in/ub2017-18/impbud/impbud.pdf>.

⁴ Outcome Budget 2016-17, Ministry of Agriculture and Farmers Welfare, http://agricoop.nic.in/sites/default/files/Final%20Outcome%20Budget%202016-17_E.pdf.

⁵ Lok Sabha Starred Question no. 196, Ministry of Agriculture and Farmers Welfare, Answered on November 29, 2016.

⁶ Lok Sabha Unstarred Question 2289, Ministry of Agriculture and Farmers Welfare, Answered on November 29, 2016.

⁷ Agricultural Credit overview, Department of Agriculture, Co-operation and Farmers Welfare, <http://agricoop.nic.in/sites/default/files/Agriculture-Credit-Overview.pdf>.

Agricultural Marketing

Agricultural markets in the country are regulated by state Agricultural Produce Marketing Committee (APMC) laws.³⁷ Over the years, several issues have been highlighted in this system, such as market fee being levied on farmers, which makes it expensive for them to sell at APMC mandis. Other costs borne by the farmers include transportation costs from the farm to the mandi, and fees paid to intermediaries as commissions.⁴⁰ Thus the market price which the farmer receives for his produce is significantly lower than the price at which his produce is sold to the retailer.

The central government had released a Model APMC Act in 2003, to be enacted by states.³⁸ The Model Act provides for (i) the direct selling of produce to contract buyers, or markets set up by private players or consumers, (ii) permits farmers and consumers to establish agricultural markets, and (iii) levies a single market fee on the sale of the commodity, among other things. However, only 18 states and union territories have implemented the reforms laid out in the Model Act.³⁹ Four states are yet to initiate the reforms, and the remaining states are at various stages of implementing them. Information regarding states' progress towards APMC reforms may be found in Table 13 of the Annexure.

The Economic Survey 2014-15 recommended that a National Agricultural Market (e-NAM) be created to provide for a national electronic platform on which farmers may sell their produce.⁴⁰ As of December 2016, 250 mandis and 10 states have been integrated with e-NAM. Nine lakh farmers, 59,742 traders and 31,317 commission agents have been registered on the electronic platform.⁴¹

⁸ Demand No. 1, Demand for Grants, Union Budget 2017-18, <http://unionbudget.nic.in/ub2017-18/eb/sbe1.pdf>.

⁹ "Demand for Grants (2015-16)", Ninth Report of the Department Related Standing Committee on Agriculture, http://164.100.47.134/Isscommittee/Agriculture/16_Agriculture_9.pdf.

¹⁰ Indian Public Finance Statistics 2015-16, Ministry of Finance, <http://dea.gov.in/sites/default/files/IPFS%20English%202015-16.pdf>.

¹¹ "Press Note on First Advance Estimates of National Income 2016-17", Ministry of Statistics and Programme Implementation, January 6, 2017, http://mospi.nic.in/sites/default/files/press_release/nad_pm_6jan17.pdf;

"Press Note on Provisional Estimates of Annual National Income 2015-16", Ministry of Statistics and Programme Implementation, May 31, 2016, http://mospi.nic.in/sites/default/files/press_release/nad_press_release_31may16.pdf.

¹² "Press note on First Revised Estimates of National Income, 2015-16", Ministry of Statistics and Programme Implementation, January 31, 2017,

http://mospi.nic.in/sites/default/files/press_release/nad_PR_31jan17.pdf.

¹³ 29th Report: Impact of Chemical Fertilizers and Pesticides on Agriculture and allied sectors in the country, Standing Committee on Agriculture, August 11, 2016, http://164.100.47.134/lssccommittee/Agriculture/16_Agriculture_29.pdf.

¹⁴ Progress Report for states, Soil Health Card scheme website, Department of Agriculture, Co-operation and Farmers Welfare, February 15, 2017, <http://soilhealth.dac.gov.in/PublicReports/StateWiseSampleEnteredTestedSHCPrintedDateFromTo>.

¹⁵ Lok Sabha Unstarred Question no. 755, Ministry of Agriculture and Farmers Welfare, Answered on February 7, 2017.

¹⁶ “Indian seed sector”, Seednet India Portal, Ministry of Agriculture and Farmers Welfare,

<http://seednet.gov.in/Material/IndianSeedSector.htm>.

¹⁷ “Chapter 4: Agriculture: More from less”, Economic Survey 2015-16, <http://unionbudget.nic.in/es2015-16/echapvol1-04.pdf>.

¹⁸ Chapter 5, Agriculture and Food Management, Economic Survey 2015-16, <http://unionbudget.nic.in/es2015-16/echapvol2-05.pdf>.

¹⁹ Task Force on Agricultural Development, NITI Aayog,

http://niti.gov.in/mgov_file/Raising%20Agricultural%20Productivity%20and%20Making%20Farming%20Remunerative%20for%20Farmer%20s.pdf.

²⁰ Pocket Book of Agricultural Statistics, 2015, Ministry of Agriculture and Farmers Welfare, <http://eands.dacnet.nic.in/PDF/Pocket-Book2015.pdf>.

²¹ “Raising Agricultural Productivity and Making Farming Remunerative for Farmers”, NITI Aayog, December 16, 2015,

http://www.niti.gov.in/writereaddata/files/document_publication/RAP3.pdf.

²² Natural Resource Management, State of Indian Agriculture 2015-16, Ministry of Agriculture and Farmers Welfare, May 2016,

http://agricoop.nic.in/imagedefault/state_agri_1516.pdf.

²³ Report of the Committee on Medium-term Path on Financial Inclusion, Reserve Bank of India, December 2015,

<https://rbidocs.rbi.org.in/rdocs/PublicationReport/Pdfs/FFIRA27F4530706A41A0BC394D01CB4892CC.PDF>.

²⁴ Report of the Internal Working Group to Revisit the Existing Priority Sector Lending Guidelines, Reserve Bank of India, March 2, 2015,

<https://rbidocs.rbi.org.in/rdocs/PublicationReport/Pdfs/PSGRE020315.pdf>.

²⁵ Report of the Advisory Committee on Flow of Credit to Agriculture, Reserve Bank of India, May 2004,

<https://rbidocs.rbi.org.in/rdocs/PublicationReport/Pdfs/53525.pdf>.

²⁶ 12th Plan Working Group Report on Natural Resource Management and Rainfed Farming, November 15, 2011.

²⁷ 34th Report: State of rural/agricultural banking and crop insurance, Standing Committee on Finance, August 10, 2016,

http://164.100.47.134/lssccommittee/Finance/16_Finance_34.pdf.

²⁸ S. O. 369 (E), Ministry of Agriculture and Farmers Welfare, e-Gazette of India, February 8, 2017.

²⁹ “Pradhan Mantri Fasal Bima Yojana (PMFBY), Ministry of Agriculture, http://agricoop.nic.in/imagedefault/whatsnew/sch_eng.pdf;

“Cabinet approves New Crop Insurance Scheme – Pradhan Mantri Fasal Bima Yojana”, Press Information Bureau, Ministry of Agriculture, January 13, 2016.

³⁰ Expenditure Budget Volume 2, Department of Agriculture and Co-operation, Ministry of Agriculture and Farmers Welfare, Union Budget 2016-17, <http://unionbudget.nic.in/ub2016-17/eb/sbe1.pdf>.

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³⁶ S.O. 371 (E), Ministry of Consumer Affairs, Food and Public Distribution, e-Gazette of India, February 8, 2017.

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³⁹ Agricultural Prices, Marketing and International Trade, State of Indian Agriculture 2015-16, Ministry of Agriculture and Farmers Welfare, May 2016, http://agricoop.nic.in/imagedefault/state_agri_1516.pdf.

⁴⁰ Chapter 8, “A National Market for Agricultural Commodities – Some Issues and the Way Forward”, Volume 1, Economic Survey 2014-

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⁴¹ “Achievements of Ministry of Agriculture and Farmers Welfare”, Press Information Bureau, Ministry of Agriculture, January 2, 2017.

⁴¹ “Achievements of Ministry of Agriculture and Farmers Welfare”, Press Information Bureau, Ministry of Agriculture, January 2, 2017.

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Annexure

Detailed expenditure tables

Table 7: Allocation to the Department of Agriculture, Co-operation and Farmers Welfare (in Rs crore)

Major head	Actuals 2015-16	Budgeted 2016-17	Revised 2016-17	Budgeted 2017-18	% change from RE 2016-17 to BE 2017-18
Crop Insurance	2,983	5,500	13,240	9,000	-32.0%
Interest subsidy for farmers	0	15,000	13,619	15,000	10.1%
Centrally Sponsored Schemes	11,295	14,900	12,350	17,141	38.8%
Others	985	583	631	714	13.1%
Total	15,263	35,984	39,841	41,855	5.1%

Sources: Union Budget 2017-18; PRS.

Note: *Allocations for interest subsidy were made under the Ministry of Finance before 2016-17.

Table 8: Allocation to Department of Agricultural Research and Education (in Rs crore)

Major Head	Actuals 2015-16	Budgeted 2016-17	Revised 2016-17	Budgeted 2017-18	% change RE 2016- 17 to BE 2017-18
Agriculture Extension	664	756	856	233	-72.8%
Management of Natural Resources	695	776	690	218	-68.4%
Crop Sciences	1,819	2,016	1,942	591	-69.6%
Animal Sciences	1,077	1,247	1,220	388	-68.2%
Agricultural Education	659	744	792	695	-12.3%
Autonomous bodies	463	845	534	4,620	765.5%
Others	10	235	205	57	-72.3%
Total	5,386	6,620	6,238	6,800	9.0%

Sources: Expenditure Budget, Union Budget 2017-18; PRS.

Table 9: Allocation to Department of Animal Husbandry, Dairying and Fisheries (in Rs crore)

Major Head	Actuals 2015-16	Budgeted 2016-17	Revised 2016-17	Budgeted 2017-18	% change RE 2016- 17 to BE 2017-18
National Fisheries Development Board	165.29	192.12	33.81	9	-73.4%
White Revolution	937	1,138	1,312	1,634	24.6%
Blue Revolution	200	247	392	401	2.1%
Others	108	305	256	327	27.8%
Total	1,410	1,882	1,994	2,371	18.9%

Sources: Expenditure Budget, Union Budget 2017-18; PRS.

Other relevant data

Table 10: Consumption N, P, and K fertilizers (in lakh tonnes)

Year	Urea (N)	Phosphatic (P)	Potassic (K)	Total
2004-05	117.1	46.2	20.6	184.0
2005-06	127.2	52.0	24.1	203.4
2006-07	137.7	55.4	23.3	216.5
2007-08	144.2	55.1	26.4	225.7
2008-09	150.9	65.1	33.1	249.1
2009-10	155.8	72.7	36.3	264.9
2010-11	165.6	80.5	35.1	281.2
2011-12	173.0	79.1	25.8	277.9
2012-13	168.2	66.5	20.6	255.4
2013-14	167.5	56.3	21.0	244.8
2014-15	169.4	60.9	25.3	255.8

Sources: Agricultural Statistics at a Glance 2015, Ministry of Agriculture and Farmers Welfare; PRS.

Table 11: Coverage of micro-irrigation in states (in hectares)

State/UT	Drip	Sprinkler	Total	% net sown area covered
Andhra Pradesh	8,34,865	3,28,441	11,63,306	10.5%
Arunachal Pradesh	613	-	613	0.3%
Assam	310	129	439	0%
Bihar	4,610	97,440	1,02,050	1.9%
Chhattisgarh	15,553	2,41,420	2,56,973	5.5%
Goa	965	899	1,864	1.4%
Gujarat	4,11,208	4,18,165	8,29,373	8.1%
Haryana	22,682	5,50,458	5,73,140	16.3%
Himachal Pradesh	291	684	975	0.2%
Jharkhand	6,303	9,919	16,222	2.2%
Karnataka	4,29,903	4,17,005	8,46,908	60.2%
Kerala	22,516	6,948	29,464	0.3%
Madhya Pradesh	1,66,358	1,85,759	3,52,117	17.2%
Maharashtra	8,96,343	3,74,783	12,71,126	8.3%
Manipur	47	30	77	0%
Mizoram	1,727	425	2,152	0.7%
Nagaland	200	5,005	5,205	1.8%
Odisha	18,431	82,147	1,00,578	86.7%
Punjab	30,805	12,161	42,966	11.3%
Rajasthan	1,70,098	15,14,451	16,84,549	38.4%
Sikkim	5,544	2,769	8,313	0.2%
Tamil Nadu	2,90,009	30,436	3,20,445	1.8%
Telangana	25,299	5,293	30,592	39.7%
Tripura	100	392	492	0%
Uttar Pradesh	15,519	21,164	36,683	14.3%
Uttarakhand	696	316	1,012	0.1%
West Bengal	604	50,576	51,180	0.3%
Others	15,500	31,000	46,500	0.9%
All India	33,87,099	43,88,215	77,75,314	5.6%

Sources: Agricultural Statistics at a Glance 2015, Ministry of Agriculture; PRS.

Table 12: MSPs for major crops 2005-2016 (in Rs/quintal)

Crop	2005-06	2010-11	2016-17	% increase 2010-11 to 2016-17	% increase 2005-06 to 2016-17
Paddy Common	570	1,000	1,470	6.6%	9.0%
Jowar Hybrid	525	880	1,625	10.8%	10.8%
Maize	540	880	1,365	7.6%	8.8%
Ragi	525	965	1,725	10.2%	11.4%
Tur (Arhar)	1,400	3,500	5,050	6.3%	12.4%
Moong	1,520	3,670	5,225	6.1%	11.9%
Urad	1,520	3,400	5,000	6.6%	11.4%
Groundnut-in-shell	1,520	2,300	4,220	10.6%	9.7%
Sesamum	1,520	2,900	5,000	9.5%	11.4%
Cotton medium staple	1,760	2,500	3,860	7.5%	7.4%
Cotton long staple	1,980	3,000	4,160	5.6%	7.0%
Wheat	700	1,170	1,625	5.6%	8.0%
Masur	1,535	2,250	3,950	9.8%	9.0%
Rapeseed/mustard	1,715	1,850	3,700	12.2%	7.2%

Note: MSPs include the bonuses declared for certain crops.

Sources: Directorate of Economics and Statistics, Ministry of Agriculture; PRS.

Table 13: Status of APMC reforms in states as of October 2016

State/UT	Fruits and vegetables out of APMC	Taxes on agricultural commodities	Direct selling by producers	e-NAM	Number of markets under NAM
Andhra Pradesh	Not done	7.0%	Yes	Yes	5
Arunachal Pradesh	Not done	2.0%	Yes	No	0
Assam	Done	1.0%	Yes	No	0
Bihar	Not done	0.0%	No	No	0
Chhattisgarh	Partial	2.0%	Yes	Yes	12
Goa	Not done	5.0%	Yes	No	0
Gujarat	Done	5.8%	Yes	Yes	40
Haryana	Partial	10.5%	Yes	Yes	36
Himachal Pradesh	Partial	7.0%	Yes	Yes	7
Jammu and Kashmir	Not done	0.0%	No	No	0
Jharkhand	Not done	5.3%	Yes	Yes	8
Karnataka	Partial	7.5%	Yes	No	0
Kerala	Not done	3.0%	No	No	0
Madhya Pradesh	Partial	2.0%	Yes	Yes	20
Maharashtra	Partial	3.0%	Yes	Yes	0
Manipur	Not done	0.0%	No	No	0
Meghalaya	Done	1.0%	No	No	0
Mizoram	Not done	0.0%	Yes	No	0
Nagaland	Partial	0.0%	Yes	No	0
Odisha	Done	5.5%	No	No	0
Punjab	Not done	13.5%	Yes	No	0
Rajasthan	Partial	2.8%	Yes	Yes	11
Sikkim	Not done	1.3%	Yes	No	0
Tamil Nadu	Not done	5.0%	No	No	0
Telangana	Not done	0.0%	Yes	Yes	44
Tripura	Not done	2.0%	Yes	No	0
Uttar Pradesh	Not done	4.0%	No	Yes	66
Uttarakhand	Not done	9.0%	Yes	No	0
West Bengal	Partial	5.0%	Yes	No	0

Source: Study Report on Agriculture Marketing and Farmer Friendly Reforms Across Indian States, NITI Aayog; PRS.

Table 14: Land holdings and sources of agricultural credit (as of 2013)

Land holding (hectare)	Government	Co-operative society	Bank	Money lender	Shopkeeper/trader	Relatives/friends	Others
0-1	1%	10%	27%	41%	4%	14%	3%
1-2	3%	15%	48%	23%	2%	8%	3%
2-4	2%	16%	50%	24%	1%	6%	2%
4-10	4%	18%	50%	19%	1%	7%	2%
10+	1%	14%	64%	16%	1%	4%	1%

Sources: Table 3.2, Report of the Committee on Medium-term Path on Financial Inclusion, Reserve Bank of India; PRS.