

INDIA: ESTIMATES OF SUPPORT TO AGRICULTURE

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DEFINITIONS AND SOURCES

Table 1. Agricultural Support Estimates / Total Transfers contains country Total Support Estimate (TSE) and derived indicators, which cover all agricultural production, i.e. all agricultural commodities produced in the country. Definitions of basic data sets refer to the specific programmes applied in the country. For the Producer Support Estimate (PSE) and Consumer Support Estimate (CSE), each policy measure is classified according to implementation criteria, which include: the *transfer basis* of support (output, input, area/animal numbers/receipts/income, and non-commodity criteria); whether support is based on *current* or *non-current basis*; whether *production is required* or *not* to receive payment. Each policy measure is also assigned several “labels” indicating additional implementation criteria. “MPS commodities”, which vary across countries, are those for which the market price support is explicitly calculated in Tables 4.1 – 4.20.

Table 2. Breakdown of PSE by Commodity and Other Transfers provides a breakdown of the total PSE into four categories reflecting the flexibility given to farmers regarding which commodity to produce within the various policy measures. These categories are: Single Commodity Transfers (SCT); Group Commodity Transfers (GCT); All Commodity Transfers (ACT); and Other Transfers to Producers (OTP). All data sets in Table 2 come from Tables 1 and 3.1 – 3.21 where definitions are included.

Tables 3.1 – 3.20 Producer Single Commodity Transfers contain producer SCT by commodity, which are calculated for India for the following commodities: wheat, maize, rice (non-basmati and basmati), soybeans, rapeseed, groundnuts, chick pea, other pulses, onions, potatoes, tomatoes, mangoes, bananas, sugar cane, cotton, milk, bovine meat, sheep meat, poultry, eggs, provided that the value of production of that commodity exceeds 1% of the total value of production. In addition, SCT for “other commodities” is also calculated (Table 3.21), which covers transfers *to single commodities other than MPS commodities*. All data sets in the calculation of producer SCT by commodity come from Tables 1 and 4.1-4.21 where definitions are included.

Tables 4.1 – 4.21 contain **Market Price Support (MPS)** and **Consumer Single Commodity Transfers** (consumer SCT) by commodity, calculated for the same set of commodities as **Tables 3.1 to 3.21**. Definitions are provided only for basic data sets from which all the other data sets in this table are derived.

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Definitions of the indicators, criteria for classification of policy transfers included in support estimation, and methods of calculation are contained in [the PSE Manual](#) (*OECD's Producer Support Estimate and Related Indicators of Agricultural Support: Concepts, Calculations, Interpretation and Use*).

TABLE 1. INDIA: Total Support Estimate

Definitions:

I. Total value of production (at farm gate): Total agricultural production valued at farm gate prices, i.e. value (at farm gate) of all agricultural commodities produced in the country [1].

I.1. Of which share of MPS commodities (%): Share of commodities for which MPS is explicitly calculated (in Tables 4.1-4-20) in the total value of agricultural production.

II. Total value of consumption (at farm gate): Consumption of all commodities domestically produced valued at farm gate prices, and estimated by increasing the value of consumption (at farm gate) of the MPS commodities according to their share in the total value of agricultural production $[(II.1) / (I.1) \times 100]$.

II.1. Of which MPS commodities: Sum of the value of consumption (at farm gate prices) of the MPS commodities as indicated in Tables 4.1-4.20.

III.1 Producer Support Estimate (PSE): Associated with total agricultural production, i.e. for all commodities domestically produced [Sum of A to G; when negative, the amounts represent an implicit or explicit tax on producers].

While payment data refer to financial years as in the respective sources, the presentational convention adopted here is to identify a financial year by its first year only (for example, 2000 refers to financial year 2000-01).

A. Support based on commodity output

A.1. Market Price Support: On quantities domestically produced (excluding for on-farm feed use -- *Excess Feed Cost*) of all agricultural commodities, estimated by increasing the MPS for the MPS commodities according to their share in the total value of agricultural production $[(\sum \text{MPS for MPS commodities}) / (I.1) \times 100]$.

A.2. Payments based on output

Scheme for assistance to sugar mills for settlement of arrears to sugar cane farmers

Period of implementation: since 2018

The scheme is implemented in 2018-19 to clear arrears of sugar mainly for the marketing season 2017-18 (but also for previous sugar marketing seasons). A payment of INR 5.5 per quintal (100 kg) of sugar cane crushed and sold to mills is made directly to sugar cane farmers. Source: Payment allocation data from Department of Agriculture, Cooperation and Farmers' Welfare (DACFW), Government of India.

Use of labels: Production limits: NO; Variable payment rates: NO; Input constraints: NO.

Payments are included in SCT for sugar cane.

B. Payments based on input use

B.1. Based on variable input use

Crop Development – RKVY (Rashtriya Krishi Vikas Yojana)

Period of implementation: 2007 ongoing

Totally funded by the central government, RKVY makes funds available for the governments of all states to use at their discretion through, for example, subsidies for many kinds of farm inputs and agricultural materials. While the implementation of these programmes varies widely across states, support is provided mostly for variable input use. Since the diversity of implementation criteria for many different programmes in different states is great, the use of labels is simplified and generalised for each of RKVY components. For Crop Development, the states are free to decide how farmers are supported, but the operational guidelines contain a broad description the parameters that have to be observed. Payments support making High-Yielding Variety (HYV)/certified seeds available to farmers, production of breeder seeds, purchase of breeder seed from institutions such as the *Indian Council of Agricultural Research (ICAR)*, production of foundation seed, production of certified seed, seed treatment, farmers' field schools at demonstration sites, training of farmers, etc. Source: Annual Report of Department of Agriculture, Cooperation and Farmers' Welfare (amount reported is released cost for RKVY). Payments estimated for 2018: payment in previous year multiplied by the mean annual rate of change in 2015-17.

Use of labels: Production limits: NO; Variable payment rates: YES; Input constraints: NO.

Payments are included in GCT for crops.

Horticulture – RKVY (Rashtriya Krishi Vikas Yojana)

Period of implementation: 2007 ongoing

Totally funded by the central government, RKVY makes funds available for the governments of all states to use at their discretion through, for example, subsidies for many kinds of farm inputs and agricultural materials. While the implementation of these programmes varies widely across states, support is provided mostly for variable input use. Since the diversity of implementation criteria for many different programmes in different states is great, the use of labels is simplified and generalised for each of RKVY components. For Horticulture, payments support nurseries, tissue culture labs, sanitary and phytosanitary infrastructure, vermin compost units, etc. Source: Annual Report of Department of Agriculture, Cooperation and Farmers' Welfare (amount reported is released cost for RKVY). Payments estimated for 2018: payment in previous year multiplied by the mean annual rate of change in 2015-17.

Use of labels: Production limits: NO; Variable payment rates: YES; Input constraints: NO.

Payments are included in GCT for crops.

Dairy Development – RKVY (Rashtriya Krishi Vikas Yojana)

Period of implementation: 2007 ongoing

Totally funded by the central government, RKVY makes funds available for the governments of all states to use at their discretion through, for example, subsidies for many kinds of farm inputs and agricultural

materials. While the implementation of these programmes varies widely across states, support is provided mostly for variable input use. Since the diversity of implementation criteria for many different programmes in different states is great, the use of labels is simplified and generalised for each of RKVY components. For Dairy Development, payments support the purchase of tractors fitted with fodder block machine, purchase of milking machines, milk collection centres and infrastructure, setting up cold chain for storing and transporting of frozen semen, etc. Payments under this programme are split 33%-67% between PSE and GSSE. Source: Annual Report of Department of Agriculture, Cooperation and Farmers' Welfare (amount reported is released cost for RKVY). Payments estimated for 2018: payment in previous year multiplied by the mean annual rate of change in 2015-17.

Use of labels: Production limits: NO; Variable payment rates: YES; Input constraints: NO.

Payments are included in SCT for milk.

Distribution of planting material (Oil Palm) – NMOOP (National Mission on Oilseeds and Oil Palm)

Period of implementation: 2014 ongoing

State departments of agriculture or horticulture assist farmers by providing 85% of the cost of planting material. A limit of INR 10 000 per ha applies for the farmer's entire land holding or planting area. Several schemes (Oilseeds production programme; Accelerated maize development programmes; Oil palm development programme; National pulse development project) were consolidated in 2004 into the Integrated Scheme for Oilseeds, Oil Palm and Maize (ISOPOM), which was restructured and renamed as NMOOP in 2014. Source: Correspondence with Department of Agriculture, Cooperation and Farmers' Welfare. Payments estimated for 2018: payment in previous year multiplied by the mean annual rate of change in 2015-17.

Use of labels: Production limits: NO; Variable payment rates: YES; Input constraints: NO.

Payments are included in SCT for XE (non-MPS commodities).

Assistance for cost of cultivation and maintenance during gestation period (Oil Palm) – NMOOP (National Mission on Oilseeds and Oil Palm)

Period of implementation: 2014 ongoing

Payments support farmers at 50% of the cost during gestation period of 3 years with a ceiling of INR 14 000 per ha. Source: Correspondence with Department of Agriculture, Cooperation and Farmers' Welfare. Payments estimated for 2018: payment in previous year multiplied by the mean annual rate of change in 2015-17.

Use of labels: Production limits: NO; Variable payment rates: NO; Input constraints: NO.

Payments are included in SCT for XE (non-MPS commodities).

Inputs to intercropping in oil palm fields (Oil Palm) – NMOOP (National Mission on Oilseeds and Oil Palm)

Period of implementation: 2014 ongoing

Support is provided for 50% of the cost of intercropping in oil palm fields (purchase of seeds, fertilisers, integrated nutrient management, integrated pest management, fertilisation through drip irrigation, tree guards, certain chemicals, etc.) from the first to the fourth year of plantation. The limit is INR 3 000 per ha. Source: correspondence with Department of Agriculture, Cooperation and Farmers' Welfare. Payments estimated for 2018: payment in previous year multiplied by the mean annual rate of change in 2015-17.

Use of labels: Production limits: NO; Variable payment rates: NO; Input constraints: NO.

Payments are included in SCT for XE (non-MPS commodities).

Establishment of new seed garden, maintenance of seed garden, production of sprouts (Oil Palm) – NMOOP (National Mission on Oilseeds and Oil Palm)

Period of implementation: 2014 ongoing

Payments support the establishment of new seed gardens, maintenance of seed gardens, and production of sprouts. A one time payment of up to INR 1 million can be provided for the setting up of a new seed garden of 15 ha by oil palm farmers or associations. Source: Correspondence with Department of Agriculture, Cooperation and Farmers' Welfare. Payments estimated for 2018: payment in previous year multiplied by the mean annual rate of change in 2015-17.

Use of labels: Production limits: NO; Variable payment rates: NO; Input constraints: NO.

Payments are included in SCT for XE (non-MPS commodities).

Seed Component (Oil Seed) – NMOOP (National Mission on Oilseeds and Oil Palm)

Period of implementation: 2014 ongoing

Payments support the production and distribution of foundation seed, distribution of mini-kits (packets of a few kilograms of seed) and seed infrastructure development. Source: Correspondence with Department of Agriculture, Cooperation and Farmers' Welfare. Payments estimated for 2018: payment in previous year multiplied by the annual rate of change in 2015-17.

Use of labels: Production limits: NO; Variable payment rates: NO; Input constraints: NO.

Payments are included in GCT for oilseeds.

Seed Component (Oil Seed) – ISOPOM (Integrated Scheme for Oilseeds, Oil Palm and Maize)

Period of implementation: 2012 and 2013

Payments supported the production and purchase of breeder seed, foundation seed and certified seed. Source: Correspondence with Department of Agriculture, Cooperation and Farmers' Welfare, Government of India.

Use of labels: Production limits: NO; Variable payment rates: NO; Input constraints: NO.

Payments are included in GCT for oilseeds.

Production Inputs (Oil Seed) – NMOOP (National Mission on Oilseeds and Oil Palm)

Period of implementation: 2014 ongoing

Payments support plant protection equipment, chemicals, insecticides, gypsum, supply of nuclear polyhedrosis virus, farm implements, distribution of sprinkler sets, seed storage bins and seed treatment drums to farmers. Source: Correspondence with Department of Agriculture, Cooperation and Farmers' Welfare. Payments estimated for 2018: payment in previous year multiplied by the annual rate of change in 2015-17.

Use of labels: Production limits: NO; Variable payment rates: NO; Input constraints: NO.

Payments are included in GCT for oilseeds.

Production Inputs (Oil Seed) – ISOPOM (Integrated Scheme for Oilseeds, Oil Palm and Maize)

Period of implementation: 2012 and 2013

Payments supported seeds and distribution of gypsum, rhizobium, sprinkler sets, and weedicides to farmers. Source: Correspondence with Department of Agriculture, Cooperation and Farmers' Welfare, Government of India.

Use of labels: Production limits: NO; Variable payment rates: NO; Input constraints: NO.

Payments are included in GCT for oilseeds.

Area Expansion (Oil Palm) – ISOPOM (Integrated Scheme for Oilseeds, Oil Palm and Maize)

Period of implementation: 2004-11

Payments supported input components, including planting material and maintenance costs, for area expansion. Source: Correspondence with Department of Agriculture, Cooperation and Farmers' Welfare, Government of India.

Use of labels: Production limits: NO; Variable payment rates: NO; Input constraints: NO.

Payments are included in SCT for XE (non-MPS commodities).

Nursery raising (Oil Palm) – ISOPOM (Integrated Scheme for Oilseeds, Oil Palm and Maize)

Period of implementation: 2004-08

Payments supported the establishment of nursery and raising new of plants. Source: Correspondence with Department of Agriculture, Cooperation and Farmers' Welfare, Government of India.

Use of labels: Production limits: NO; Variable payment rates: NO; Input constraints: NO.

Payments are included in SCT for XE (non-MPS commodities).

Distribution of Seed – NFSM (National Food Security Mission)

Period of implementation: 2007 ongoing

Payments support farmers' purchase of seed. This includes: hybrids of rice (the lesser of INR 50 per kg and 50% of the cost); hybrids of coarse cereals (INR 50 per kg); rice and wheat varieties less than 10 years old (INR 10 per kg); pulses varieties and coarse cereals varieties less than 10 years old (the lesser of INR 25 and INR 15 per kg, respectively, and 50% of the cost). Source: Correspondence with Department of Agriculture, Cooperation and Farmers' Welfare. Payments estimated for 2018: payment in previous year multiplied by the mean annual rate of change in 2015-17.

Use of labels: Production limits: NO; Variable payment rates: NO; Input constraints: NO.

Payments are included in GCT for crops.

Lime Gypsum and Micro Nutrients – NFSM (National Food Security Mission)

Period of implementation: 2007 ongoing

Payments support up to 2 ha of the target crop per farmer at the lesser of 50% of the cost and the following rates: micronutrients: INR 500 per ha; liming or paper mud of acidic soil: INR 1 000 per ha; gypsum or other sources of sulphur: INR 750 per ha; bio-fertilisers, such as Rhizobium and phosphate solubilising bacteria, in pulses: INR 100 per ha. Source: Correspondence with Department of Agriculture, Cooperation and Farmers' Welfare. Payments estimated for 2018: payment in previous year multiplied by the mean annual rate of change in 2015-17.

Use of labels: Production limits: NO; Variable payment rates: NO; Input constraints: NO.

Payments are included in GCT for crops.

Sprayer/Chemical – NFSM (National Food Security Mission)

Period of implementation: 2007 ongoing

Payments support farmers' purchase of sprayers at the lesser of INR 600 per sprayer or 50% of the cost. Source: Correspondence with Department of Agriculture, Cooperation and Farmers' Welfare. Payments estimated for 2018: payment in previous year multiplied by the mean annual rate of change in 2015-17.

Use of labels: Production limits: NO; Variable payment rates: NO; Input constraints: NO.

Payments are included in GCT for all crops.

Cattle Development

Period of implementation: 2004-14

Payments supported the use of concentrate feed by farmers below-the-poverty-line for rearing female calves, insurance coverage for milk yielding animals, training of volunteers in artificial insemination, and cold storage facilities. Source: Payment data under Department of Agriculture, Cooperation and Farmers' Welfare in Expenditure Budget, Government of India.

Use of labels: Production limits: NO; Variable payment rates: NO; Input constraints: NO.

Payments are included in GCT for livestock.

National Programme for Bovine Breeding

Period of implementation: 2014-16

Payments supported artificial insemination services at farmers' doorstep, breeding inputs in the breeding tracts of important indigenous breeds, and the conservation, development and proliferation of selected indigenous bovine breeds of high socio-economic importance. Payments under this programme are split 50%-50% between PSE and GSSE. Source: Payment data under Department of Animal Husbandry, Dairying and Fisheries in Expenditure Budget, Government of India.

Use of labels: Production limits: NO; Variable payment rates: NO; Input constraints: NO.

Payments are included in SCT for beef (bovine meat).

Feed and Fodder Development

Period of implementation: 2000-15

Payments supported the cultivation of superior variety of fodder for fodder seed, and the development of grassland to encourage farmers to take up perennial fodder cultivation and establish silage-making units. Source: Payment data under Department of Animal Husbandry, Dairying and Fisheries in Expenditure Budget, Government of India.

Use of labels: Production limits: NO; Variable payment rates: NO; Input constraints: NO.

Payments are included in GCT for livestock.

Poultry Development

Period of implementation: 2009-15

Payments supported the strengthening of poultry farms, providing them with inputs, and strengthening feed quality monitoring wing and training. Payments under this programme are split 50%-50% between PSE and GSSE. Source: Payment data under Department of Animal Husbandry, Dairying and Fisheries in Expenditure Budget, Government of India.

Use of labels: Production limits: NO; Variable payment rates: NO; Input constraints: NO.

Payments are included in SCT for poultry.

Sheep and Wool Development

Period of implementation: 2009-15

Payments supported sheep farming, training and breed improvement. Payments under this programme are split 50%-50% between PSE and GSSE. Source: Payment data under Department of Animal Husbandry, Dairying and Fisheries in Expenditure Budget, Government of India.

Use of labels: Production limits: NO; Variable payment rates: NO; Input constraints: NO.

Payments are included in SCT for sheep meat.

National Livestock Mission

Period of implementation: 2014 ongoing

Payments support, for example, greater availability of fodder and feed, promotion of applied research, livestock insurance for farmers, and control and prevention of animal diseases. Payments under this programme are split 50%-50% between PSE and GSSE. Source: Payment data under Department of Animal Husbandry, Dairying and Fisheries in Expenditure Budget, Government of India.

Use of labels: Production limits: NO; Variable payment rates: NO; Input constraints: NO.

Payments are included in GCT for livestock.

Other Programmes for Livestock

Period of implementation: 2000-15

Payments supported a variety of minor livestock programmes. Payments under this programme are split 50%-50% between PSE and GSSE. Source: Payment data from Department of Animal Husbandry, Dairying and Fisheries, Ministry of Agriculture and Farmers' Welfare, Government of India.

Use of labels: Production limits: NO; Variable payment rates: NO; Input constraints: NO.

Payments are included in GCT for livestock.

Oil Seed Production Program

Period of implementation: 2000-15

Payments supported the improvement of quality and variety of seed, pre-sowing treatment, usage of bio-fertilisers, pest and weed control, education of farmers about pest control methods, and field demonstration of production technologies. Payments under this programme are split 50%-50% between PSE and GSSE. Payment data under Department of Agriculture, Cooperation and Farmers' Welfare in Expenditure Budget, Government of India.

Use of labels: Production limits: NO; Variable payment rates: NO; Input constraints: NO.

Payments are included in GCT for oilseeds.

Horticulture and Vegetable Crops

Period of implementation: 2000-08

Payments supported the setting up of new gardens and orchards, planting and seed material, training and demonstration of new technology and mechanisation. Payments under this programme are split 50%-50% between PSE and GSSE. Source: Payment data under Department of Agriculture, Cooperation and Farmers' Welfare in Expenditure Budget, Government of India.

Use of labels: Production limits: NO; Variable payment rates: NO; Input constraints: NO.

Payments are included in GCT for crops.

National Horticulture Mission

Period of implementation: 2005-13

Payments supported in 2005-09 the diversification from traditional crops, extension of appropriate technology, and improved post-harvest management and capacity building. Since 2010, in addition to research, extension and farmer training, financial assistance and subsidies were provided for numerous activities: nurseries for production of seeds and planting materials, infrastructure for production of vegetable seeds, rejuvenating out-of-date plantations, creating water sources and protected cultivation (greenhouses etc.), developing precision farming, setting up post-harvest facilities. In 2014-15, the National Horticulture Mission was subsumed as part of another centrally sponsored scheme, the Mission for Integrated Development of Horticulture (MIDH). Payments under this programme are split 50%-50% between PSE and GSSE. Source: Payment data under Department of Agriculture, Cooperation and Farmers' Welfare in Expenditure Budget, Government of India.

Use of labels: Production limits: NO; Variable payment rates: NO; Input constraints: NO.

Payments are included in GCT for crops.

Horticulture Mission for North-east and Himalayan States

Period of implementation: 2009-13

Payments supported the introduction of improved technology and other productivity-enhancing inputs to production in horticulture across North-east and Himalayan States. In 2014-15, the programme was subsumed as part of another centrally sponsored scheme, the Mission for Integrated Development of Horticulture (MIDH). Payments under this programme are split 50%-50% between PSE and GSSE. Source: Payment data under Department of Agriculture, Cooperation and Farmers' Welfare in Expenditure Budget, Government of India.

Use of labels: Production limits: NO; Variable payment rates: NO; Input constraints: NO.

Payments are included in GCT for crops.

Other Programmes of Crop Husbandry

Period of implementation: 2000-15

Payments supported a variety of minor crop programmes. Payments under this programme are split 50%-50% between PSE and GSSE. Source: Payment data under Department of Agriculture, Cooperation and Farmers' Welfare in Expenditure Budget, Government of India.

Use of labels: Production limits: NO; Variable payment rates: NO; Input constraints: NO.

Payments are included in GCT for crops.

Macro Management of Agriculture

Period of implementation: 2000-12

Payments supported the distribution of hybrid or high yielding seeds, micronutrients, bio-fertilisers, bio-pesticides, hybrid seeds, mini-kits, training through farmers' field schools, skill development and extension activities to facilitate crop production. Payments under this programme are split 50%-50% between PSE and GSSE. Source: Payment data under Department of Agriculture, Cooperation and Farmers' Welfare in Expenditure Budget, Government of India.

Use of labels: Production limits: NO; Variable payment rates: NO; Input constraints: NO.

Payments are included in ACT.

Irrigation Subsidy

Period of implementation: 2000 ongoing

Governments bear the costs of operating and maintaining government irrigation systems. Users of surface water pay less than these costs for water. The irrigation subsidy is revenue expenditure under the heading Irrigation and Flood Control (includes Major and Medium Irrigation, Minor Irrigation, and Flood Control and Drainage) less revenue receipts under the headings Major and Medium Irrigation Projects and Minor Irrigation. Source: This data is reported, respectively, in Appendix II (Revenue Expenditure of States and Union Territories with Legislature – All States) and Appendix I (Revenue Receipts of States and Union Territories with Legislature – All States) in State Finances: A Study of Budgets of (various years), Reserve Bank of India
<https://rbi.org.in/Scripts/AnnualPublications.aspx?head=State%20Finances%20:%20A%20Study%20of%20Budgets>. Data for the last three years refers to revised estimates and budget estimates. Note: capital expenditure on irrigation is a component of Hydrological infrastructure in GSSE.

Use of labels: Production limits: NO; Variable payment rates: NO; Input constraints: NO.

Payments are included in GCT for crops.

Electricity Subsidy

Period of implementation: 2000 ongoing

The electricity subsidy is estimated from the difference between average tariffs for power per unit supplied to agriculture and the unit cost of power supply to all consumers, including agriculture. This difference is multiplied by the apparent supplies for agricultural operations, which is assumed to equal 70% of the total supplies to rural areas (leaving 30% for domestic use in rural areas). Source: Data for 2000 to 2006: correspondence with Power Division, erstwhile Planning Commission, Government of India. For 2007 to 2009: Table 4.2, Annual Report 2011-12 on The Working on State Power Utilities and Electricity Departments, October 2011, Planning Commission, Government of India
http://planningcommission.nic.in/reports/genrep/arep_seb11_12.pdf. Data for 2009 to 2013: Table 4.2, Annual Report (2013-14) on The Working on State Power Utilities and Electricity Departments, February 2014, Planning Commission, Government of India
http://planningcommission.gov.in/reports/genrep/rep_arpower0306.pdf. Average tariffs and unit costs are from the respective Chapter 4 and its annexures. For 2014 to 2016:
http://www.pfcindia.com/DocumentRepository/ckfinder/files/Operations/Performance_Reports_of_State_Power_Utilities/1_Report%20on%20the%20Performance%20of%20State%20Power%20Utilities%202013-14%20to%202015-16.pdf, General Review Report(All India Electricity Statistics) and Tariff and Duty of electricity supply in India (Central Electricity Authority). Payments for 2017 and 2018: data are estimated using moving three years average.

Use of labels: Production limits: NO; Variable payment rates: NO; Input constraints: NO.

Payments are included in ACT.

Interest Subvention on Short Term Loans

Period of implementation: 2007 ongoing

Payments provide subsidies to public sector banks, regional rural banks and co-operative banks in respect of short-term production credit to enable these agencies to deliver credit to farmers at subsidised interest rates. The rate of subsidy has varied over time and for farmers in different kinds of repayment situations. Source: Payment data for 2007 to 2015 under Department of Financial Services, Ministry of Finance; and for 2016, 2017 and 2018 under Department of Agriculture, Cooperation and Farmers' Welfare, Ministry of Agriculture and Farmers' Welfare in Expenditure Budget, Government of India.

Use of labels: Production limits: NO; Variable payment rates: NO; Input constraints: NO.

Payments are included in ACT.

Diesel Subsidy in Drought and Deficit Rainfall Affected Areas

Period of implementation: 2009, 2013, 2016 and 2017

Payments supported farmers in providing supplementary irrigation through diesel pump sets in areas affected by drought and deficit rainfall. Source: Payment data under Department of Agriculture, Cooperation and Farmers' Welfare in Expenditure Budget, Government of India.

Use of labels: Production limits: NO; Variable payment rates: NO; Input constraints: NO.

Payments are included in ACT.

Fertiliser Subsidy

Period of implementation: 2000 ongoing

Payments are provided to actors engaged in the supply of fertilisers, such as manufacturers, importers and distributors. This enables the sale of various fertilisers to farmers at controlled prices or with a given subsidy rate under provisions which have evolved differently for urea and for phosphatic (P) and potassic (K) fertilisers since 2000. While very little urea was imported in 2000, compared to consumption, the share supplied by imports had by 2013 risen to 23% (consumption increased by about half). Subsidy payments for domestically manufactured urea are based on the difference between the manufacturing cost and a maximum retail price (MRP). The manufacturing cost is specific to individual manufacturing plants and includes fixed costs and variable costs, mainly for natural gas, some of which is supplied at low administered prices. Subsidy payments for imported urea are based on the difference between the import parity price and the MRP. The MRP has been raised only little from the year 2000 or even before. The bulk of the consumption of P fertilisers and all of the consumption of K fertilisers are accounted for by imports. Up to 2010 the subsidy payments on P and K fertilisers were based on the difference between the import parity price and a fixed retail price. P and K fertilisers were decontrolled after 2010 and maximum retail prices are no longer set for these fertilisers. The subsidy payments for P and K fertilisers are based on a fixed payment rate per tonne of fertiliser. Source: Payment data for 2000 to 2013 refer to the sum of subsidies under the headings

subsidies on indigenous urea, subsidies on imported urea, sale of decontrolled fertiliser with concession to farmers, and (in 2007 and 2008 only) subsidy provided through bond, i.e., the government entered into a payment obligation. Payment data for 2000-13 from Table 1, Rationalizing Fertilizer Subsidy in India: Key Issues and Policy Options, by A. Gulati and P. Banerjee, Working Paper 307, August 2015, Indian Council for Research on International Economic Relations (ICRIER) (source is indicated as Expenditure Budget, Volume I [understood as Demand No. 7], Department of Fertilizers, Government of India). Payment data for 2014-18 under Department of Fertilizers, Volume I, Demand No. 7, Expenditure Budget, Government of India.

Use of labels: Production limits: NO; Variable payment rates: NO; Input constraints: NO.

Payments are included in GCT for crops.

Development of Pulses

Period of implementation: 2000-05

Payments supported a short-term duration package of practices in pulses cultivation, production and distribution of breeder seed, and front line demonstration, by ICAR. Payments under this programme are split 50%-50% between PSE and GSSE. Source: Payment data from Department of Agriculture, Cooperation and Farmers' Welfare, Ministry of Agriculture and Farmers' Welfare, Expenditure Budget, Government of India.

Use of labels: Production limits: NO; Variable payment rates: NO; Input constraints: NO.

Payments are included in GCT for pulses.

Subsidy on Crop Insurance

Period of implementation: 2000 ongoing

The Government of India has paid part of the premium for crop insurance through a variety of crop insurance schemes since 2000 (and before). They include, e.g., the National Agricultural Insurance Scheme, the Modified National Agricultural Insurance Scheme, the Weather Based Crop Insurance Scheme, the Coconut Palm Insurance Scheme, the National Crop Insurance Program, the Restructured Weather Based Crop Insurance Scheme, and, most recently, the Pradhan Mantri Fasal Bima Yojana. Source: A year's payment data is the sum of expenditures (revised or actual) reported under headings such as Crop Insurance or Crop Insurance Scheme under Department of Agriculture, Cooperation and Farmers' Welfare, Ministry of Agriculture and Farmers' Welfare, in Demand No. 1, Expenditure Budget, Government of India.

Use of labels: Production limits: NO; Variable payment rates: NO; Input constraints: NO.

Payments are included in GCT for crops.

Seeds

Period of implementation: 2000-08

Payments supported the production and distribution of quality seeds. Source: Payment data under Department of Agriculture, Cooperation and Farmers' Welfare in Expenditure Budget, Government of India.

Use of labels: Production limits: NO; Variable payment rates: NO; Input constraints: NO.

Payments are included in GCT for oilseeds.

Organic Value Chain Development for North East Region

Period of implementation: 2015 ongoing

Payments support farmers' purchase of such inputs as seeds, bio fertilisers, liquid bio pesticides, and setting up custom hiring centres. Payments under this programme are split 50%-50% between PSE and GSSE. Source: Payment data under Department of Agriculture, Cooperation and Farmers' Welfare in Expenditure Budget, Government of India.

Use of labels: Production limits: NO; Variable payment rates: NO; Input constraints: NO.

Payments are included in GCT for crops.

Mission for Integrated Development of Horticulture – Production of Planting Material

Period of implementation: 2014 ongoing

Payments support the production and distribution of good quality seeds and planting material to farmers. Some payments support proper fencing, net houses, irrigation facilities and hi-tech green houses. Payments under this programme are split 50%-50% between PSE B1 Variable input use and B2 Capital formation. Source: Payments under each component of MIDH obtained through correspondence with the Department of Agriculture, Cooperation and Farmers' Welfare, Government of India. Payments estimated for 2018: payment in previous year multiplied by mean annual rate of change in 2015-17.

Use of labels: Production limits: NO; Variable payment rates: NO; Input constraints: NO.

Payments are included in GCT for crops.

Agricultural and Rural Debt Relief Scheme

Period of implementation: 2008-11

Also called Agricultural Debt Waiver and Debt Relief Scheme. Payments supported the complete waiver of debts held by farmers with landholdings of up to 2 ha (small and marginal farmers) and a one-time relief of 25% of the eligible amount (interest and principal) held by other farmers provided they paid the remaining 75%. Source: Payment data under Department of Agriculture, Cooperation and Farmers' Welfare in Expenditure Budget, Government of India.

Use of labels: Production limits: NO; Variable payment rates: NO; Input constraints: NO.

Payments are included in ACT.

State Farm Loan Waivers

Period of implementation: 2017 and 2018

Payments support the complete waiver of loans held by farmers. Budget allocations in 2017 cover the following states: Maharashtra; Uttar Pradesh; Punjab; and Karnataka. Budget allocations in 2018 cover the following states: Maharashtra; Uttar Pradesh; Punjab; Karnataka; and Rajasthan. The implementation of these programmes can vary across states, but waivers are usually conditional. For instance, in Punjab and Uttar Pradesh, waivers were granted only to small-scale farmers, with landholdings of less than 5 acres (2 ha). Second, state governments usually set a cut-off date when they implement a waiver, which will determine the period covered by the waiver (that can be different between states granting waivers) and thus which farmers benefit according to the start date of the loan taken. This also largely concerns short-term credit, on which the banking sector has focused disproportionately. Small-scale farmers are particularly dependent on short-term credit, which enables them to procure inputs such as fertiliser, seeds, and other variable inputs needed for seasonal agricultural operations. Source: State-level budget allocation information compiled by the Reserve Bank of India (RBI).

Use of labels: Production limits: NO; Variable payment rates: NO; Input constraints: NO.

Payments are included in ACT.

Custom Hiring – NFSM (National Food Security Mission)

Period of implementation: 2007 ongoing

Payments to farmers support the hiring of machines for farm operations from Custom Hiring Centres at a rate of INR 1 500 per ha. Source: Payment data under Department of Agriculture, Cooperation and Farmers' Welfare in Expenditure Budget, Government of India. Payments estimated for 2018: payment in previous year multiplied by mean annual rate of change in 2015-17.

Use of labels: Production limits: NO; Variable payment rates: NO; Input constraints: NO.

Payments are included in ACT.

B.2 Based on fixed capital formation

Agriculture Mechanization – RKVY (Rashtriya Krishi Vikas Yojana)

Period of implementation: 2007 ongoing

Payments support farmers' purchase of agricultural equipment and machinery. Source: Annual Report of Department of Agriculture, Cooperation and Farmers' Welfare. Payments estimated for 2018: payment in previous year multiplied by the mean annual rate of change in 2015-17.

Use of labels: Production limits: NO; Variable payment rates: NO; Input constraints: NO.

Payments are included in ACT.

Supply of Drip Irrigation System (Oil Palm) – NMOOP (National Mission on Oilseeds and Oil Palm)

Period of implementation: 2014 ongoing

Payments support the setting up of on-farm drip irrigation systems. Source: Correspondence with Department of Agriculture, Cooperation and Farmers' Welfare. Payments estimated for 2018: payment in previous year multiplied by the mean annual rate of change in 2015-17.

Use of labels: Production limits: NO; Variable payment rates: NO; Input constraints: NO.

Payments are included in SCT for XE (non-MPS commodities).

Supply of Diesel/Electric Pump Sets for Drip Irrigation System (Oil Palm) – NMOOP (National Mission on Oilseeds and Oil Palm)

Period of implementation: 2014 ongoing

Payments support the installation of pump sets at 50% of the cost, limited to INR 15 000 per pump set, by oil palm growers with at least 2 ha under oil palm plantation. Assistance is provided for diesel, petrol, or electric pump sets of capacity up to 10 horsepower. Source: Correspondence with Department of Agriculture, Cooperation and Farmers' Welfare. Payments estimated for 2018: payment in previous year multiplied by the mean annual rate of change in 2015-17.

Use of labels: Production limits: NO; Variable payment rates: NO; Input constraints: NO.

Payments are included in SCT for XE (non-MPS commodities).

Construction of Vermi-Compost Units at Oil Palm Fields (Oil Palm) – NMOOP (National Mission on Oilseeds and Oil Palm)

Period of implementation: 2014 ongoing

Payments support 50% of the cost, limited to INR 15 000 per unit, of installing vermi-compost units at oil palm fields and gardens. Source: Correspondence with Department of Agriculture, Cooperation and Farmers' Welfare. Payments estimated for 2018: payment in previous year multiplied by the mean annual rate of change in 2015-17.

Use of labels: Production limits: NO; Variable payment rates: NO; Input constraints: NO.

Payments are included in SCT for XE (non-MPS commodities).

Subsidy for Bore Wells at Oil Palm Farm (Oil Palm) – NMOOP (National Mission on Oilseeds and Oil Palm)

Period of implementation: 2014 ongoing

Payments support the construction of bore wells and tube wells at 50% of the cost, limited to INR 25 000 per unit. Source: Correspondence with Department of Agriculture, Cooperation and Farmers' Welfare. Payments estimated for 2018: payment in previous year multiplied by the mean annual rate of change in 2015-17.

Use of labels: Production limits: NO; Variable payment rates: NO; Input constraints: NO.

Payments are included in SCT for XE (non-MPS commodities).

Oil Palm Cutter, Chisel, etc. (Oil Palm) – NMOOP (National Mission on Oilseeds and Oil Palm)

Period of implementation: 2014 ongoing

Payments support farmers' acquisition of oil palm cutters at INR 1 500 per unit. Source: Correspondence with Department of Agriculture, Cooperation and Farmers' Welfare. Payments estimated for 2018: payment in previous year multiplied by the mean annual rate of change in 2015-17.

Use of labels: Production limits: NO; Variable payment rates: NO; Input constraints: NO.

Payments are included in SCT for XE (non-MPS commodities).

Mission for Integrated Development of Horticulture – Creation of Water Resources

Period of implementation: 2014 ongoing

Payments support the creation of water sources through construction of community tanks, farm ponds and reservoirs with plastic or reinforced cement concrete lining for irrigation of horticulture crops. Payments under this programme are split 50%-50% between PSE and GSSE. Source: Payment data under each component of MIDH obtained through correspondence with the Department of Agriculture, Cooperation and Farmers' Welfare, Government of India. Payments estimated for 2018: payment in previous year multiplied by mean annual rate of change in 2015-17.

Use of labels: Production limits: NO; Variable payment rates: NO; Input constraints: NO.

Payments are included in ACT.

Drip Irrigation (Oil Palm) – ISOPOM (Integrated Scheme for Oilseeds, Oil Palm and Maize)

Period of implementation: 2004-13

Payments support farmers' installation of drip irrigation as per the guidelines of National Mission for Sustainable Agriculture. Source: Correspondence with Department of Agriculture, Cooperation and Farmers' Welfare.

Use of labels: Production limits: NO; Variable payment rates: NO; Input constraints: NO.

Payments are included in SCT for XE (non-MPS commodities).

Diesel Pump Sets (Oil Palm) – ISOPOM (Integrated Scheme for Oilseeds, Oil Palm and Maize)

Period of implementation: 2004-13

Payments support the installation of pump sets at 50% of the cost, limited to INR 15 000 per pump set. Assistance is provided for diesel, petrol, or electric pump sets of capacity up to 10 horsepower. Source: Correspondence with Department of Agriculture, Cooperation and Farmers' Welfare.

Use of labels: Production limits: NO; Variable payment rates: NO; Input constraints: NO.

Payments are included in SCT for XE (non-MPS commodities).

Sprinkler Set – NFSM (National Food Security Mission)

Period of implementation: 2007 ongoing

Payments support the installation of sprinkler sets at the lower of INR 10 000 per ha or 50% of the cost. Source: Correspondence with Department of Agriculture, Cooperation and Farmers' Welfare. Payments estimated for 2018: payment in previous year multiplied by the mean annual rate of change in 2015-17.

Use of labels: Production limits: NO; Variable payment rates: NO; Input constraints: NO.

Payments are included in ACT.

Pump Set – NFSM (National Food Security Mission)

Period of implementation: 2007 ongoing

Payment support the installation of pump sets at the lower of INR 10 000 per pump set or 50% of the cost. Source: Correspondence with Department of Agriculture, Cooperation and Farmers' Welfare. Payments estimated for 2018: payment in previous year multiplied by the mean annual rate of change in 2015-17.

Use of labels: Production limits: NO; Variable payment rates: NO; Input constraints: NO.

Payments are included in ACT.

Machineries – NFSM (National Food Security Mission)

Period of implementation: 2007 ongoing

Payments support the acquisition of machinery at the lower of rates between INR 600 (e.g., manual sprayer) and INR 75 000 (e.g., self-propelled paddy transplanter) and 50% of the cost. Source: Correspondence with Department of Agriculture, Cooperation and Farmers' Welfare. Payments estimated for 2018: payment in previous year multiplied by the mean annual rate of change in 2015-17.

Use of labels: Production limits: NO; Variable payment rates: NO; Input constraints: NO.

Payments are included in ACT.

Water Carrying Pipes – NFSM (National Food Security Mission)

Period of implementation: 2007 ongoing

Payments support the acquisition of pipes at the lower of a varying rate per metre depending on the material of the pipe (e.g., between INR 25 and INR 50 per metre) and 50% of the cost, up to a limit of 600 metres and a cost of INR 15 000 per farmer. Source: correspondence with Department of Agriculture, Cooperation and Farmers' Welfare. Payments estimated for 2018: payment in previous year multiplied by the mean annual rate of change in 2015-17.

Use of labels: Production limits: NO; Variable payment rates: NO; Input constraints: NO.

Payments are included in ACT.

Oil Palm Protective Wire Mesh (Oil Palm) – NMOOP (National Mission on Oilseeds and Oil Palm)

Period of implementation: 2014 ongoing

Payments support farmers' acquisition of oil palm protective wire mesh at INR 15 000 per unit. Source: Correspondence with Department of Agriculture, Cooperation and Farmers' Welfare. Payments estimated for 2018: payment in previous year multiplied by mean annual rate of change in 2015-17.

Use of labels: Production limits: NO; Variable payment rates: NO; Input constraints: NO.

Payments are included in SCT for XE (non-MPS commodities).

Sub-Mission on Agriculture Mechanisation

Period of implementation: 2014 ongoing

Payments support the procurement of agriculture machinery and equipment, promotion of farm mechanisation in selected villages, establishment of farm machinery banks and promotion of machinery in the North-eastern region. Source: Payment data under Department of Agriculture, Cooperation and Farmers' Welfare in Expenditure Budget, Government of India.

Use of labels: Production limits: NO; Variable payment rates: NO; Input constraints: NO.

Payments are included in ACT.

Mission for Integrated Development of Horticulture – Mechanisation

Period of implementation: 2014 ongoing

Payments support the procurement of power operated machines and tools to promote mechanisation of horticulture related activities. Source: Payment data under each component of MIDH obtained through correspondence with the Department of Agriculture, Cooperation and Farmers' Welfare, Government of India. Payments estimated for 2018: payment in previous year multiplied by mean annual rate of change in 2015-17.

Use of labels: Production limits: NO; Variable payment rates: NO; Input constraints: NO.

Payments are included in ACT.

Water Harvesting Structure/Ponds (Oil Palm) – NMOOP (National Mission on Oilseeds and Oil Palm)

Period of implementation: 2014 ongoing

Payments support farmers constructing ponds at 50% of the cost, limited to INR 75 000 in plain areas and INR 90 000 in hilly areas. Source: Correspondence with Department of Agriculture, Cooperation and Farmers' Welfare. Payments estimated for 2018: payment in previous year multiplied by mean annual rate of change in 2015-17.

Use of labels: Production limits: NO; Variable payment rates: NO; Input constraints: NO.

Payments are included in SCT for XE (non-MPS commodities).

Mission for Integrated Development of Horticulture – Protected Cultivation

Period of implementation: 2014 ongoing

Payments support farmers constructing shade net house, green houses, mulching, and plastic tunnels, and anti-bird and hail nets. Source: Payment data under each component of MIDH obtained through correspondence with the Department of Agriculture, Cooperation and Farmers' Welfare, Government of India. Payments estimated for 2018: payment in previous year multiplied by mean annual rate of change in 2015-17.

Use of labels: Production limits: NO; Variable payment rates: NO; Input constraints: NO.

Payments are included in ACT.

National Mission on Micro-Irrigation

Period of implementation: 2005-13

Payments support farmers setting up drip irrigation, sprinkler systems and irrigation systems for the use of water resources. The cost is split among the central government, state governments and farmers in 40:10:50 proportions. Source: Payment data under Department of Agriculture, Cooperation and Farmers' Welfare in Expenditure Budget, Government of India.

Use of labels: Production limits: NO; Variable payment rates: NO; Input constraints: NO.

Payments are included in ACT.

Mobile Rain Gun – NFSM (National Food Security Mission)

Period of implementation: 2007 ongoing

Payments support farmers acquiring mobile rain guns (pressurised irrigation sprinklers) at the lower of INR 15 000 per mobile rain gun and 50% of cost. Source: Correspondence with Department of Agriculture, Cooperation and Farmers' Welfare. Payments estimated for 2018: payment in previous year multiplied by mean annual rate of change in 2015-17.

Use of labels: Production limits: NO; Variable payment rates: NO; Input constraints: NO.

Payments are included in ACT.

Mission for Integrated Development of Horticulture - Rejuvenation of senile orchards

Period of implementation: 2014 ongoing

Payments support rejuvenating uneconomical orchards and unproductive plantation through improved technology. Payments under this programme are split 50%-50% between PSE and GSSE. Source: Payment data under each component of MIDH obtained through correspondence with the Department of Agriculture, Cooperation and Farmers' Welfare, Government of India. Payments estimated for 2018: payment in previous year multiplied by mean annual rate of change in 2015-17.

Use of labels: Production limits: NO; Variable payment rates: NO; Input constraints: NO.

Payments are included in GCT for crops.

Mission for Integrated Development of Horticulture – Production of Planting Material

Period of implementation: 2014 ongoing

Payments support the production and distribution of good quality seeds and planting material to farmers. Some payments support proper fencing, net houses, irrigation facilities and hi-tech green houses. Payments under this programme are split 50%-50% between PSE B1 Variable Input Use and B2 Fixed Capital Formation. Source: Payment data under each component of MIDH obtained through correspondence with the Department of Agriculture, Cooperation and Farmers' Welfare, Government of India. Payments estimated for 2018: payment in previous year multiplied by mean annual rate of change in 2015-17.

Use of labels: Production limits: NO; Variable payment rates: NO; Input constraints: NO.

Payments are included in GCT for crops.

Mission for Integrated Development of Horticulture - Establishment of New Garden/Area Expansion

Period of implementation: 2014 ongoing

Payments support improved area expansion of horticulture crops (including fruits, vegetables and other crops) plantations. Source: Payment data under each component of MIDH obtained through correspondence with the Department of Agriculture, Cooperation and Farmers' Welfare, Government of India. Payments estimated for 2018: payment in previous year multiplied by mean annual rate of change in 2015-17.

Use of labels: Production limits: NO; Variable payment rates: NO; Input constraints: NO.

Payments are included in GCT for crops.

Mission for Integrated Development of Horticulture - Mushroom Production

Period of implementation: 2014 ongoing

Payments support farmers setting up mushroom and spawn production. Source: Payment data under each component of MIDH obtained through correspondence with the Department of Agriculture, Cooperation and Farmers' Welfare, Government of India. Payments estimated for 2018: payment in previous year multiplied by mean annual rate of change in 2015-17.

Use of labels: Production limits: NO; Variable payment rates: NO; Input constraints: NO.

Payments are included in SCT for XE (non-MPS commodities).

Mission for Integrated Development of Horticulture – Pollination support through beekeeping

Period of implementation: 2014 ongoing

Payments support developing infrastructural facilities for scientific bee keeping through development of nucleus stock of honeybees and bee breeding. Support is also provided through distribution of honeybee hives and equipment for bee keeping. Source: Payment data under each component of MIDH obtained

through correspondence with the Department of Agriculture, Cooperation and Farmers' Welfare, Government of India. Payments estimated for 2018: payment in previous year multiplied by mean annual rate of change in 2015-17.

Use of labels: Production limits: NO; Variable payment rates: NO; Input constraints: NO.

Payments are included in SCT for XE (non-MPS commodities).

Mission for Integrated Development of Horticulture – Cold Storage

Period of implementation: 2014 ongoing

Payments support construction of energy efficient cold storage infrastructure facilities. Payments under this programme are split 50%-50% between PSE and GSSE. Source: Payment data under each component of MIDH obtained through correspondence with the Department of Agriculture, Cooperation and Farmers' Welfare, Government of India. Payments estimated for 2018: payment in previous year multiplied by mean annual rate of change in 2015-17.

Use of labels: Production limits: NO; Variable payment rates: NO; Input constraints: NO.

Payments are included in GCT for crops.

Promotion of Agricultural Mechanization for in-situ Management of Crop Residue

Period of implementation: since 2018

Payments support farmers in addressing air pollution caused by in-situ crop residue burning in the states of Punjab, Haryana, Uttar Pradesh and NCT of Delhi. The scheme foresees the establishment of custom hiring centres that provide subsidized in-situ crop residue machinery and equipment to individual farmers. It also provides support by creating awareness through demonstration camps and capacity building activities for effective management and utilisation of crop residue. Financial assistance of 50% is provided to individual farmers for procurement of equipment and machinery. State governments, the Indian Council of Agricultural Research (ICAR), *Krishi Vigyan Kendra* (KVKs, Agricultural science centres), PSU's etc. are also involved in supporting capacity building programs, trainings, communication and information activities for raising awareness on in-situ crop residue management and achieving zero straw burning. Source: Department of Agriculture, Cooperation and Farmers' Welfare (DACFW), Ministry of Agriculture and Farmers' Welfare, Government of India.

Use of labels: Production limits: NO; Variable payment rates: NO; Input constraints: NO.

Payments are included in ACT.

B.3. Based on use of on-farm services

Mission for Integrated Development of Horticulture – Adoption of Organic Farming

Period of implementation: 2014 ongoing

Payments support farmers' adoption of organic farming in specific crops by providing on-farm services that can guide farmers in their decision to cultivate new crops, with improved farming practices. Source: Payment data under each component of MIDH obtained through correspondence with the Department of Agriculture, Cooperation and Farmers' Welfare, Government of India. Payments estimated for 2018: payment in previous year multiplied by mean annual rate of change in 2015-17.

Use of labels: Production limits: NO; Variable payment rates: NO; Input constraints: NO.

Payments are included in GCT for crops.

Rashtriya Gokul Mission

Period of implementation: 2017 ongoing

Payments support cattle farmers by providing on-farm guidance on improved nutrition and improved farm management practices. The scheme also supports the development, preservation and conservation of indigenous breeds. This is done through selective breeding in the breeding tract and genetic up gradation of nondescript cattle using elite indigenous breeds like Gir, Sahiwal. The mission also works towards enhancement of milk production and productivity and breed improvement programs for indigenous cattle in order to increase the stocks. There is also a provision for distribution of disease-free high-genetic merit bulls for natural service and establishment of an e-market portal for bovine germplasm for connecting breeders and farmers. The scheme subsumes the National Programme for Bovine Breeding, Indigenous Breeds and the National Mission on Bovine Productivity. Source: Payment data from Department of Animal Husbandry, Dairying and Fisheries (DAHDF), Ministry of Agriculture and Farmers' Welfare, Government of India.

Use of labels: Production limits: NO; Variable payment rates: NO; Input constraints: NO.

Payments are included in SCT for beef (bovine meat).

C. Payments based on current area planted/animal numbers/receipts/income – production required

[no payments under this heading]

D. Payments based on non-current area planted/animal numbers/receipts/income – production required

[no payments under this heading]

E. Payments based on non-current area planted/animal numbers/receipts/income – production not required

Income Support Scheme (PM-KISAN)

Period of implementation: since 2018

Payments provide a direct income transfer to small and marginal farmers (with landholdings up to 2 ha). The scheme will provide INR 6 000 annually in three equal instalments (of INR 2 000 each). The unconditional payment does not require farmers to produce and target farmers' broad needs (which can include everything from the purchase of inputs to any other non-farming related needs). The first instalment is paid until March 31st 2019 (thus in the financial year 2018-19; the first payment is retroactive, covering 1 December 2018 to 31 March 2019). Land records as on February 1st 2019 in the concerned states and Union

Territories (UTs) are used for identification of beneficiaries. However, in practice, given the nature of landholding records in India, the vast majority of landholding records refer rather to past landholding. Source: Department of Agriculture, Cooperation and Farmers' Welfare (DACFW), Ministry of Agriculture and Farmers' Welfare, Government of India.

Use of labels: Production limits: NO; Variable payment rates: NO; Input constraints: NO.

Payments are included in Other Transfers to Producers.

F. Payments based on non-commodity criteria

F.1. Long-term resource retirement

[no payments under this heading]

F.2. Specific non-commodity output

[no payments under this heading]

F.3. Other non-commodity criteria

[no payments under this heading]

G. Miscellaneous payments

Special Package for suicide prone districts

Period of implementation: 2007-13

Payments support the conditions of farmers in the identified districts. Payments under this programme are split 50%-50% between PSE and GSSE. Source: Payment data under Department of Agriculture, Cooperation and Farmers' Welfare in Expenditure Budget, Government of India.

Use of labels: Not applicable.

Payments are included in Other Transfers to Producers.

Lump Sum Provision for Project and Schemes for the Benefit of the North-eastern Region and Sikkim for Animal Husbandry

Period of implementation: 2000-01; 2003-08

Payments support animal husbandry projects and schemes in the North-eastern region and Sikkim. Payments under this programme are split 50%-50% between PSE and GSSE. Source: Payment data from Department of Animal Husbandry, Dairying and Fisheries (DAHDF), Ministry of Agriculture and Farmers' Welfare, Government of India.

Use of labels: Not applicable.

Payments are included in Other Transfers to Producers.

Lump Sum Provision for Projects and Schemes for the Benefit of North-eastern Region and Sikkim for Crop Husbandry

Period of implementation: 2000-08

Payments support crop husbandry projects and schemes in the North-eastern Region and Sikkim. Payments under this programme are split 50%-50% between PSE and GSSE. Source: Payment data under Department of Agriculture, Cooperation and Farmers' Welfare in Expenditure Budget, Government of India.

Use of labels: Not applicable.

Payments are included in Other Transfers to Producers.

Dairy Entrepreneurship Development

Period of implementation: 2015 ongoing

Payments support farmers setting up small dairy farms and other components to bring structural changes in the dairy sector. Farmers, individual entrepreneurs, non-government organisations, companies, groups of organised and unorganised sectors benefit under this scheme. Source: Payment data under Department of Animal Husbandry, Dairying and Fisheries in Expenditure Budget, Government of India.

Use of labels: Not applicable.

Payments are included in Other Transfers to Producers.

Market Intervention Scheme and Price Support Scheme (MIS-PSS)

Period of implementation: 2015 ongoing

Payments support procurement of agricultural and horticultural commodities which are perishable in nature in the event of bumper crops during the peak arrival period when the prices tend to fall below economic levels and cost of production. The *ad hoc* procurement mechanism is triggered when there is at least a 10% increase in production or a 10% decrease in the market prices over the previous marketing year. The scheme is implemented at the request of a State or Union Territory (UT) Government, which has to allocate 50% of the funds (or 25% in the case of North-eastern States) to support the cost. The payment to farmers is made by quantity sold to the National Agricultural Cooperative Marketing Federation of India Ltd. (NAFED) as the central agency and the agencies designated by the state government for a determined period. There is not sufficient information on the specific coverage of individual agricultural and horticultural commodities (which can differ across the States or UTs that implement the scheme) within the scheme, thus no allocation by individual commodities was possible. Source: Payment data from Department of Agriculture, Cooperation and Farmers' Welfare (DACFW) in Expenditure Budget, Government of India.

Use of labels: Not applicable.

Payments are included in Other Transfers to Producers.

Pradhan Mantri Annadata Aay Sanrakshan Yojna (PM-AASHA)

Period of implementation: since 2018

The programme has three sub-schemes: (a) Price Support Scheme (PSS); (b) Price Deficiency Payment Scheme (PDPS); and (c) Private Procurement & Stockist Scheme (PDPS). The three components are separate from all other existing schemes of the Department of Food and Public Distribution (DFPD) for procurement of rice, wheat and nutri-cereals/coarse grains or of the Ministry of Textile for cotton and jute. The programme targets covering existing gaps in these procurement schemes, by providing a menu of additional compensation mechanisms. Under the Price Support Scheme (PSS), state governments take a proactive role in the physical procurement of pulses, oilseeds and copra from farmers, which is led by Central Nodal Agencies and fully funded by the central government. (b) The Price Deficiency Payment Scheme (PDPS) covers all oilseeds for which a Minimum Support Price (MSP) is notified. A direct payment of the difference between the MSP and the selling/modal price is made to pre-registered farmers selling the produce in the notified market yard through an auction process. The payments are done directly into the registered bank accounts of farmers. The sub-scheme does not involve any physical procurement of crops as farmers are paid the difference between the MSP price and sale/modal price on disposal in the notified market. (c) Under the pilot of Private Procurement & Stockist Scheme (PDPS), states also have the option to roll out private sector participation in procurement operations. In 2018, pilots have not yet been identified in selected districts/APMCs. There is not sufficient information on the specific coverage of individual commodities (pulses, oilseeds, other commodities etc.) within the scheme, thus no allocation by individual commodities was possible. Source: Payment data from Department of Agriculture, Cooperation and Farmers' Welfare (DACFW) in Expenditure Budget, Government of India.

Use of labels: Production limits: NO; Variable payment rates: YES; Input constraints: NO.

Payments are included in GCT for crops.

III.2 Percentage PSE $[100 \times (\text{III.1}) / ((\text{I}) + (\text{Sum of A2 to G}))]$

III.3 Producer NPC: For all agricultural commodities the producer NPC is estimated as a weighted average of the producer NPC calculated for the individual MPS commodities and shown in Table 4. For each commodity Producer NPC = [domestic price received by producers (at the farm gate) + unit payments based on output] / border price (also at the farm gate).

III.4 Producer NAC $[1 / (100 - (\text{III.2})) \times 100]$

IV. General Services Support Estimate (GSSE): total budgetary expenditure to support general services provided to agriculture [Sum of H to M].

H. Agricultural Knowledge and Innovation System

H.1. Agricultural Knowledge Generation

Payments to Indian Council of Agricultural Research (ICAR)

Period of implementation: 2000 ongoing

Expenditure supports ICAR, an autonomous organisation at the national level responsible for organising and managing research, education and extension in the field of agriculture, animal sciences and fisheries. Its mandate includes crop husbandry, soil and water conservation, animal husbandry and fisheries. Source: Expenditure data under Department of Agricultural Research and Education in Expenditure Budget, Government of India.

Assistance to Central Agricultural University, Imphal

Period of implementation: 2002

Expenditure supports the university set up in Imphal. Source: Expenditure data under Department of Agricultural Research and Education in Expenditure Budget, Government of India.

Central Agricultural University, Bundelkhand

Period of implementation: 2014 and 2015

Expenditure supports the university set up in Bundelkhand. Source: Expenditure data under Department of Agricultural Research and Education in Expenditure Budget, Government of India.

Central Agricultural University, Bihar

Period of implementation: 2014 and 2015

Expenditure supports the university set up in Bihar. Source: Expenditure data under Department of Agricultural Research and Education in Expenditure Budget, Government of India.

Agriculture Universities and Institutions

Period of implementation: 2015 ongoing

Expenditure supports all the agricultural universities in the country, including the accreditation of educational institutions, providing international and national fellowships, and organising training and capacity building programmes for the scientists and faculty of the National Agricultural Research System. Source: Expenditure data under Department of Agricultural Research and Education in Expenditure Budget, Government of India.

Crop Science

Period of implementation: 2015 ongoing

Expenditure supports development of improved crop varieties and hybrids, cost-effective production and environment-friendly protection technologies in different agro-climatic regions. Source: Expenditure data under Department of Agricultural Research and Education in Expenditure Budget, Government of India.

Horticulture Science

Period of implementation: 2015 ongoing

Expenditure supports enrichment of horticultural genetic resources, development of new cultivation with resistance mechanism to biotic and abiotic stresses, appropriate production technology and health management system of horticultural and vegetable crops. Source: Expenditure data under Department of Agricultural Research and Education in Expenditure Budget, Government of India.

Animal Science

Period of implementation: 2015 ongoing

Expenditure supports development of new technologies to support production enhancement, profitability, competitiveness and sustainability of livestock and poultry sector for food and nutritional security. It facilitates need based priority research in livestock and poultry sector in on-going and new emerging areas. Source: Expenditure data under Department of Agricultural Research and Education in Expenditure Budget, Government of India.

Livestock Census and Integrated Sample Survey

Period of implementation: 2002-04; 2006 ongoing

Expenditure supports the conduct of census to collect detailed information on livestock population category-wise along with age and sex-composition, disaggregated information on poultry, animal operated agricultural implements and machinery, and fishery statistics. Source: Expenditure data under Department of Animal Husbandry, Dairying and Fisheries in Expenditure Budget, Government of India.

Manure and Fertiliser

Period of implementation: 2000-05

Expenditure supports a variety of activities to develop the use of manure and fertilisers. Source: Expenditure data from Department of Agriculture, Cooperation and Farmers' Welfare, Ministry of Agriculture and Farmers' Welfare, Government of India.

Mission for Integrated Development of Horticulture - Research and Development

Period of implementation: 2014 ongoing

Payments support research and development for bamboo crops and horticulture crops mainly focusing on front line demonstration, seed and planting material, technology standardisation and acquisition. Source: Payments under each component of MIDH obtained through correspondence with the Department of Agriculture, Cooperation and Farmers' Welfare, Ministry of Agriculture and Farmers' Welfare, Government of India. Payments estimated for 2018: payment in previous year multiplied by mean annual rate of change in 2015-17.

Economics Statistics and Management

Period of implementation: 2015 ongoing

Expenditure supports research in the areas of agricultural economics and agricultural statistics to address the policy, management and database issues and accordingly provide need-based support to other schemes and agricultural stakeholders. Source: Expenditure data under Department of Agricultural Research and Education in Expenditure Budget, Government of India.

H.2. Agricultural Knowledge Transfer

H2.a. education

Information Technology-RKVY

Period of implementation: 2007 ongoing

Expenditure supports Knowledge and Technology Resource Centres. Source: Expenditure data from Annual Report of Department of Agriculture, Cooperation and Farmers' Welfare, Ministry of Agriculture and Farmers' Welfare, Government of India. Expenditure estimated for 2018: expenditure in previous year multiplied by the mean annual rate of change in years 2015-17.

Research-RKVY

Period of implementation: 2007 ongoing

Expenditure supports the strengthening of *Krishi Vigyan Kendras* (KVKs, Agricultural science centres). Source: Expenditure data from Annual Report of Department of Agriculture, Cooperation and Farmers' Welfare, Ministry of Agriculture and Farmers' Welfare, Government of India. Expenditure estimated for 2018: expenditure in previous year multiplied by the mean annual rate of change in years 2015-17.

Transfer of Technology-ISOPOM (Oil Seed)

Period of implementation: 2012 and 2013

Expenditure supported block demonstrations, integrated pest management, training of farmers, extension workers, input dealers and local initiatives. Source: Expenditure data from correspondence with Department of Agriculture, Cooperation and Farmers' Welfare, Ministry of Agriculture and Farmers' Welfare, Government of India.

Transfer of Technology-NMOOP (Oil Seed)

Period of implementation: 2014 ongoing

Expenditure supports block demonstrations, integrated pest management, training of farmers, extension workers, input dealers and local initiatives. Source: Expenditure data from correspondence with Department of Agriculture, Cooperation and Farmers' Welfare, Ministry of Agriculture and Farmers' Welfare, Government of India. Expenditure estimated for 2018: payment in previous year multiplied by the mean annual rate of change in years 2015-17.

Research and Development of Post-Harvest Technology in Oilseeds and Pulses

Period of implementation: 2000-03

Expenditure supported research and development through practices such as threshing, shelling or podding and drying. Source: Expenditure data from correspondence with the Department of Agriculture, Cooperation and Farmers' Welfare, Ministry of Agriculture and Farmers' Welfare, Government of India.

Mission for Integrated Development of Horticulture - Human Resource development of horticulture

Period of implementation: 2014 ongoing

Payments support training of farmers to encourage them to adopt high yielding variety of crops. Source: Department of Agriculture, Cooperation and Farmers' Welfare, Ministry of Agriculture and Farmers' Welfare, Government of India. Payments estimated for 2018: payment in previous year multiplied by mean annual rate of change in 2015-17.

Education & Training

Period of implementation: 2000-13

Expenditure supported farmers' training through *Krishi Vigyan Kendras* (KVKs, Agricultural science centres), vocational agricultural schools and field demonstrations. Source: Expenditure data under Department of Agricultural Research and Education in Expenditure Budget, Government of India.

Intensive Cotton Development Programme/Technology Mission on Cotton

Period of implementation: 2000-15

Expenditure supported the improvement of production and productivity of cotton through technology transfer and seed intervention. Source: Expenditure data under Department of Agricultural Research and Education in Expenditure Budget, Government of India.

H.2.b. extension services

Extension-RKVY

Period of implementation: 2007 ongoing

Expenditure supports skill development and training in the farming community and revamping existing agricultural extension systems. Source: Expenditure data under Department of Agriculture, Cooperation and Farmers' Welfare in Expenditure Budget, Government of India. Expenditure estimated for 2018: expenditure in previous year multiplied by the mean annual rate of change in years 2015-17.

Farmers Training-NMOOP (Oil Palm)

Period of implementation: 2014 ongoing

Expenditure supports two-day farmer training at INR 24 000 per batch of 30 farmers (INR 400 per participant per day). Source: Expenditure data from correspondence with Department of Agriculture, Cooperation and Farmers' Welfare, Ministry of Agriculture and Farmers' Welfare, Government of India. Payments estimated for 2018: payment in previous year multiplied by mean annual rate of change in 2015-17.

Extension Officers Training-NMOOP (Oil Palm)

Period of implementation: 2014 ongoing

Expenditure supports training of extension officials and input dealers in batches of 20 participants at INR 900 per participant per day. Source: Expenditure data from correspondence with Department of Agriculture, Cooperation and Farmers' Welfare, Ministry of Agriculture and Farmers' Welfare, Government

of India. Payments estimated for 2018: payment in previous year multiplied by mean annual rate of change in 2015-17.

Demonstrations-NMOOP (Oil Palm)

Period of implementation: 2014 ongoing

Expenditure supports demonstrations of oil palm cultivation at farmers' fields and at the farms of state governments, state agricultural universities, KVKs, and Indian Council of Agricultural Research. Source: Expenditure data from correspondence with Department of Agriculture, Cooperation and Farmers' Welfare, Ministry of Agriculture and Farmers' Welfare, Government of India. Payments estimated for 2018: payment in previous year multiplied by mean annual rate of change in 2015-17.

Farmers Training-ISOPOM (Oil Palm)

Period of implementation: 2004-13

Expenditure supported farmer training. Source: Expenditure data from correspondence with Department of Agriculture, Cooperation and Farmers' Welfare, Ministry of Agriculture and Farmers' Welfare, Government of India.

Establishment & Staff-ISOPOM (Oil Palm)

Period of implementation: 2004-13

Expenditure supported establishment and staff and other ongoing schemes of seed gardens, leaf analysis lab, training of staff and officers, and testing of genotype. Source: Expenditure data from correspondence with Department of Agriculture, Cooperation and Farmers' Welfare, Ministry of Agriculture and Farmers' Welfare, Government of India.

Extension & Publicity-ISOPOM (Oil Palm)

Period of implementation: 2004-13

Expenditure supported extension and publicity. Source: Expenditure data from correspondence with Department of Agriculture, Cooperation and Farmers' Welfare, Ministry of Agriculture and Farmers' Welfare, Government of India.

Demonstrations-ISOPOM (Oil Palm)

Period of implementation: 2004-13

Expenditure supported demonstration of cultivation and management practices, plant protection measures and potential yield of oil palm by providing up to INR 10 000 per ha for planting material and up to INR 30 950 per ha for cultivation during gestation period of 4-5 years. Available for up to twenty 1-ha units in blocks where new oil palm plantations of 500 ha or above are located on farmers' fields. Source: Expenditure data from correspondence with Department of Agriculture, Cooperation and Farmers' Welfare, Ministry of Agriculture and Farmers' Welfare, Government of India.

Cropping System Based Training-NFSM

Period of implementation: 2007 ongoing

Expenditure supports speedy disseminations of improved cropped production practices. Source: Expenditure data from correspondence with Department of Agriculture, Cooperation and Farmers' Welfare, Ministry of Agriculture and Farmers' Welfare, Government of India. Expenditure estimated for 2018: expenditure in previous year multiplied by the mean annual rate of change in years 2015-17.

Cultivation-ISOPOM (Oil Palm)

Period of implementation: 2004-13

Expenditure supports demonstration of cultivation and management practices, plant protection measures and potential yield of oil palm. Source: Expenditure data from correspondence with Department of Agriculture, Cooperation and Farmers' Welfare, Ministry of Agriculture and Farmers' Welfare, Government of India.

Demonstrations by NGO-NFSM

Period of implementation: 2007 ongoing

Expenditure supports cluster demonstrations by NGOs reaching out to farmers in remote areas. Source: Expenditure data from correspondence with Department of Agriculture, Cooperation and Farmers' Welfare, Ministry of Agriculture and Farmers' Welfare, Government of India. Payments estimated for 2018: payment in previous year multiplied by mean annual rate of change in 2015-17.

Demonstrations on improved package-NFSM

Period of implementation: 2007 ongoing

Expenditure supports demonstrations of improved method of rice cultivation (system of rice intensification, direct seeded rice, hybrid rice technology, stress tolerant varieties and improved package of practices (variety, nutrient management, integrated pest management etc.). Similar demonstrations are done for wheat and pulses. Source: Expenditure data from correspondence with Department of Agriculture, Cooperation and Farmers' Welfare, Ministry of Agriculture and Farmers' Welfare, Government of India. Payments estimated for 2018: payment in previous year multiplied by mean annual rate of change in 2015-17.

Oil Seed Production Program

Period of implementation: 2000-15

Expenditures supported the improvement of quality and variety of seed, pre-sowing treatment, usage of bio-fertilisers, pest and weed control, education of farmers about pest control methods, and field demonstration of production technologies. Expenditures are split 50%-50% between PSE and GSSE. Source: Expenditure data under Department of Agriculture, Cooperation and Farmers' Welfare in Expenditure Budget, Government of India.

Horticulture and Vegetable Crop

Period of implementation: 2000-08

Expenditures supported the setting up of new gardens and orchards, planting and seed material, training and demonstration of new technology and mechanisation. Expenditures are split 50%-50% between PSE and GSSE. Source: Expenditure data under Department of Agriculture, Cooperation and Farmers' Welfare in Expenditure Budget, Government of India.

National Horticulture Mission

Period of implementation: 2005-13

Expenditures supported improved production and productivity of horticulture crops by helping individual farmers through income support and developing area specific strategies for overall growth of horticulture sector. Payments under this programme are split 50%-50% between PSE and GSSE. Source: Payments data from expenditure data under Department of Agriculture, Cooperation and Farmers' Welfare in Expenditure Budget, Government of India.

Horticulture Mission for North-east and Himalayan States

Period of implementation: 2009-13

Expenditures supported holistic growth of the North-eastern region, focusing on enhanced productivity, employment opportunities and introduction of improved technology. Payments under this programme are split 50%-50% between PSE and GSSE. Source: Payments data from expenditure data under Department of Agriculture, Cooperation and Farmers' Welfare in Expenditure Budget, Government of India.

Macro Management of Agriculture

Period of implementation: 2000-12

Expenditures supported the distribution of hybrid or high yielding seeds, micro-nutrients, bio-fertilisers, bio-pesticides, hybrid seeds, mini-kits, training through farmer's field schools, skill development and extension activities to facilitate crop production. Expenditures are split 50%-50% between PSE and GSSE. Source: Expenditure data under Department of Agriculture, Cooperation and Farmers' Welfare in Expenditure Budget, Government of India.

National Project on Organic Farming

Period of implementation: 2015 ongoing

Expenditure encourages and promotes development of organic agriculture by imparting on certificate system, initiating research and data collection. Source: Expenditure data under Department of Agriculture, Cooperation and Farmers' Welfare in Expenditure Budget, Government of India.

Jute Technology Mission - Mini Mission – II

Period of implementation: 2006-13

Expenditure supported production of breeder seed, providing technical knowhow, and co-ordinating activities like services, adaptive research, extension and input supply. Source: Expenditure data under Department of Agriculture, Cooperation and Farmers' Welfare in Expenditure Budget, Government of India.

Mini-kit Programme for Rice, Wheat and Coarse Cereal

Period of implementation: 2000 and 2001

Expenditure supported training, adoption of improved technology and increasing productivity. Source: Expenditure data under Department of Agriculture, Cooperation and Farmers' Welfare in Expenditure Budget, Government of India.

Support to State Extension Services

Period of implementation: 2008-13

Expenditure supported ensuring broad based extension delivery mechanisms and encouraging multi-agency extension strategies. Source: Expenditure data under Department of Agriculture, Cooperation and Farmers' Welfare in Expenditure Budget, Government of India.

Mass-Media Support to Agricultural Extension

Period of implementation: 2009-13

Expenditure supported revamping the extension services in the country using electronic media for transfer of technology. Source: Expenditure data under Department of Agriculture, Cooperation and Farmers' Welfare in Expenditure Budget, Government of India.

Extension Support to Central Institutes of DOE

Period of implementation: 2009-13

DOE is Directorate of Extension. Expenditure supported the development of linkages between State Agricultural Universities, Regional and State level institutes and the conduct of research studies. Source: Expenditure data under Department of Agriculture, Cooperation and Farmers' Welfare in Expenditure Budget, Government of India.

Sub-Mission on Agriculture Extension

Period of implementation: 2010; 2014 ongoing

Expenditure supports awareness creation and use of appropriate technology in agriculture and allied activities. Use of interactive and innovative methods of information dissemination like projectors, low cost films, handheld devices, mobile-based services, and Kisan Call Centres (KCCs) are provided to farmers. Source: Expenditure data under Department of Agriculture, Cooperation and Farmers' Welfare in Expenditure Budget, Government of India.

Extension and Training

Period of implementation: 2000-08

Expenditure supported disseminating information related to new technologies by enhancing farmers' grasp of crop techniques to improve technology. Source: Expenditure data under Department of Agriculture, Cooperation and Farmers' Welfare in Expenditure Budget, Government of India.

Organic Value Chain Development for North East Region

Period of implementation: 2015 ongoing

Expenditures support farmers' purchase of such inputs as seeds, bio fertilisers, liquid bio pesticides, and setting up custom hiring centres. Expenditures are split 50%-50% between PSE and GSSE. Source: Expenditure data under Department of Agriculture, Cooperation and Farmers' Welfare in Expenditure Budget, Government of India.

Agriculture Extension

Period of implementation: 2015 ongoing

Expenditure supports the dissemination and refinement of frontline agricultural technologies. It includes training of farmers and extension personnel on local technologies, distribution of seed and planting materials and testing of soil and water samples. Source: Expenditure data under Department of Agricultural Research and Education in Expenditure Budget, Government of India.

Poultry Development

Period of implementation: 2009-15

Expenditures support the strengthening of poultry farms, providing them with inputs, and strengthening feed quality monitoring wing and training. Expenditures are split 50%-50% between PSE and GSSE. Source: Expenditure data under Department of Animal Husbandry, Dairying and Fisheries in Expenditure Budget, Government of India.

Sheep and Wool Development

Period of implementation: 2009-15

Expenditures supported sheep farming, training and breed improvement. Expenditures are split 50%-50% between PSE and GSSE. Source: Expenditure data under Department of Animal Husbandry, Dairying and Fisheries in Expenditure Budget, Government of India.

Mission for Integrated Development of Horticulture - Precision Farming development and extension through Precision Farming Development Center (PFDCs)

Period of implementation: 2014 ongoing

Expenditure supports informing farmers about the technique of precision farming through trials and demonstrations. Source: Expenditures under each component of MIDH obtained through correspondence with the Department of Agriculture, Cooperation and Farmers' Welfare, Government of India. Payments estimated for 2018: payment in previous year multiplied by mean annual rate of change in 2015-17.

Development of Pulses

Period of implementation: 2000-05

Expenditures supported a short-term duration package of practices in pulses cultivation, production and distribution of breeder seed, and front line demonstration, by the Indian Council of Agricultural Research (ICAR). Payments under this programme are split 50%-50% between PSE and GSSE. Source: Expenditure data from Department of Agriculture, Cooperation and Farmers' Welfare, Ministry of Agriculture and Farmers' Welfare, Government of India.

Mission for Integrated Development of Horticulture - Technology dissemination through demonstration

Period of implementation: 2014 ongoing

Expenditure supports the introduction and awareness raising about protected cultivation, organic farming, and adequate use of pesticides through demonstrations. Source: Expenditures under each component of MIDH obtained through correspondence with the Department of Agriculture, Cooperation and Farmers' Welfare, Government of India. Payments estimated for 2018: payment in previous year multiplied by mean annual rate of change in 2015-17.

Agriculture Engineering

Period of implementation: 2015 ongoing

Expenditure supports research, development and refinement of farm equipment, process and value addition protocols. Source: Expenditure data under Department of Agricultural Research and Education in Expenditure Budget, Government of India.

Mission for Integrated Development of Horticulture - Good Agriculture Practices

Period of implementation: 2014 ongoing

Expenditure supports farmers in adopting good agricultural practices and improving crop quality. Source: Expenditures each component of MIDH obtained through correspondence with the Department of Agriculture, Cooperation and Farmers' Welfare, Ministry of Agriculture and Farmers' Welfare, Government of India. Payments estimated for 2018: payment in previous year multiplied by mean annual rate of change in 2015-17.

I. Inspection and control

I.1. Agricultural product safety and inspection

Veterinary Services and Animal Health

Period of implementation: 2000-15

Expenditure supported the states for control of animal disease, foot and mouth disease control programme, establishment and strengthening of existing veterinary hospitals and dispensaries. Source:

Expenditure data under Department of Animal Husbandry, Dairying and Fisheries in Expenditure Budget, Government of India.

National Programme for Bovine Breeding

Period of implementation: 2014 ongoing

Expenditures support artificial insemination services, breeding inputs in breeding tracts of indigenous breeds, the conservation, development and proliferation of selected indigenous bovine breeds, and the arrangement of breeding through artificial insemination. Expenditures under this programme are split 50%-50% between PSE and GSSE. Source: Expenditure data under Department of Animal Husbandry, Dairying and Fisheries in Expenditure Budget, Government of India.

Animal Husbandry – RKVY

Period of implementation: 2007 ongoing

Expenditure is primarily health oriented, including improvement in fodder production, genetic upgrading of cattle and buffaloes, enhancement of milk production, enlarging raw material base for leather industry, improvement in livestock health, etc. Source: Expenditure data from Annual Report of Department of Agriculture, Cooperation and Farmers' Welfare, Government of India. Expenditure estimated for 2018: expenditure in previous year multiplied by the mean annual rate of change in 2015-17.

Dairy Development - RKVY

Period of implementation: 2007 ongoing

Expenditures support the purchase of tractors fitted with fodder block machine, purchase of milking machines, milk collection centres and infrastructure, setting up cold chain for storing and transporting of frozen semen, etc. Expenditures under this programme are split 33%-67% between PSE and GSSE. Source; Expenditure data from Annual Report of Department of Agriculture, Cooperation and Farmers' Welfare, Government of India. Expenditure estimated for 2018: expenditure in previous year multiplied by the mean annual rate of change in years 2015-17.

I.2. Pest and disease inspection and control

Integrated Pest Management

Period of implementation: 2007-14

Expenditure supported the development of facilities like Disease Forecasting Units, bio-control labs, and plant health clinics. Source: Expenditure data from Department of Agriculture, Cooperation and Farmers' Welfare, Government of India.

Plant Protection

Period of implementation: 2000-08

Expenditure supported Integrated Pest Management and availability of safe and quality pesticides for sustaining crop production. Source: Expenditure data from Department of Agriculture, Cooperation and Farmers' Welfare, Government of India.

Mission for Integrated Development of Horticulture - Promotion of IPM

Period of implementation: 2014 ongoing

Expenditure supports Integrated Pest Management at 50% of the cost, subject to a maximum of INR 1 000 per ha per beneficiary, developing facilities like disease forecasting units, bio control labs, plant health clinics, etc. Source: Expenditure under each component of MIDH obtained through correspondence with the Department of Agriculture, Cooperation and Farmers' Welfare. Expenditure estimated for 2018: payment in previous year multiplied by mean annual rate of change in 2015-17.

Sub-Mission on Plant Protection and Plant Quarantine

Period of implementation: 2014 ongoing

Expenditure supports the keeping of crops disease free using scientific and environment friendly techniques, and the monitoring of pesticide residues in food commodities and environmental samples. Source: Expenditure data from Department of Agriculture, Cooperation and Farmers' Welfare, Government of India.

National Livestock Mission

Period of implementation: 2014 ongoing

Expenditure supports, for example, greater availability of fodder and feed, promotion of applied research, livestock insurance for farmers, and control and prevention of animal diseases. Expenditures under this programme are split 50%-50% between PSE and GSSE. Source: Expenditure data under Department of Animal Husbandry, Dairying and Fisheries in Expenditure Budget, Government of India.

Dairy development/Dairy Vikas Abhiyan

Period of implementation: 2000 ongoing

Expenditure supports the development of dairy industry, dairy entrepreneurship, livestock and fodder development through the Livestock Health and Disease Control Programme, National Livestock Mission, National Programme for Bovine Breeding, Cattle Development and a scheme of Indigenous Breeds. Source: Expenditure data under Department of Animal Husbandry, Dairying and Fisheries in Expenditure Budget, Government of India.

I.3. Input control

Strengthening and Modernisation of Plant Quarantine Facilities in India

Period of implementation: 2009-13

Expenditure supported the prevention of any insect, fungus, or any other pest which may be destructive to crops. Source: Expenditure data under Department of Agriculture, Cooperation and Farmers' Welfare in Expenditure Budget, Government of India.

Strengthening & Modernization of Pest Management Approach in the Country

Period of implementation: 2009-13

Expenditure supported the monitoring and controlling of desert locust, integrated pest management and implementation of the Insecticides Act. Source: Expenditure data under Department of Agriculture, Cooperation and Farmers' Welfare in Expenditure Budget, Government of India.

National Project on Management of Soil, Health and Fertility

Period of implementation: 2008-10; 2012 ongoing

Expenditure supports the strengthening of Soil Testing Laboratories, fertiliser quality control laboratories and promotion of integrated nutrient management. Source: Expenditure data under Department of Agriculture, Cooperation and Farmers' Welfare in Expenditure Budget, Government of India.

Soil Health Card and Grants for States and Union Territories (UTs)

Period of implementation: 2013

Expenditure supported the strengthening of soil and fertiliser testing facilities, ensuring quality control requirements of fertilisers, bio-fertilisers and organic fertilisers. Source: Expenditure data under Department of Agriculture, Cooperation and Farmers' Welfare in Expenditure Budget, Government of India.

All India Soil and Land Use Survey and Application of Remote Sensing Technology for Soil Survey

Period of implementation: 2000 and 2001; 2004-15

Expenditure supported the conduct of soil survey of various kinds and intensities to provide sound database for land based developmental programmes to the State user departments and other Government needs. Source: Expenditure data under Department of Agriculture, Cooperation and Farmers' Welfare in Expenditure Budget, Government of India.

Alkali Land Reclamation and Development Programme

Period of implementation: 2000 and 2001

Expenditure supports improving condition and productivity status of alkali and acid soils for restoring optimum crop production. Source: Expenditure data under Department of Agriculture, Cooperation and Farmers' Welfare in Expenditure Budget, Government of India.

Seed – RKVY

Period of implementation: 2007 ongoing

Expenditure supports setting up seed testing labs, seed processing facilities, storage godowns, seed certification agencies and seed multiplication farms. Source: Expenditure data under Department of Agriculture, Cooperation and Farmers' Welfare in Expenditure Budget, Government of India. Expenditures estimated for 2018: expenditure in previous year multiplied by the mean annual rate of change in 2015-17.

Fertilizer – RKVY

Period of implementation: 2007 ongoing

Expenditure supports setting up new fertiliser quality control laboratories and strengthening them. Source: Expenditure data under Department of Agriculture, Cooperation and Farmers' Welfare in Expenditure Budget, Government of India. Expenditures estimated for 2018: expenditure in previous year multiplied by the mean annual rate of change in years 2015-17.

Implementation of Insecticides Act

Period of implementation: 2000-15

Expenditure supported analysis of pesticide samples, strengthening State Pesticides Testing Laboratories for quality, safe and efficacious pesticides to farming community. Source: Expenditure data under Department of Agriculture, Cooperation and Farmers' Welfare in Expenditure Budget, Government of India.

Sub-Mission on Seed and Planting Material

Period of implementation: 2015 ongoing

Expenditure supports the public seed producing organisations to improve their capacity and quality of seed production and seed banks to increase production of quality seeds. Source: Expenditure data under Department of Agriculture, Cooperation and Farmers' Welfare in Expenditure Budget, Government of India.

Mission for Integrated Development of Horticulture - Rejuvenation of senile orchard

Period of implementation: 2015 ongoing

Expenditures support rejuvenating economically unviable orchards and unproductive plantations through improved technology. Expenditures under this programme are split 50%-50% between PSE and GSSE. Source: Expenditures under each component of MIDH obtained through correspondence with the Department of Agriculture, Cooperation and Farmers' Welfare, Government of India. Expenditures data estimated for 2018: payment in previous year multiplied by mean annual rate of change in 2015-17.

Grants for replanting and rejuvenation of coconut gardens

Period of implementation: 2009-13

Expenditure supports increase in production and productivity of coconuts through area expansion and enhanced promotion of coconut cultivation and downstream industry. Source: Expenditure data under Department of Agriculture, Cooperation and Farmers' Welfare in Expenditure Budget, Government of India.

J. Development and maintenance of infrastructure

J.1. Hydrological infrastructure

Micro Irrigation/Micro Irrigation - RKVY

Period of implementation: 2007 ongoing

Expenditure supports farm ponds, field channels, piped water conveyance system, percolation and minor irrigation tanks. Source: Expenditure data from Annual Report of Department of Agriculture, Cooperation and Farmers' Welfare. Expenditure estimated for 2018: expenditure in previous year multiplied by the mean annual rate of change in 2015-17.

National Watershed Development Programme for Rainfed Agriculture

Period of implementation: 2000

Expenditure supported efforts to increase groundwater recharge, tube wells and water bodies, change cropping pattern and improve yields. Components include watershed treatment activities, training and watershed community organisations. Source: Expenditure data from Ministry of Water Resources, River Development and Ganga Rejuvenation, Government of India.

Water Management

Period of implementation: 2001-03

Expenditure supported construction of shallow tube-wells with pump sets, lift irrigation points, and electric/diesel pump sets. Source: Expenditure data from Ministry of Water Resources, River Development and Ganga Rejuvenation (name changed from Ministry of Water Resources).

Watershed Development Council

Period of implementation: 2000-06; 2008 and 2009

Expenditure supported execution of World Bank assisted projects. Source: Expenditure data from Ministry of Water Resources, River Development and Ganga Rejuvenation (name changed from Ministry of Water Resources).

Soil Conservation in Catchment of River Valley Projects and Flood Prone Areas

Period of implementation: 2000-06

Expenditure supported grant to Damodar Valley Corporation for conducting training programmes. Source: Expenditure data from Ministry of Water Resources, River Development and Ganga Rejuvenation (name changed from Ministry of Water Resources).

Investment in Damodar Valley Corporation

Period of implementation: 2002-07

Expenditure concerns the Damodar Valley Corporation. This corporation operates under the Ministry of Power and is involved with power generation and transmission, water management and mining. Source: Expenditure data under Department of Agriculture, Cooperation and Farmers' Welfare in Expenditure Budget, Government of India.

Capital Expenditure on Irrigation

Period of implementation: 2000 ongoing

Expenditure on irrigation projects is for the creation of water resources. Capital expenditure on Major and Medium Irrigation Projects (MMI), Minor Irrigation Projects, and Command Area Development (CAD) are added to obtain capital expenditure on irrigation. Source: Data for MMI, Minor and CAD from Financial Aspects of Irrigation Projects in India (December 2015), Information Systems Organisation, Water Planning & Projects Wing, Central Water Commission (pages 62, 94, 126) http://www.cwc.gov.in/main/downloads/Final%20FAI_11.01.2016.pdf. Expenditure after 2014 from Reserve Bank of India (RBI) state finances, <https://rbi.org.in/Scripts/PublicationsView.aspx?id=18437>.

Pradhan Mantri Krishi Sinchai Yojna (PMKSY)

Period of implementation: 2015 ongoing

Expenditure supports faster completion of ongoing major and medium irrigation, creation of new water sources through minor irrigation, command area development, strengthening and creation of distribution networks, rejuvenation of traditional water storage systems, water harvesting structures such as check dams, effective rainfall management, and construction of micro irrigation. Source: Expenditure data from Department of Agriculture, Cooperation and Farmers' Welfare and Department of Land Resources and Ministry of Water Resources, River Development and Ganga Rejuvenation.

Rainfed Area Development and Climate Change

Period of implementation: 2015 ongoing

Expenditure supports promotion of integrated farming systems to enable farmers to enhance farm returns and to mitigate the impacts of drought, flood or other extreme weather events through conservation technologies and protective and life-saving irrigation. Source: Expenditure data from Department of Agriculture, Cooperation and Farmers' Welfare, Ministry of Agriculture and Farmers' Welfare, Government of India.

Mission for Integrated Development of Horticulture - Creation of Water Resources

Period of implementation: 2014 ongoing

Expenditures support creating water sources through construction of community tanks, farm ponds and reservoirs with plastic or RCC lining to ensure lifesaving irrigation to horticulture crops. Expenditures under this programme are split 50%-50% between PSE and GSSE. Source: Expenditures under each component of MIDH obtained through correspondence with the Department of Agriculture, Cooperation and Farmers' Welfare, Ministry of Agriculture and Farmers' Welfare, Government of India. Expenditure data estimated for 2018: expenditure in previous year multiplied by mean annual rate of change in 2015-17.

Natural Resource Management - RKVY

Period of implementation: 2007 ongoing

Expenditure supports soil and water conservation activities and reclamation of soil problems. Source: Expenditure data from Annual Report of Department of Agriculture, Cooperation and Farmers' Welfare,

Ministry of Agriculture and Farmers' Welfare, Government of India. Expenditure estimated for 2018: expenditure in previous year multiplied by the mean annual rate of change in years 2015-17.

J.2. Storage, marketing and other physical infrastructure

Marketing and Post Harvest Management - RKVY

Period of implementation: 2007 ongoing

Expenditure supports construction of market infrastructure facilities, storage facilities, farmers' service centre, food grain procurement centres, etc. Source: Expenditure data from Annual Report of Department of Agriculture, Cooperation and Farmers' Welfare, Ministry of Agriculture and Farmers' Welfare, Government of India. Expenditure for 2018: expenditure in previous year multiplied by the mean annual rate of change in 2015-17.

Construction of Roads - NMOOP (Oil Palm)

Period of implementation: 2014 ongoing

Expenditure supports construction of roads from oil palm fields to nearest processing centres and establishment of oil palm processing units. Source: Expenditure data from correspondence with Department of Agriculture, Cooperation and Farmers' Welfare, Ministry of Agriculture and Farmers' Welfare, Government of India. Expenditure for 2018: expenditure in previous year multiplied by the mean annual rate of change in 2015-17.

Development and Strengthening of Seed Infrastructure Facilities for Production and Distribution of Seeds

Period of implementation: 2009-14

Expenditure supported development and strengthening of infrastructure facilities for production and distribution of quality seeds. Source: Expenditure data from Department of Agriculture, Cooperation and Farmers' Welfare, Ministry of Agriculture and Farmers' Welfare, Government of India.

Construction of Rural Godowns

Period of implementation: 2009-13

Expenditure supported construction of godowns, a type of storage facility. Source: Expenditure data from Department of Agriculture, Cooperation and Farmers' Welfare, Ministry of Agriculture and Farmers' Welfare, Government of India.

Development of Market Infrastructure Grading and Standardisation

Period of implementation: 2009-13

Expenditure supported development of market infrastructure. Source: Expenditure data from Department of Agriculture, Cooperation and Farmers' Welfare, Ministry of Agriculture and Farmers' Welfare, Government of India.

Mission for Integrated Development of Horticulture - Marketing Infrastructure

Period of implementation: 2014 ongoing

Expenditure supports setting up wholesale markets, rural markets and retail markets, setting up static and mobile vending carts and platforms with cool chamber. Source: Expenditures under each component of MIDH obtained through correspondence with the Department of Agriculture, Cooperation and Farmers' Welfare, Ministry of Agriculture and Farmers' Welfare, Government of India. Expenditure data estimated for 2018: expenditure in previous year multiplied by mean annual rate of change in 2015-17.

Mission for Integrated Development of Horticulture - Integrated Post-harvest management

Period of implementation: 2014 ongoing

Expenditure supports activities including grading, packaging, handling, storage, transportation and distribution. Emphasis is given for longest possible storage through establishment of refrigerated vans, mobile pre-cooling units and preservative units. Source: Expenditures under each component of MIDH obtained through correspondence with the Department of Agriculture, Cooperation and Farmers' Welfare, Ministry of Agriculture and Farmers' Welfare, Government of India. Expenditure data estimated for 2018: expenditure in previous year multiplied by mean annual rate of change in 2015-17.

Animal Health Institute

Period of implementation: 2015 ongoing

Expenditure supports animal quarantine services stations and Chaudhary Charan Singh National Institute of Animal Health. Source: Expenditure data from Department of Animal Husbandry, Dairying and Fisheries (DAHDF), Ministry of Agriculture and Farmers' Welfare, Government of India.

Small Livestock Institute

Period of implementation: 2015 ongoing

Expenditure supports Central Poultry Development Organization, Regional Fodder Stations and Central Sheep Breeding Farm. Source; Expenditure data from Department of Animal Husbandry, Dairying and Fisheries (DAHDF), Ministry of Agriculture and Farmers' Welfare, Government of India.

Breed Improvement Institute

Period of implementation: 2015 ongoing

Expenditure supports Central Cattle Breeding Farms, Central Herd Registration Scheme and Central Frozen Semen Production & Training Institute. Source: Expenditure data from Department of Animal Husbandry, Dairying and Fisheries (DAHDF), Ministry of Agriculture and Farmers' Welfare, Government of India.

Organic Farming - RKVY

Period of implementation: 2007 ongoing

Expenditure supports fruit and vegetable waste and compost production units. Source: Expenditure data from Annual Report of Department of Agriculture, Cooperation and Farmers' Welfare, Ministry of Agriculture and Farmers' Welfare, Government of India. Expenditure estimated for 2018: expenditure in previous year multiplied by the mean annual rate of change in 2015-17.

Mission for Integrated Development of Horticulture – Cold Storage

Period of implementation: 2014 ongoing

Expenditures support construction of energy efficient cold storage infrastructure facilities. Expenditures under this programme are split 50%-50% between PSE and GSSE. Source: Expenditures under each component of MIDH obtained through correspondence with the Department of Agriculture, Cooperation and Farmers' Welfare, Ministry of Agriculture and Farmers' Welfare, Government of India. Expenditure data estimated for 2018: expenditure in previous year multiplied by mean annual rate of change in 2015-17.

Mission for Integrated Development of Horticulture - Food Processing Unit

Period of implementation: 2014 ongoing

Expenditure supports the promotion of large-scale processing units. The programme also supports product promotion of horticulture commodities along with market intelligence services. Source: Expenditures under each component of MIDH obtained through correspondence with the Department of Agriculture, Cooperation and Farmers' Welfare, Ministry of Agriculture and Farmers' Welfare, Government of India. Expenditure data estimated for 2018: expenditure in previous year multiplied by mean annual rate of change in 2015-17.

Mission for Integrated Development of Horticulture - Pollination support through beekeeping

Period of implementation: 2014 ongoing

Expenditure supports the development of infrastructural facilities for scientific bee keeping through development of nucleus stock of honeybees and bee breeding. The programme also provides assistance in the form of distributing honeybee hives and equipment for bee keeping. Source: Expenditures under each component of MIDH obtained through correspondence with the Department of Agriculture, Cooperation and Farmers' Welfare, Ministry of Agriculture and Farmers' Welfare, Government of India. Expenditure data estimated for 2018: expenditure in previous year multiplied by mean annual rate of change in 2015-17.

J.3. Institutional infrastructure

National Rain fed Area Authority

Period of implementation: 2006; 2008; 2010

Expenditure supported the National Rain fed Authority, which focuses on problems of rain fed areas of the country. Source: Expenditure data from correspondence with Department of Agriculture, Cooperation and Farmers' Welfare, Ministry of Agriculture and Farmers' Welfare, Government of India.

Coconut Development Board

Period of implementation: 2009-13

Expenditure supported this board to expand area under coconut and promote integrated farming for productivity improvement. Source: Expenditure data from Department of Agriculture, Cooperation and Farmers' Welfare, Ministry of Agriculture and Farmers' Welfare, Government of India.

National Horticulture Board

Period of implementation: 2008-13

Expenditure supported this board, with a mandate to promote integrated development in horticulture, to help in co-ordinating, stimulating and sustaining the production and processing of fruits and vegetables. Source: Expenditure data from Department of Agriculture, Cooperation and Farmers' Welfare, Ministry of Agriculture and Farmers' Welfare, Government of India.

Grants for matching equity grant to Farmers Producers Organisations (FPOs)

Period of implementation: 2013

Expenditure supported Farmer Producer Organization (FPOs) by providing them matching equity grants operated by Small Farmers' Agri-business Consortium (SFAC) to enhance their creditworthiness, viability and sustainability. Source: Expenditure data from Department of Agriculture, Cooperation and Farmers' Welfare, Ministry of Agriculture and Farmers' Welfare, Government of India.

Grants to SFAC for Credit Guarantee Fund for Farmers Producers Organisations (FPOs)

Period of implementation: 2013

Expenditure supported the protection of eligible lending institutions by extending credit guarantees and covering their lending risks. SFAC is Small Farmers Agri-business Consortium. Source: Expenditure data from Department of Agriculture, Cooperation and Farmers' Welfare, Ministry of Agriculture and Farmers' Welfare, Government of India.

National Land Resources Commission/Board

Period of implementation: 2000 and 2001; 2004

Expenditure supported national land resources institutions. Source: Expenditure data from Department of Agriculture, Cooperation and Farmers' Welfare, Ministry of Agriculture and Farmers' Welfare, Government of India.

National Cooperative Development Cooperation

Period of implementation: 2000-02

Expenditure supported planning, promoting and financing programmes for production, processing, marketing, storage, export and import of agricultural produce, food stuffs, certain other notified commodities, e.g. fertilisers, insecticides, agricultural machinery, lac, soap, kerosene oil, textile, rubber etc., supply of

consumer goods and collection, processing, marketing, storage and export of minor forest produce through co-operatives, besides an income generating stream of activities such as poultry, dairy, fishery, sericulture, handloom etc. Source: Expenditure data from Department of Agriculture, Cooperation and Farmers' Welfare, Ministry of Agriculture and Farmers' Welfare, Government of India.

Development of State Land Development Banks

Period of implementation: 2000 and 2001; 2003-12; 2015

Expenditure supported land development banks to raise working capital from share capital, deposits and debentures. Source: Expenditure data from Department of Agriculture, Cooperation and Farmers' Welfare, Ministry of Agriculture and Farmers' Welfare, Government of India.

Small Farmers Agri-business Consortium

Period of implementation: 2009-13

Expenditure supported SFAC, which is focused on increasing incomes of small and marginal farmers through aggregation and development of agribusiness. SFAC is Small Farmers Agri-business Consortium. Source: Expenditure data from Department of Agriculture, Cooperation and Farmers' Welfare, Ministry of Agriculture and Farmers' Welfare, Government of India.

Mission for Integrated Development of Horticulture - Centre for excellence

Period of implementation: 2014 ongoing

Expenditure supports the demonstration of farming techniques and provision of training to farmers in order to increase adoption of protected cultivation. This facility will also serve as a source of planting material and seedlings for horticulture crops. Source: Expenditures under each component of MIDH obtained through correspondence with the Department of Agriculture, Cooperation and Farmers' Welfare, Ministry of Agriculture and Farmers' Welfare, Government of India. Expenditure data estimated for 2018: expenditure in previous year multiplied by mean annual rate of change in 2015-17.

J.4. Farm restructuring

K. Marketing and promotion

K.1. Collective schemes for processing and marketing

Agriculture Marketing

Period of implementation: 2000-04; 2006-08

Expenditure supported the strengthening of grading and export quality control, marketing information networks, development of market infrastructure and grading and standardisation. Source: Expenditure data from Department of Agriculture, Cooperation and Farmers' Welfare, Ministry of Agriculture and Farmers' Welfare, Government of India.

Integrated Scheme on Agricultural Marketing

Period of implementation: 2014 ongoing

Expenditure supports the promotion of agri-marketing through the creation of marketing and agribusiness infrastructure, including storage. Source: Expenditure data from Department of Agriculture, Cooperation and Farmers' Welfare, Ministry of Agriculture and Farmers' Welfare, Government of India.

Assistance to National Cooperative Development Corporation for Cooperative Development

Period of implementation: 2000; 2002-13

Expenditure supported warehousing, marketing and processing in the co-operative field. Source: Expenditure data from Department of Agriculture, Cooperation and Farmers' Welfare, Ministry of Agriculture and Farmers' Welfare, Government of India.

Integrated Scheme on Agricultural Cooperation

Period of implementation: 2015 ongoing

Expenditure supports streamlining the co-operative marketing structure, diversification of activities, capacity building and involving grass-root level co-operatives. Source: Expenditure data from Department of Agriculture, Cooperation and Farmers' Welfare, Ministry of Agriculture and Farmers' Welfare, Government of India.

K.2.Promotion of agricultural products

L. Cost of public stockholding

Cost of public stockholding

Period of implementation: 2000 ongoing

The cost of stockholding of wheat and rice consists of the “carrying cost of buffer stocks”, which is the sum of costs incurred for the buffer stocks held by the Food Corporation of India (FCI) and the FCI expenditure on reimbursement to state governments and agencies of carryover charges. FCI expenditure data from annual reports of the FCI. In addition, the cost of public stockholding includes the part borne by the Government of India of the cost of maintaining buffer stocks of sugar held by state, private and co-operative agencies (based on fixed specific norms). Expenditure data from Union Budget documents. Expenditure estimated for 2017 and 2018 as previous year amount multiplied by mean annual rate of change in preceding three years.

M. Miscellaneous

Cooperatives - RKVY

Period of implementation: 2008 ongoing

Expenditure supports co-operatives through the RKVY scheme. Source: Expenditure data from Annual Report of Department of Agriculture, Cooperation and Farmers' Welfare, Ministry of Agriculture and Farmers' Welfare, Government of India. Expenditure estimated for 2018: expenditure in previous year multiplied by the mean annual rate of change in 2015-17.

Other Programmes for Livestock

Period of implementation: 2000-15

Expenditures supported a variety of livestock programmes. Expenditures under this programme are split 50%-50% between PSE and GSSE. Source: Expenditure data from DAHDF, Ministry of Agriculture and Farmers' Welfare, Government of India.

Lump sum Provision for Project/Schemes for the Benefit of the North-eastern Region and Sikkim for Animal Husbandry

Period of implementation: 2000 and 2001; 2003-08

Expenditures supported animal husbandry projects and schemes in the North-eastern Region and Sikkim. Expenditures under this programme are split 50%-50% between PSE and GSSE. Source: Expenditure data from Department of Animal Husbandry, Dairying and Fisheries (DAHDF), Ministry of Agriculture and Farmers' Welfare, Government of India.

Special Package for Suicide Prone Districts

Period of implementation: 2007-13

Expenditure supported the conditions of farmers in the identified districts. Expenditure under this programme are split 50%-50% between PSE and GSSE. Source: Expenditure data from Annual Report of Department of Agriculture, Cooperation and Farmers' Welfare, Ministry of Agriculture and Farmers' Welfare, Government of India.

Other Programmes of Crop Husbandry

Period of implementation: 2000-08; 2010; 2012 ongoing

Expenditure supports a variety of crop husbandry programmes. Expenditures under this programme are split 50%-50% between PSE and GSSE. Source: Expenditure data from correspondence with Department of Agriculture, Cooperation and Farmers' Welfare, Ministry of Agriculture and Farmers' Welfare, Government of India.

Lump sum Provision for Projects/Schemes for the Benefit of North-eastern Region and Sikkim for Crop Husbandry

Period of implementation: 2000-08; 2015

Expenditure supported crop husbandry projects and schemes in the North-eastern Region and Sikkim. Expenditures are split 50%-50% between PSE and GSSE. Source: Expenditure data under Department of Agriculture, Cooperation and Farmers' Welfare in Expenditure Budget, Government of India.

Mission for Integrated Development of Horticulture – Adoption of Organic Farming

Period of implementation: 2014 ongoing

Expenditure support farmers' adoption of organic farming in specific crops by providing on-farm services that can guide farmers in their decision to cultivate new crops, with improved farming practices. Source; Expenditures under each component of MIDH obtained through correspondence with the Department of Agriculture, Cooperation and Farmers' Welfare, Ministry of Agriculture and Farmers' Welfare, Government of India. Expenditure data estimated for 2018: expenditure in previous year multiplied by mean annual rate of change in 2015-17.

Other programmes on horticulture

Period of implementation: 2009-13

Expenditure supported trade development, coconut palm insurance and bamboo mission. Source: Expenditure data from the Department of Agriculture, Cooperation and Farmers' Welfare, Ministry of Agriculture and Farmers' Welfare, Government of India.

V.1 Consumer Support Estimate (CSE): Associated with agricultural production, i.e. for the quantities of commodities domestically produced, excluding the quantities used on-farm as feed -- excess feed cost. [Sum of N to Q; when negative, the amounts represent an implicit tax on consumers].

N. Transfers to producers from consumers: Associated with market price support on all domestically produced commodities, estimated by increasing the transfers calculated for the MPS commodities according to their share in the total value of production $[(N.1) / (I.1) \times 100]$.

N.1. Of which MPS commodities: Sum of the values of transfers from consumers to producers associated with market price support for the MPS commodities as calculated in Tables 4.1 to 4.20.

O. Other transfers from consumers: Transfers to the budget associated with market price support on the quantities imported of domestically produced commodities, estimated by increasing the transfers calculated for the MPS commodities according to their share in the total value of production $[(O.1) / (I.1) \times 100]$.

O.1. Of which MPS commodities: Sum of the transfers to the budget associated with market price support on the quantities imported of the MPS commodities as calculated in Tables 4.1 to 4.20.

P. Transfers to consumers from taxpayers

P.1. Commodity specific transfers to consumers: Sum of commodity specific transfers from taxpayers to consumers (farm gate level) from Tables 4.1 to 4.20.

P.2. Non-commodity specific transfers to consumers: Sum of non-commodity specific transfers from taxpayers to consumers, including:

Total Central Food Subsidy

Period of implementation: 2000 ongoing

Item “Food subsidy” in the budget of the Department of Food and Public Distribution, Ministry of Consumer Affairs, Food and Public Distribution, which includes the subsidy by the central government to the Food Corporation of India for procurement and distribution of wheat and rice under the Targeted Public Distribution System, Mid-day Meal Scheme, and Other Welfare Schemes. It also includes corresponding subsidies to state governments under decentralised procurement and direct cash payment schemes. Expenditure data are “actual” (2018-19: “revised estimate”) from Expenditure Budget, Government of India.

Total State Food Subsidy

Period of implementation: 2000 ongoing

Sum of expenditure by state governments under the heads (i) Food Subsidies (under Account of Expenditure on Food Storage and Warehousing), and (ii) Consumer Subsidies (under Account of Expenditure on Civil Supplies), interpreted as expenditures related to the procurement and distribution of wheat and rice under the Targeted Public Distribution System, mid-day meal scheme, and other welfare schemes. Reported in yearly publication “Combined Finance and Revenue Accounts of the Union and State Governments in India”, various years, Comptroller and Auditor General of India. State government expenditures by Gujarat, Haryana, Kerala, Jammu and Kashmir, Maharashtra and West Bengal, Goa, Jharkhand, Meghalaya, Nagaland, Uttar Pradesh are not included. Expenditure estimated for 2016, 2017 and 2018, respectively, as the mean expenditure in the preceding three years.

Q. Excess Feed Cost: Associated with market price support on quantities of domestically produced crops and used on-farm as feed as calculated (Sum of *Excess Feed Cost* in the MPS Tables for maize, soybeans, rapeseed, and groundnuts (4.5, 4.7, 4.8, 4.9)). Source: Quantities used as feed are from discussions with expert organisations as follows. Maize for poultry, eggs, mutton and milk production: CIRC (Central Institute for Research on Cattle), CIRB (Central Institute for Research on Buffalo), CPDO (Central Poultry Development Organization). Soybean for poultry, eggs, mutton and milk production: CIRC, CIRB, CPDO (quantity converted from oil cakes to seed by dividing by weight conversion coefficient 0.79). Rapeseed and Mustard for mutton and milk production: SEA (Solvent Extractors Association of India), CIRC, CIRB. Groundnut for milk production: SEA, CIRC, CIRB (quantity converted from oil cakes to seed by dividing by weight conversion coefficient 0.6). No allocations for feed use identified for wheat and rice.

V.2 Percentage CSE $[100 \times (V.1) / ((II) + (P))]$

V.3 Consumer NPC: For all agricultural commodities the consumer NPC is estimated as a weighted average of the consumer NPC calculated for the individual MPS commodities and shown in Table 2. For each commodity consumer NPC = domestic price paid by consumers (at the farm gate)/ border price (also at the farm gate).

V.4 Consumer NAC $[(1 / (100 - (V.2))) \times 100]$

VI. Total Support Estimate $[(III.1) + (IV) + (P)]$ and $[(R) + (S) + (T)]$

R. Transfers from consumers $[(N) + (O)]$

S. Transfers from taxpayers $[(III.1) - (O) + (IV) + (Q)]$

T. Budget revenues $[(O)]$

TABLE 2. INDIA: Breakdown of PSE by commodity specificity and other transfers

All data sets in Table 2 come from Tables 1 and 3.1 to 3.21 where definitions are included.

Definitions:

I. Producer Single Commodity Transfers (producer SCT): The annual monetary value of gross transfers from consumers and taxpayers to agricultural producers, measured at the farm level, arising from policy measures directly linked to the production of a single commodity such that the producer must produce the designated commodity in order to receive the payment. This includes policies where payments are specified on a per-commodity basis [Sum of SCTs for individual commodities from Tables 3.1 - 3.21].

Percentage producer SCT: The commodity SCT expressed as a share of gross farm receipts for the specific commodities (including support in the denominator). This indicator can be expressed for the total SCT (Table 2), or for a specific commodity (Table 3.1- 3.21).

$$\%SCT = 100 * SCT / (\text{value of production}_{COM} + A.2_{COM} + B_{COM} + C_{COM} + D_{COM})$$

$$\text{Share in Total PSE (\%): } SCT_{SHARE} = 100 * SCT / PSE$$

II. Group commodity transfers (GCT): The annual monetary value of gross transfers from consumers and taxpayers to agricultural producers, measured at the farm gate level, arising from policy measures whose payments are made on the basis that one or more of a designated list of commodities is produced. That is, a producer may produce from a set of allowable commodities and receive a transfer that does not vary with respect to this decision [GCT = B_{GROUP} + C_{GROUP} + D_{GROUP}].

$$\text{Share in Total PSE (\%): } GCT_{SHARE} = 100 * GCT / PSE$$

Transfers to specific groups of commodities: The GCT indicator is calculated for India for the following groups of commodities: all crops; oilseeds; all livestock; pulses.

III. All commodity transfers (ACT): The annual monetary value of gross transfers from consumers and taxpayers to agricultural producers, measured at the farm gate level, arising from policy measures that place no restrictions on the commodity produced but require the recipient to produce some commodity of their choice [ACT = C_{ALL} + B_{ALL} + D_{ALL}].

$$\text{Share in Total PSE (\%): } ACT_{SHARE} = 100 * ACT / PSE$$

IV. Other Transfers to Producers (OTP): The annual monetary value of gross transfers made under policies that do not fall in the above three cases (SCT, GCT, ACT). That is, payments that do not require any commodity production at all. [OTP = E + F + G]

$$\text{Share in Total PSE (\%): } OTP_{SHARE} = 100 * OTP / PSE$$

$$\text{V. Total PSE: } PSE = A + B + C + D + E + F + G = SCT + GCT + ACT + OTP$$

$$\text{Percentage PSE: } \%PSE = 100 * PSE / (\text{Total Value of Production at farm gate} + A.2 + B + C + D + E + F + G)$$

TABLE 3. INDIA: Producer Single Commodity Transfers (by commodity)

Tables 3.1 to 3.21 provide information on Producer Single Commodity Transfers (PSCT) for the following commodities: wheat, maize, rice (basmati and non-basmati), soybean, rapeseed, groundnuts, chickpea, other pulses, onions, potatoes, tomatoes, mangoes, bananas, sugar cane, cotton, milk, bovine meat, sheep meat, poultry, eggs and “other commodities”. All data sets in the calculation SCT by commodity come from Tables 1 and 4.1 - 4.21 where definitions are included.

Definitions:

I. Level of production: Data from respective commodity Tables 4.1 - 4.21 (Market Price Support tables)

II. Value of production (at farm gate): Data from respective commodity Tables 4.1 - 4.21 (Market Price Support tables)

III. Producer Single Commodity Transfers: Sum of transfers to respective single-commodity in categories A, B, C and D.

A. Support based on commodity output

A1. Market Price Support [Data for respective commodity from Table 4]

A2. Payments based on output

Payments based on output (A.2) provided to respective single commodity [Data from Table 1]. (Note: no payments based on output are recorded for India in the years 2000-2016.)

B. Payments based on input use, single commodity [$B1_{COM}+B2_{COM}+B3_{COM}$]

B1. Based on variable input use

Payments based on variable input use ($B.1_{COM}$) provided to respective single commodity [Data from Table 1].

B2. Based on fixed capital formation

Payments based on fixed capital formation ($B.2_{COM}$) provided to respective single commodity [Data from Table 1].

B3. Based on on-farm services

Payments based on on-farm services ($B.3_{COM}$) provided to respective single commodity [Data from Table 1].

C. Payments based on current A/An/R/I, production required, single commodity

Payments based on current A/An/R/I (C_{COM}) provided to respective single commodity [Data from Table 1].

D. Payments based on non-current A/An/R/I, production required, single commodity

Payments based on non-current A/An/R/I (D_{COM}) provided to respective single commodity [Data from Table 1].

IV. Percentage producer SCT : %SCT = 100*(III) / ((II) + (A.2) + (B_{COM}) + (C_{COM}) + (D_{COM}))

TABLE 4. INDIA: Market Price Support and Consumer Single Commodity Transfers

Tables 4.1 to 4.21, contain calculation of the Market Price Support (MPS) and Consumer Single Commodity Transfers (consumer SCT) for the following commodities: wheat, maize, rice (non-basmati and basmati), soybeans, rapeseed, groundnuts, chickpea, other pulses, onions, potatoes, tomatoes, mangoes, bananas, sugar cane, cotton, milk, bovine meat, sheep meat, poultry, eggs and “other commodities”. The data sets used in calculation of the MPS and consumer SCT by commodity are described below. Values for “other commodities” are derived using information on total Market Price Support and Value of Production, and individual commodity data.

Definitions:

WHEAT

I. Level of production

Total production of wheat (durum and non-durum).

Source 2000-14: Agricultural Statistics at a Glance, Department of Agriculture, Cooperation and Farmers’ Welfare, Ministry of Agriculture and Farmers’ Welfare, Government of India; 2015-18: Directorate of Economics and Statistics, Ministry of Agriculture and Farmers’ Welfare, Government of India (2018 data represent first advance estimates).

II. Producer prices (at farm gate)

Monthly state-level average prices in markets located very close to the producer or farm gate (assumed to represent farm gate prices) are observed for the months of the harvest period (April to June) in states that together represent at least half of the national production (Punjab, Uttar Pradesh and Haryana represent 57% of total wheat production in 2014-16). As producers sell more than 90% of output in the market immediately after harvesting due to limited farm storage possibilities, a simple average of the monthly average prices in the harvest period in a state is considered to represent the average price for the whole financial year in the state. Weighting the individual state-level prices by the share of each state in their combined production of wheat generates a countrywide representative price of wheat.

Source: Agmarknet (web portal), Directorate of Marketing and Inspection, Department of Agriculture, Cooperation and Farmers’ Welfare, Ministry of Agriculture and Farmers’ Welfare, Government of India. Years when Agmarknet data are not available (2000 and 2001) use data from the Directorate of Economics and Statistics, Ministry of Agriculture and Farmers’ Welfare, Government of India.

III. Value of production (at farm gate) [(I)*(II)]

IV. Trade status

The trade status is determined based on exports and imports data: for 2000-05: Net exporter (NE); 2006-10: Net importer (NI); 2011-15: Net exporter (NE); 2016-18: Net importer (NI).

Source: 2000-16: UN Comtrade database, United Nations; 2017-18: DGFT (Directorate General of Foreign Trade), Ministry of Commerce and Industry, Government of India (preliminary data for financial year 2018-19 covers the period from April to November 2018).

V. Market price differential at the farm gate

Calculated as Producer price (at farm gate) less Reference price (at farm gate). In 2006-10 and 2017-18, wheat is an imported commodity to which MFN tariffs apply; producer prices were nevertheless below reference prices and thus the resulting negative market price differentials were considered to be zero, in accordance with the PSE Manual for an imported commodity. In all other years, wheat is a net exported commodity and when producer prices are below reference prices, the negative gaps are kept as they are a result of restrictive policies governing the marketing of agricultural commodities in India (the Essential Commodities Act (ECA) and the state-level Agricultural Produce Market Committee Acts (APMC), which influence pricing, procuring, stocking, moving, and trading) as well as of on and off export restrictions applied throughout the period covered.

VI. Reference prices at the farm gate (including the definition of the margin)

F.o.b. export price of Wheat US No. 2, Hard Red Winter, US (Gulf), financial year average (April to March) [1]. *Add* transportation cost to the Indian border (freight US Gulf to Mundra, estimated as 13% of the f.o.b. export price [2]). *Subtract* (when exportable) marketing margin (producer to wholesale) and transportation to most important wholesale markets (estimated as 2.5% of Producer price (at farm gate)) (*add* when importable) [3]. *Subtract* (when exportable) transportation cost from most important wholesale markets to Mundra (estimated as 4.6% of Producer price (at farm gate)) (*add* when importable) [4]. *Subtract* (when exportable) port charges (estimated as 1.5% of f.o.b. export price) (*add* when importable) [5].

Sources: [1] GIEWS (Global Information and Early Warning System), Food and Agriculture Organization of the United Nations (FAO); [2] Interviews and discussions with Indian freight forwarders and logistic companies; [3] Interviews with traders and commodity experts in India, accounting where relevant for processing costs and fees paid to intermediary agents; [4] Railway transportation costs based on data from the Ministry of Railways. Trucking costs based on discussions with trucking companies and individual truckers; [5] Based on publicly available information from the website of the ports examined and discussions with ports staff, various importers, and freight handlers.

VII. Level of consumption (at farm gate)

Consumption equals total domestic use during the financial year: total production plus imports minus exports [1], minus change in public stocks (data on private stocks is not available; estimated to be low in light of trade and market restricting government policies implemented in an *ad hoc* manner). Change in public stocks is estimated as the stock position on 1st April of the current year minus that of the previous year [2].

Sources: [1] DGFT (Directorate General of Foreign Trade), Ministry of Commerce and Industry, Government of India; [2] Food Grain Bulletin, Department of Food and Public Distribution, Government of India.

VIII. Consumption prices (at farm gate)

Implicit price corresponding to reference price plus the market price differential.

Source: See Reference prices (VI) and Market Price Differential (V).

IX. Value of consumption (at farm gate) [(VII)*(VIII)]

Level of consumption times Consumption price (at farm gate).

Source: Calculated based on items IV and V in Table 4.4 (tab WT MPS) in workbook 'Data_IND'.

MAIZE

I. Level of production

Total production of maize (yellow).

Source 2000-14: Agricultural Statistics at a Glance, Department of Agriculture, Cooperation and Farmers' Welfare, Ministry of Agriculture and Farmers' Welfare, Government of India; 2015-18: Directorate of Economics and Statistics, Ministry of Agriculture and Farmers' Welfare, Government of India (2018 data represent first advance estimates).

II. Producer prices (at farm gate)

Monthly state-level average prices in markets located very close to the producer or farm gate (assumed to represent farm gate prices) are observed for the months of the harvest period (October to January) in states that together represent at least half of the national production (Andhra Pradesh, Karnataka, Maharashtra, and Bihar represent 52% of total maize production in 2014-16). As producers sell more than 90% of output in the market immediately after harvesting due to limited farm storage possibilities, a simple average of the monthly average prices in the harvest period in a state is considered to represent the average price for the whole financial year in the state. Weighting the individual state-level prices by the share of each state in their combined production of maize generates a countrywide representative price of maize.

Source: Agmarknet (web portal), Directorate of Marketing and Inspection, Department of Agriculture, Cooperation and Farmers' Welfare, Ministry of Agriculture and Farmers' Welfare, Government of India. Years when Agmarknet data are not available (2000 and 2001) use data from the Directorate of Economics and Statistics, Ministry of Agriculture and Farmers' Welfare, Government of India.

III. Value of production (at farm gate) [(I)*(II)]

IV. Trade status

The trade status is determined based on exports and imports data: for 2000-18: Net exporter (NE).

Source: 2000-16: UN Comtrade database, United Nations; 2017-18: DGFT (Directorate General of Foreign Trade), Ministry of Commerce and Industry, Government of India (preliminary data for financial year 2018-19 covers the period from April to November 2018).

V. Market price differential at the farm gate

Calculated as Producer price (at farm gate) less Reference price (at farm gate). Maize is a net exported product for the entire 2000-18 period. For the years when producer prices are below reference prices, the negative gaps are kept as they are a result of restrictive policies governing the marketing of agricultural commodities in India (the Essential Commodities Act (ECA) and the state-level Agricultural Produce Market Committee Acts (APMC), which influence pricing, procuring, stocking, moving, and trading) as well as of on and off export restrictions applied throughout the period covered.

VI. Reference prices at the farm gate (including the definition of the margin)

F.o.b. export prices of Maize (US), no. 2, yellow, US Gulf ports, financial year average (April to March) [1]. *Add* transportation cost to the Indian border (freight US Gulf (Houston) to JNPT (Jawaharlal Nehru Port, state of Maharashtra), estimated as 19% of the f.o.b. export price [2]). *Subtract* marketing margin (producer to wholesale) and transportation to most important wholesale markets (estimated as 2.5% of Producer price

(at farm gate)) [3]. *Subtract* transportation cost from most important wholesale markets to JNPT (estimated as 2.6% of Producer price (at farm gate)) [4]. *Subtract* port charges (estimated as 1.5% of f.o.b. export price) [5].

Sources: [1] The Pink Sheet (World Bank Commodities Price Data); [2] Interviews and discussions with Indian freight forwarders and logistic companies; [3] Interviews with traders and commodity experts in India, accounting where relevant for processing costs and fees paid to intermediary agents; [4] Railway transportation costs based on data from the Ministry of Railways. Trucking costs based on discussions with trucking companies and individual truckers; [5] Based on publicly available information from the website of the ports examined and discussions with ports staff, various importers, and freight handlers.

VII. Level of consumption (at farm gate)

Consumption equals total domestic use during the financial year: total production plus imports minus exports [1].

Source: [1] DGFT (Directorate General of Foreign Trade), Ministry of Commerce and Industry, Government of India.

VIII. Consumption prices (at farm gate)

Implicit price corresponding to reference price plus the market price differential.

Source: See Reference prices (VI) and Market Price Differential (V).

IX. Value of consumption (at farm gate) [(VII)*(VIII)]

Level of consumption times Consumption price (at farm gate).

Source: Calculated based on items IV and V in Table 4.5 (tab MA MPS) in workbook 'Data_IND'.

RICE

I. Level of production

Sum of total production of non-basmati rice (representing on average 93% of total rice production) and total production of basmati rice (representing on average 7% of total rice production) [1]. Total production in milled weight derived by multiplying production of paddy rice by a conversion rate of 0.67 [2].

Sources: [1] Total production 2000-14: Agricultural Statistics at a Glance, Department of Agriculture, Cooperation and Farmers' Welfare, Ministry of Agriculture and Farmers' Welfare, Government of India; Total production 2015-18: Directorate of Economics and Statistics, Ministry of Agriculture and Farmers' Welfare, Government of India (2018 data for each basmati and non-basmati rice represent first advance estimates); [2] Production shares and conversion rate: communication with All India Rice Exporters' Association.

II. Producer prices (at farm gate)

Monthly state-level average prices in markets located very close to the producer or farm gate (assumed to represent farm gate prices) are observed for the months of the harvest period (October to January for both non-basmati rice and basmati rice) in states that together represent at least half of the national production

(West Bengal, Uttar Pradesh, Andhra Pradesh, and Punjab represented 48% of non-basmati rice production in 2014-16; Punjab and Uttar Pradesh represented 53% of total basmati rice production in 2014-16). As producers sell more than 90% of output in the market immediately after harvesting due to limited farm storage possibilities, a simple average of the monthly average prices in the harvest period in a state is considered to represent the average price for the whole financial year in the state. Weighting the individual state-level prices by the share of each state in their combined production of non-basmati rice generates a countrywide representative price of non-basmati rice. Weighting the individual state-level prices by the share of each state in their combined production of basmati rice generates a countrywide representative price of basmati rice. Weighting these prices of non-basmati rice and basmati rice by their respective shares of total production of rice (93% and 7%) generates a representative price of rice.

Source: Agmarknet (web portal), Directorate of Marketing and Inspection, Department of Agriculture, Cooperation and Farmers' Welfare, Ministry of Agriculture and Farmers' Welfare, Government of India. Years when Agmarknet data are not available (2000 and 2001) use data from the Directorate of Economics and Statistics, Ministry of Agriculture and Farmers' Welfare, Government of India.

III. Value of production (at farm gate) [(I)*(II)]

IV. Trade status

The trade status is determined based on exports and imports data: for 2000-18: Net exporter (NE).

Source: 2000-16: UN Comtrade database, United Nations; 2017-18: DGFT (Directorate General of Foreign Trade), Ministry of Commerce and Industry, Government of India (preliminary data for financial year 2018-19 covers the period from April to November 2018).

V. Market price differential at the farm gate

Calculated as Producer price (at farm gate) less Reference price (at farm gate). Rice is a net exported product for the entire 2000-18 period. For the years when producer prices are below reference prices, the negative gaps are kept as they are a result of restrictive policies governing the marketing of agricultural commodities in India (the Essential Commodities Act (ECA) and the state-level Agricultural Produce Market Committee Acts (APMC), which influence pricing, procuring, stocking, moving, and trading) as well as of on and off export restrictions applied throughout the period covered.

VI. Reference prices at the farm gate (including the definition of the margin)

Non-basmati rice: F.o.b. export prices of rice, Thai 25% broken, financial year average (April to March) [1]. *Add* transportation cost to the Indian border (freight Bangkok to Mundra/Kakinada), estimated as 2.1% of the f.o.b. export price [2]. *Subtract* marketing margin (producer to wholesale) and transportation to most important wholesale markets (estimated as 2.5% of Producer price (at farm gate)) [3]. *Subtract* transportation cost from most important wholesale markets to Mundra/Kakinada (estimated as 2.2% of Producer price (at farm gate)) [4]. *Subtract* port charges (estimated as 1.3% of f.o.b. export price) [5].

Basmati rice: F.o.b. export unit values of basmati rice (HS 10063020), financial year average (April to March) [6]. *Subtract* marketing margin (producer to wholesale) and transportation to most important wholesale markets (estimated as 2.5% of Producer price (at farm gate)) [3]. *Subtract* transportation cost from most important wholesale markets to Mundra/Kakinada (estimated as 2.2% of Producer price (at farm gate)) [4]. *Subtract* port charges (estimated as 0.9% of f.o.b. export price) [5].

Sources: [1] The Pink Sheet (World Bank Commodities Price Data); [2] Interviews and discussions with Indian freight forwarders and logistic companies; [3] Interviews with traders and commodity experts in

India, accounting where relevant for processing costs and fees paid to intermediary agents; [4] Railway transportation costs based on data from the Ministry of Railways. Trucking costs based on discussions with trucking companies and individual truckers; [5] Based on publicly available information from the website of the ports examined and discussions with ports staff, various importers, and freight handlers; [6] DGFT (Directorate General of Foreign Trade), Ministry of Commerce and Industry, Government of India.

VII. Level of consumption (at farm gate)

Consumption equals total domestic use during the financial year: total production plus imports minus exports [1], minus change in public stocks of non-basmati rice (data on private stocks is not available; estimated to be low in light of trade and market restricting government policies implemented in an *ad hoc* manner). Change in public stocks of non-basmati rice is estimated as the stock position on 1st April of the current year minus that of the previous year [2].

Sources: [1] DGFT (Directorate General of Foreign Trade), Ministry of Commerce and Industry, Government of India; [2] Food Grain Bulletin, Department of Food and Public Distribution, Government of India.

VIII. Consumption prices (at farm gate)

Implicit price corresponding to reference price plus the market price differential.

Source: See Reference prices (VI) and Market Price Differential (V).

IX. Value of consumption (at farm gate) [(VII)*(VIII)]

Level of consumption times Consumption price (at farm gate).

Source: Calculated based on items IV and V in Table 4.6 (tab RI MPS) in workbook 'Data_IND'.

SOYBEANS

I. Level of production

Total production of soybeans.

Source 2000-14: Agricultural Statistics at a Glance, Department of Agriculture, Cooperation and Farmers' Welfare, Ministry of Agriculture and Farmers' Welfare, Government of India; 2015-18: Directorate of Economics and Statistics, Ministry of Agriculture and Farmers' Welfare, Government of India (2018 data represent first advance estimates).

II. Producer prices (at farm gate)

Monthly state-level average prices in markets located very close to the producer or farm gate (assumed to represent farm gate prices) are observed for the months of the harvest period (April to June) in states that together represent at least half of the national production (Madhya Pradesh represents 56% of total soybean production in 2014-16). As producers sell more than 90% of output in the market immediately after harvesting due to limited farm storage possibilities, a simple average of the monthly average prices in the harvest period in a state is considered to represent the average price for the whole financial year in the state. Weighting the individual state-level prices by the share of each state in their combined production of soybeans generates a countrywide representative price of soybeans.

Source: Agmarknet (web portal), Directorate of Marketing and Inspection, Department of Agriculture, Cooperation and Farmers' Welfare, Ministry of Agriculture and Farmers' Welfare, Government of India. Years when Agmarknet data are not available (2000 and 2001) use data from the Directorate of Economics and Statistics, Ministry of Agriculture and Farmers' Welfare, Government of India.

III. Value of production (at farm gate) [(I)*(II)]

IV. Trade status

The trade status is determined based on exports and imports data: for 2000-18: Net exported (NE).

Source: 2000-16: UN Comtrade database, United Nations; 2017-18: DGFT (Directorate General of Foreign Trade), Ministry of Commerce and Industry, Government of India (preliminary data for financial year 2018-19 covers the period from April to November 2018).

V. Market price differential at the farm gate

Calculated as Producer price (at farm gate) less Reference price (at farm gate). Soybean is a net exported product for the entire 2000-18 period. For the years when producer prices are below reference prices, the negative gaps are kept as they are a result of restrictive policies governing the marketing of agricultural commodities in India (the Essential Commodities Act (ECA) and the state-level Agricultural Produce Market Committee Acts (APMC), which influence pricing, procuring, stocking, moving, and trading) as well as of on and off export restrictions applied throughout the period covered.

VI. Reference prices at the farm gate (including the definition of the margin)

F.o.b. export unit values of soybean (HS 12019000; from 2007 HS 12010090), financial year average (April to March) [1]. *Subtract* marketing margin (producer to wholesale) and transportation to most important wholesale markets (estimated as 2.5% of Producer price (at farm gate)) [2]. *Subtract* transportation cost from most important wholesale markets to Mundra (estimated as 2.5% of Producer price (at farm gate)) [3]. *Subtract* port charges (estimated as 1.4% of f.o.b. export price) [4].

Sources: [1] DGFT (Directorate General of Foreign Trade), Ministry of Commerce and Industry, Government of India; [2] Interviews and discussions with traders and commodity experts in India, accounting where relevant for processing costs and fees paid to intermediary agents; [3] Railway transportation costs based on data from the Ministry of Railways. Trucking costs based on discussions with trucking companies and individual truckers; [4] Based on publicly available information from the website of the ports examined and discussions with ports staff, various importers, and freight handlers.

VII. Level of consumption (at farm gate)

Consumption equals total domestic use during the financial year: total production plus imports minus exports [1].

Source: [1] DGFT (Directorate General of Foreign Trade), Ministry of Commerce and Industry, Government of India.

VIII. Consumption prices (at farm gate)

Implicit price corresponding to reference price plus the market price differential.

Source: See Reference prices (VI) and Market Price Differential (V).

IX. Value of consumption (at farm gate) [(VII)*(VIII)]

Level of consumption times Consumption price (at farm gate).

Source: Calculated based on items IV and V in Table 4.7 (tab SB MPS) in workbook 'Data_IND'.

RAPESEED

I. Level of production

Total production of rapeseed and mustard.

Source 2000-14: Agricultural Statistics at a Glance, Department of Agriculture, Cooperation and Farmers' Welfare, Ministry of Agriculture and Farmers' Welfare, Government of India; 2015-18: Directorate of Economics and Statistics, Ministry of Agriculture and Farmers' Welfare, Government of India (2018 data represent first advance estimates).

II. Producer prices (at farm gate)

Monthly state-level average prices in markets located very close to the producer or farm gate (assumed to represent farm gate prices) are observed for the months of the harvest period (April to June) in states that together represent at least half of the national production (Rajasthan and Uttar Pradesh represented 56% of total production of rapeseed and mustard in 2014-16). As producers sell more than 90% of output in the market immediately after harvesting due to limited farm storage possibilities, a simple average of the monthly average prices in the harvest period in a state is considered to represent the average price for the whole financial year in the state. Weighting the individual state-level prices by the share of each state in their combined production of rapeseed and mustard generates a countrywide representative price of rapeseed and mustard.

Source: Agmarknet (web portal), Directorate of Marketing and Inspection, Department of Agriculture, Cooperation and Farmers' Welfare, Ministry of Agriculture and Farmers' Welfare, Government of India. Years when Agmarknet data are not available (mainly 2000 and 2001) use data from the Directorate of Economics and Statistics, Ministry of Agriculture and Farmers' Welfare, Government of India.

III. Value of production (at farm gate) [(I)*(II)]

IV. Trade status

The trade status is determined based on exports and imports data: for 2000-18: Net exporter (NE).

Source: 2000-16: UN Comtrade database, United Nations; 2017-18: DGFT (Directorate General of Foreign Trade), Ministry of Commerce and Industry, Government of India (preliminary data for financial year 2018-19 covers the period from April to November 2018).

V. Market price differential at the farm gate

Calculated as Producer price (at farm gate) less Reference price (at farm gate). Rapeseed is a net exported product for the entire 2000-18 period. For the years when producer prices are below reference prices, the negative gaps are kept as they are a result of restrictive policies governing the marketing of agricultural commodities in India (the state-level Agricultural Produce Market Committee Acts (APMC), which influence pricing, procuring, stocking, moving, and trading).

VI. Reference prices at the farm gate (including the definition of the margin)

F.o.b. export unit values of rapeseed and mustard (HS 12051000, HS 12059000, HS 12075090), financial year average (April to March) [1]. *Subtract* marketing margin (producer to wholesale) and transportation to most important wholesale markets (estimated as 2.5% of Producer price (at farm gate)) [2]. *Subtract* transportation cost from most important wholesale markets to Mundra (estimated as 2.0% of Producer price (at farm gate)) [3]. *Subtract* port charges (estimated as 1.2% of f.o.b. export price) [4].

Sources: [1] DGFT (Directorate General of Foreign Trade), Ministry of Commerce and Industry, Government of India; [2] Interviews and discussions with traders and commodity experts in India, accounting where relevant for processing costs and fees paid to intermediary agents; [3] Railway transportation costs based on data from the Ministry of Railways. Trucking costs based on discussions with trucking companies and individual truckers; [4] Based on publicly available information from the website of the ports examined and discussions with ports staff, various importers, and freight handlers.

VII. Level of consumption (at farm gate)

Consumption equals total domestic use during the financial year: total production plus imports minus exports [1].

Source: [1] DGFT (Directorate General of Foreign Trade), Ministry of Commerce and Industry, Government of India.

VIII. Consumption prices (at farm gate)

Implicit price corresponding to reference price plus the market price differential.

Source: See Reference prices (VI) and Market Price Differential (V).

IX. Value of consumption (at farm gate) [(VII)*(VIII)]

Level of consumption times Consumption price (at farm gate).

Source: Calculated based on items IV and V in Table 4.8 (tab RP MPS) in workbook 'Data_IND'.

GROUNDNUTS

I. Level of production

Total production of groundnuts, shelled weight, derived by multiplying production of in shell groundnuts by a conversion rate of 0.7.

Source 2000-14: Agricultural Statistics at a Glance, Department of Agriculture, Cooperation and Farmers' Welfare, Ministry of Agriculture and Farmers' Welfare, Government of India; 2015-18: Directorate of Economics and Statistics, Ministry of Agriculture and Farmers' Welfare, Government of India (2018 data represent first advance estimates).

II. Producer prices (at farm gate)

Monthly state-level average prices in markets located very close to the producer or farm gate (assumed to represent farm gate prices) are observed for the months of the harvest period (October to January) in states

that together represent at least half of the national production (Andhra Pradesh, Gujarat and Tamil Nadu represent 56% of total production of groundnuts in 2014-16). As producers sell more than 90% of output in the market immediately after harvesting due to limited farm storage possibilities, a simple average of the monthly average prices in the harvest period in a state is considered to represent the average price for the whole financial year in the state. Weighting the individual state-level prices by the share of each state in their combined production of groundnuts (in shell) generates a countrywide representative price of groundnuts (in shell). Converted to price of groundnuts (shelled) by dividing by conversion rate of 0.7.

Source: Agmarknet (web portal), Directorate of Marketing and Inspection, Department of Agriculture, Cooperation and Farmers' Welfare, Ministry of Agriculture and Farmers' Welfare, Government of India. Years when Agmarknet data are not available (mainly 2000 and 2001) use data from the Directorate of Economics and Statistics, Ministry of Agriculture and Farmers' Welfare, Government of India.

III. Value of production (at farm gate) [(I)*(II)]

IV. Trade status

The trade status is determined based on exports and imports data: for 2000-18: Net exporter (NE).

Source: 2000-16: UN Comtrade database, United Nations; 2017-18: DGFT (Directorate General of Foreign Trade), Ministry of Commerce and Industry, Government of India (preliminary data for financial year 2018-19 covers the period from April to November 2018).

V. Market price differential at the farm gate

Calculated as Producer price (at farm gate) less Reference price (at farm gate). Groundnuts is a net exported product for the entire 2000-18 period. For the years when producer prices are below reference prices, the negative gaps are kept as they are a result of restrictive policies governing the marketing of agricultural commodities in India (the Essential Commodities Act (ECA) and the state-level Agricultural Produce Market Committee Acts (APMC), which influence pricing, procuring, stocking, moving, and trading) as well as of on and off export restrictions applied throughout the period covered.

VI. Reference prices at the farm gate (including the definition of the margin)

F.o.b. export unit values of groundnuts, shelled (HS 120242; from 2007 HS 120220), financial year average (April to March) [1]. *Subtract* marketing margin (producer to wholesale) and transportation to most important wholesale markets (estimated as 2.5% of Producer price (at farm gate)) [2]. *Subtract* transportation cost from most important wholesale markets to Mundra (estimated as 1.1% of Producer price (at farm gate)) [3]. *Subtract* port charges (estimated as 0.5% of f.o.b. export price) [4].

Sources: [1] DGFT (Directorate General of Foreign Trade), Ministry of Commerce and Industry, Government of India; [2] Interviews and discussions with traders and commodity experts in India, accounting where relevant for processing costs and fees paid to intermediary agents; [3] Railway transportation costs based on data from the Ministry of Railways. Trucking costs based on discussions with trucking companies and individual truckers; [4] Based on publicly available information from the website of the ports examined and discussions with ports staff, various importers, and freight handlers.

VII. Level of consumption (at farm gate)

Consumption equals total domestic use during the financial year: total production plus imports minus exports [1].

Source: [1] DGFT (Directorate General of Foreign Trade), Ministry of Commerce and Industry, Government of India.

VIII. Consumption prices (at farm gate)

Implicit price corresponding to reference price plus the market price differential.

Source: See Reference prices (VI) and Market Price Differential (V).

IX. Value of consumption (at farm gate) [(VII)*(VIII)]

Level of consumption times Consumption price (at farm gate).

Source: Calculated based on items IV and V in Table 4.9 (tab GN MPS) in workbook 'Data_IND'.

SUGAR

I. Level of production

Total production of sugar from cane, in refined sugar equivalent, obtained by multiplying production of cane by a conversion rate of 0.11 to derive the total production in raw sugar equivalent, which is converted to refined sugar equivalent by multiplying by a weight conversion ratio of 0.97.

Source: Indian Sugar Mills Association (2018 data represent first advance estimates).

II. Producer prices (at farm gate)

State-level average prices of sugar are observed for the entire financial year in states that together represent at least half of the national production (Andhra Pradesh, Maharashtra and Uttar Pradesh represent 65% of total production of sugar in 2014-16). The monthly state-level prices are for refined sugar equivalent collected for the entire financial year. Weighting the individual state-level prices by the share of each state in their combined production of sugar generates a countrywide representative price of sugar.

Source: Directorate of Economics and Statistics, Ministry of Agriculture and Farmers' Welfare, Government of India.

III. Value of production (at farm gate) [(I)*(II)]

IV. Trade status

The trade status is determined based on exports and imports data: for 2000-18: Net exporter (NE).

Source: 2000-16: UN Comtrade database, United Nations; 2017-18: DGFT (Directorate General of Foreign Trade), Ministry of Commerce and Industry, Government of India (preliminary data for financial year 2018-19 covers the period from April to November 2018).

V. Market price differential at the farm gate

Calculated as Producer price (at farm gate) less Reference price (at farm gate). Sugar is a net exported product for the entire 2000-18 period. For the years when producer prices are below reference prices (2006, 2010, 2011), the negative gaps are kept as they are a result of restrictive policies governing the marketing of agricultural commodities in India (the Essential Commodities Act (ECA) and the state-level Agricultural

Produce Market Committee Acts (APMC), which influence pricing, procuring, stocking, moving, and trading) as well as of on and off export restrictions applied. For the rest of the years (2000-05, 2007-09, and 2012-18), the producer price is above the reference price and the positive gaps are kept as they are a result of domestic and trade policies.

VI. Reference prices at the farm gate (including the definition of the margin)

Export prices of refined sugar, EU f.o.b. (Contract No. 407 (also known as No. 5), London Daily Price, f.o.b. Europe, Intercontinental Exchange (ICE; formerly Euronext, formerly LIFFE) [1]. *Add* transportation cost to the Indian border (freight Rotterdam to Mundra, estimated as 11.7% of the EU f.o.b. export price [2]). *Subtract* marketing margin (estimated as 2.5% of Producer price) [3]. *Subtract* transportation cost from most important wholesale markets to Mundra (estimated as 1.2% of Producer price) [4]. *Subtract* port charges (estimated as 0.9% of EU f.o.b. export price) [5].

Sources: [1] United States Department of Agriculture, Economic Research Service, Sugar and Sweeteners Yearbook Tables, Table 2, <https://www.ers.usda.gov/data-products/sugar-and-sweeteners-yearbook-tables>; [2] Interviews and discussions with Indian freight forwarders and logistic companies; [3] Interviews with traders and commodity experts in India, accounting where relevant for processing costs and fees paid to intermediary agents; [4] Railway transportation costs based on data from the Ministry of Railways. Trucking costs based on discussions with trucking companies and individual truckers; [5] Based on publicly available information from the website of the ports examined and discussions with ports staff, various importers, and freight handlers.

VII. Level of consumption (at farm gate)

Consumption equals total domestic use during the financial year: total production plus imports minus exports (HS 170111, 17019100, 17019910, 17019990) [1], minus change in stocks. Change in stocks is estimated as the stock position on 1st April of the current year minus that of the previous year. Change in stocks refers to refined sugar (publicly held, private and co-operative). Monthly stock levels [2].

Sources: [1] DGFT (Directorate General of Foreign Trade), Ministry of Commerce and Industry, Government of India; [2] Indian Sugar Mills Association.

VIII. Consumption prices (at farm gate)

Implicit price corresponding to reference price plus the market price differential.

Source: See Reference prices (VI) and Market Price Differential (V).

IX. Value of consumption (at farm gate) [(VII)*(VIII)]

Level of consumption times Consumption price (at farm gate).

Source: Calculated based on items IV and V in Table 4.10 (tab RS MPS) in workbook 'Data_IND'.

CHICKPEA

I. Level of production

Total production of chickpeas, all varieties (also called *gram*). *Kabuli chana* (white) and Bengal *gram* are the dominant varieties of chickpeas in India. Expert consultations indicate these two varieties are both produced and imported in a ratio of 80:20.

Sources: 2000-14: Agricultural Statistics at a Glance, Department of Agriculture, Cooperation and Farmers' Welfare, Ministry of Agriculture and Farmers' Welfare, Government of India; 2015-18: Directorate of Economics and Statistics, Ministry of Agriculture and Farmers' Welfare, Government of India (2018 data is estimated by multiplying previous year production by mean growth rate of 2015-17).

II. Producer prices (at farm gate)

The average producer price of chickpea (*gram*), all varieties, is obtained by dividing the value of output of chickpea [1] by the total production of chickpea [2] for the financial year.

Sources: [1] 2000-14: National Accounts Statistics, Ministry of Statistics and Program Implementation (MOSPI), Government of India (2018 are estimated by multiplying previous year production by mean growth rate of triennium ending in 2015-17); [2] 2000-14: Agricultural Statistics at a Glance, Department of Agriculture, Cooperation and Farmers' Welfare, Ministry of Agriculture and Farmers' Welfare, Government of India. 2015-18: Directorate of Economics and Statistics, Ministry of Agriculture and Farmers' Welfare, Government of India (2018 data is estimated by multiplying previous year production by mean growth rate of triennium ending in 2015-17).

III. Value of production (at farm gate) [(I)*(II)]

IV. Trade status

The trade status is determined based on exports and imports data: for 2000-18: Net importer (NI).

Source: 2000-18: DGFT (Directorate General of Foreign Trade), Ministry of Commerce and Industry, Government of India (preliminary data for financial year 2018-19 covers the period from April to November 2018).

V. Market price differential at the farm gate

Calculated as Producer price (at farm gate) less Reference price (at farm gate). Chickpeas is an imported commodity to which policies, such as MFN tariffs, apply. In some years (2001-14), Producer prices were nevertheless below Reference prices. The resulting negative Market price differentials were considered to be zero, in accordance with the PSE Manual for an imported commodity.

VI. Reference prices at the farm gate (including the definition of the margin)

C.i.f. import unit values of chickpea (HS 07132000), financial year average (April to March) [1]. *Subtract* marketing margin (producer to wholesale) and transportation to most important wholesale markets (estimated as 2.5% of Producer price (at farm gate)) [2]. *Add* transportation cost from Kandla to most important wholesale markets (estimated as 2.5% of Producer price (at farm gate)) [3]. *Add* port charges (estimated as 1.3% of f.o.b. export price) [4].

Sources: [1] DGFT (Directorate General of Foreign Trade), Ministry of Commerce and Industry, Government of India; [2] Interviews and discussions with traders and commodity experts in India, accounting where relevant for processing costs and fees paid to intermediary agents; [3] Railway transportation costs based on data from the Ministry of Railways. Trucking costs based on discussions with trucking companies

and individual truckers; [4] Based on publicly available information from the website of the ports examined and discussions with ports staff, various importers, and freight handlers.

VII. Level of consumption (at farm gate)

Consumption equals total domestic use during the financial year: total production plus imports minus exports [1].

Source: [1] DGFT (Directorate General of Foreign Trade), Ministry of Commerce and Industry, Government of India.

VIII. Consumption prices (at farm gate)

Implicit price corresponding to reference price plus the market price differential.

Source: See Reference prices (VI) and Market Price Differential (V).

IX. Value of consumption (at farm gate) [(VII)*(VIII)]

Level of consumption times Consumption price (at farm gate).

Source: Calculated based on items IV and V in Table 4.1 (tab CP MPS) in workbook 'Data_IND'.

OTHER PULSES

I. Level of production

Not used in calculations.

II. Producer prices (at farm gate)

Not used in calculations.

III. Value of production (at farm gate)

Calculated as difference between value of output of all pulses and value of output of chickpeas.

Source: National Accounts Statistics, Ministry of Statistics and Program Implementation (MOSPI), Government of India.

IV. Trade status

The trade status is determined based on exports and imports data: for 2000-18: Net importer (NI).

Source: 2000-18: DGFT (Directorate General of Foreign Trade), Ministry of Commerce and Industry, Government of India (preliminary data for financial year 2018-19 covers the period from April to November 2018).

V. Market price differential at the farm gate

Not calculated explicitly for Other pulses. Agricultural domestic and trade policies are similar across the group of commodities that constitute pulses. It was therefore assumed that the ratio of Market price

support to Value of production for Other pulses is the same as the ratio for Chickpeas (Market price support for Chickpeas derives from its explicitly calculated Market price differential). The calculation of Market transfers for Other pulses thus consists of (1) grossing up Market transfers for Chickpeas in proportion to value of output of all pulses over value of output of Chickpeas, and (2) subtracting Market transfers for Chickpeas from the Market transfers for all pulses.

VI. Reference prices at the farm gate (including the definition of the margin)

Not calculated.

VII. Level of consumption (at farm gate)

Not calculated.

VIII. Consumption prices (at farm gate)

Not calculated.

IX. Value of consumption (at farm gate)

Calculated by multiplying Value of production of Other pulses by ratio of Value of consumption of Chickpeas over Value of production of Chickpeas.

Source: Calculated based on items IV and V in Table 4.3 (tab OP MPS) in workbook 'Data_IND'.

ONION

I. Level of production

Total production of fresh onions.

Source 2000-14: Horticultural Statistics at a Glance, Department of Agriculture, Cooperation and Farmers' Welfare, Ministry of Agriculture and Farmers' Welfare, Government of India; 2015-18: National Horticulture Board, Ministry of Agriculture and Farmers' Welfare, Government of India (2018 data is estimated by multiplying previous year production by mean growth rate of 2015-17).

II. Producer prices (at farm gate)

Monthly state-level average prices in markets located very close to the producer or farm gate (assumed to represent farm gate prices) are observed in states that together represent at least half of the national production (Maharashtra, Madhya Pradesh and Karnataka represent 61% of total production of onions in 2014-16). The monthly state-level prices are for the entire financial year. Harvesting can take place all-year round since, depending on the state, onion can be sown during early *kharif* or *kharif* (summer season) or *rabi* (winter season). Weighting the individual state-level prices by the share of each state in their combined production of onions generates a countrywide representative price of onions.

Source: Agmarknet (web portal), Directorate of Marketing and Inspection, Department of Agriculture, Cooperation and Farmers' Welfare, Ministry of Agriculture and Farmers' Welfare, Government of India. Years when Agmarknet data are not available (2000 and 2001) use data from the Directorate of Economics and Statistics, Ministry of Agriculture and Farmers' Welfare, Government of India.

III. Value of production (at farm gate)

Total value of output of onion.

Source: 2000-16: National Accounts Statistics, Ministry of Statistics and Program Implementation (MOSPI); data for 2017 estimated using the mean annual growth in 2014-16; data for 2018 estimated using the mean annual growth in 2015-17.

IV. Trade status

The trade status is determined based on exports and imports data: for 2000-18: Net exporter (NE).

Source: 2000-18: DGFT (Directorate General of Foreign Trade), Ministry of Commerce and Industry, Government of India (preliminary data for financial year 2018-19 covers the period from April to November 2018).

V. Market price differential at the farm gate

Calculated as Producer price (at farm gate) less Reference price (at farm gate). Onion is a net exported product for the entire 2000-18 period. For the years when producer prices are below reference prices, the negative gaps are kept as they are a result of restrictive policies governing the marketing of agricultural commodities in India (the Essential Commodities Act (ECA) and the state-level Agricultural Produce Market Committee Acts (APMC), which influence pricing, procuring, stocking, moving, and trading) as well as of on and off export restrictions applied throughout the period covered.

VI. Reference prices at the farm gate (including the definition of the margin)

F.o.b. export unit values of onions and shallots (HS 07031010, HS 07031020), financial year average (April to March), multiplied by a quality coefficient of 0.92 to reflect the quality difference between onions produced and exported (based on interviews with traders) [1]. *Subtract* marketing margin (producer to wholesale) and transportation to most important wholesale markets (estimated as 7.0% of Producer price (at farm gate)) [2]. *Subtract* transportation cost from most important wholesale markets to Mundra (estimated as 2.0% of Producer price (at farm gate)) [3]. *Subtract* port charges (estimated as 0.9% of f.o.b. export price) [4].

Sources: [1] DGFT (Directorate General of Foreign Trade), Ministry of Commerce and Industry, Government of India; [2] Interviews with traders and commodity experts in India, accounting where relevant for processing costs and fees paid to intermediary agents; [3] Railway transportation costs based on data from the Ministry of Railways. Trucking costs based on discussions with trucking companies and individual truckers; [4] Based on publicly available information from the website of the ports examined and discussions with ports staff, various importers, and freight handlers.

VII. Level of consumption (at farm gate)

Consumption equals total domestic use during the financial year: total production plus imports minus exports [1] (trade includes shallots).

Source: [1] DGFT (Directorate General of Foreign Trade), Ministry of Commerce and Industry, Government of India.

VIII. Consumption prices (at farm gate)

Implicit price corresponding to reference price plus the market price differential.

Source: See Reference prices (VI) and Market Price Differential (V).

IX. Value of consumption (at farm gate) [(VII)*(VIII)]

Level of consumption times Consumption price (at farm gate).

Source: Calculated based on items IV and V in Table 4.2 (tab ON MPS) in workbook 'Data_IND'.

POTATOES

I. Level of production

Total production of potatoes.

Source 2000-14: Horticultural Statistics at a Glance, Department of Agriculture, Cooperation and Farmers' Welfare, Ministry of Agriculture and Farmers' Welfare, Government of India; 2015-18: National Horticulture Board, Ministry of Agriculture and Farmers' Welfare, Government of India (2018 data is estimated by multiplying previous year production by mean growth rate of 2015-17).

II. Producer prices (at farm gate)

Monthly state-level average prices in markets located very close to the producer or farm gate (assumed to represent farm gate prices) are observed for the months of the harvest period (February and March) in states that together represent at least half of the national production (West Bengal and Uttar Pradesh represent 54% of total production of potatoes in 2014-16). As producers sell more than 90% of output in the market immediately after harvesting due to limited farm storage possibilities, a simple average of the monthly average prices in the harvest period in a state is considered to represent the average price for the whole financial year in the state. Weighting the individual state-level prices by the share of each state in their combined production of potatoes generates a countrywide representative price of potatoes.

Source: Agmarknet (web portal), Directorate of Marketing and Inspection, Department of Agriculture, Cooperation and Farmers' Welfare, Ministry of Agriculture and Farmers' Welfare, Government of India. Years when Agmarknet data are not available (2000 and 2001) use data from the Directorate of Economics and Statistics, Ministry of Agriculture and Farmers' Welfare, Government of India.

III. Value of production (at farm gate)

Value of output of potatoes.

Source: 2000-16: National Accounts Statistics, Ministry of Statistics and Program Implementation (MOSPI); data for 2017 estimated using the mean annual growth in 2014-16; data for 2018 estimated using the mean annual growth in 2015-17.

IV. Trade status

The trade status is determined based on exports and imports data: for 2000-18: Net exporter.

Source: 2000-18: DGFT (Directorate General of Foreign Trade), Ministry of Commerce and Industry, Government of India (preliminary data for financial year 2018-19 covers the period from April to November 2018).

V. Market price differential at the farm gate

Calculated as Producer price (at farm gate) less Reference price (at farm gate). Potato is a net exported product for the entire 2000-18 period. For the years when producer prices are below reference prices, the negative gaps are kept as they are a result of restrictive policies governing the marketing of agricultural commodities in India (the Essential Commodities Act (ECA) and the state-level Agricultural Produce Market Committee Acts (APMC), which influence pricing, procuring, stocking, moving, and trading) as well as of on and off export restrictions applied throughout the period covered.

VI. Reference prices at the farm gate (including the definition of the margin)

F.o.b. export unit values of potatoes (fresh or chilled) (HS 07019000), financial year average (April to March), multiplied by a quality coefficient of 0.92 to reflect the quality difference between potatoes produced and exported (based on interviews with traders) [1]. *Subtract* marketing margin (producer to wholesale) and transportation to most important wholesale markets (estimated as 7.0% of Producer price (at farm gate)) [2]. *Subtract* transportation cost from most important wholesale markets to Mundra (estimated as 3.5% of Producer price (at farm gate)) [3]. *Subtract* port charges (estimated as 0.9% of f.o.b. export price) [4].

Sources: [1] DGFT (Directorate General of Foreign Trade), Ministry of Commerce and Industry, Government of India; [2] Interviews and discussions with traders and commodity experts in India, accounting where relevant for processing costs and fees paid to intermediary agents; [3] Railway transportation costs based on data from the Ministry of Railways. Trucking costs based on discussions with trucking companies and individual truckers; [4] Based on publicly available information from the website of the ports examined and discussions with ports staff, various importers, and freight handlers.

VII. Level of consumption (at farm gate)

Consumption equals total domestic use during the financial year: total production plus imports minus exports [1] (trade includes seed potatoes).

Source: [1] DGFT (Directorate General of Foreign Trade), Ministry of Commerce and Industry, Government of India.

VIII. Consumption prices (at farm gate)

Implicit price corresponding to reference price plus the market price differential.

Source: See Reference prices (VI) and Market Price Differential (V).

IX. Value of consumption (at farm gate) [(VII)*(VIII)]

Level of consumption times Consumption price (at farm gate).

Source: Based on items IV and V in Table 4.19 (tab PO MPS) in workbook 'Data_IND'.

TOMATOES

I. Level of production

Total production of tomatoes.

Source 2000-14: Horticultural Statistics at a Glance, Department of Agriculture, Cooperation and Farmers' Welfare, Ministry of Agriculture and Farmers' Welfare, Government of India; 2015-18: National Horticulture Board, Ministry of Agriculture and Farmers' Welfare, Government of India (2018 data is estimated by multiplying previous year production by mean growth rate of 2015-17).

II. Producer prices (at farm gate)

Monthly state-level average prices in markets located very close to the producer or farm gate (assumed to represent farm gate prices) are observed for the months of the harvest period (November to February) in states that together represent at least half of the national production (Andhra Pradesh, Karnataka, Madhya Pradesh, Odisha and Gujarat represent 58% of total production of tomatoes in 2014-16). As producers sell more than 90% of output in the market immediately after harvesting due to limited farm storage possibilities, a simple average of the monthly average prices in the harvest period in a state is considered to represent the average price for the whole financial year in the state. Weighting the individual state-level prices by the share of each state in their combined production of tomatoes generates a countrywide representative price of tomatoes.

Source: Agmarknet (web portal), Directorate of Marketing and Inspection, Department of Agriculture, Cooperation and Farmers' Welfare, Ministry of Agriculture and Farmers' Welfare, Government of India. Years when Agmarknet data are not available (2000 and 2001) use data from the Directorate of Economics and Statistics, Ministry of Agriculture and Farmers' Welfare, Government of India.

III. Value of production (at farm gate)

Value of output of tomatoes.

Source: 2000-16: National Accounts Statistics, Ministry of Statistics and Program Implementation (MOSPI); data for 2017 estimated using the mean annual growth in 2014-16; data for 2018 estimated using the mean annual growth in 2015-17.

IV. Trade status

The trade status is determined based on exports and imports data: for 2000-18: Net exporter (NE).

Source: DGFT (Directorate General of Foreign Trade), Ministry of Commerce and Industry, Government of India (preliminary data for financial year 2018-19 covers the period from April to November 2018).

V. Market price differential at the farm gate

Calculated as Producer price (at farm gate) less Reference price (at farm gate). Tomato is a net exported product for the entire 2000-18 period. For the years when producer prices are below reference prices, the negative gaps are kept as they are a result of restrictive policies governing the marketing of agricultural commodities in India (the state-level Agricultural Produce Market Committee Acts (APMC), which influence pricing, procuring, stocking, moving, and trading).

VI. Reference prices at the farm gate (including the definition of the margin)

F.o.b. export unit values of tomatoes, financial year average (April to March), multiplied by a quality coefficient of 0.90 to reflect the quality difference between tomatoes produced and exported (based on interviews with traders) [1]. *Subtract* marketing margin (producer to wholesale) and transportation to most important wholesale markets (estimated as 7.0% of Producer price (at farm gate)) [2]. *Subtract* transportation cost from most important wholesale markets to Mundra (estimated as 3.5% of Producer price (at farm gate)) [3]. *Subtract* port charges (estimated as 0.9% of f.o.b. export price) [4].

Sources: [1] DGFT (Directorate General of Foreign Trade), Ministry of Commerce and Industry, Government of India; [2] Interviews and discussions with traders and commodity experts in India, accounting where relevant for processing costs and fees paid to intermediary agents; [3] Railway transportation costs based on data from the Ministry of Railways. Trucking costs based on discussions with trucking companies and individual truckers; [4] Based on publicly available information from the website of the ports examined and discussions with ports staff, various importers, and freight handlers.

VII. Level of consumption (at farm gate)

Consumption equals total domestic use during the financial year: total production plus imports minus exports [1].

Source: [1] DGFT (Directorate General of Foreign Trade), Ministry of Commerce and Industry, Government of India.

VIII. Consumption prices (at farm gate)

Implicit price corresponding to reference price plus the market price differential.

Source: See Reference prices (VI) and Market Price Differential (V).

IX. Value of consumption (at farm gate) [(VII)*(VIII)]

Level of consumption times Consumption price (at farm gate).

Source: Calculated based on items IV and V in Table 4.18 (tab TM MPS) in workbook 'Data_IND'.

MANGO

I. Level of production

Total production of mango.

Source 2000-14: Horticultural Statistics at a Glance, Department of Agriculture, Cooperation and Farmers' Welfare, Ministry of Agriculture and Farmers' Welfare, Government of India (Due to lack of data, production in 2000 assumed equal to production in 2001); 2015-18: National Horticulture Board, Ministry of Agriculture and Farmers' Welfare, Government of India (2018 data is estimated by multiplying previous year production by mean growth rate of 2015-17).

II. Producer prices (at farm gate)

Monthly state-level average prices in markets located very close to the producer or farm gate (assumed to represent farm gate prices) are observed for the months of the harvest period (June) in states that together represent at least half of the national production (Gujarat, Maharashtra, Andhra Pradesh, Uttar Pradesh

represent 57% of total production of mangoes in 2014-16). As producers sell more than 90% of output in the market immediately after harvesting due to limited farm storage possibilities, a simple average of the monthly average prices in the harvest period in a state is considered to represent the average price for the whole financial year in the state. Weighting the individual state-level prices by the share of each state in their combined production of mango generates a countrywide representative price of mango.

Source: Agmarknet (web portal), Directorate of Marketing and Inspection, Department of Agriculture, Cooperation and Farmers' Welfare, Ministry of Agriculture and Farmers' Welfare, Government of India. Years when Agmarknet data are not available (2000 and 2001) use data from the Directorate of Economics and Statistics, Ministry of Agriculture and Farmers' Welfare, Government of India.

III. Value of production (at farm gate)

Value of output of mango.

Source: 2000-16: National Accounts Statistics, Ministry of Statistics and Program Implementation (MOSPI); data for 2017 estimated using the mean annual growth in 2014-16; data for 2018 estimated using the mean annual growth in 2015-17.

IV. Trade status

The trade status is determined based on exports and imports data: for 2000-18: Net exporter (NE).

Source: 2000-18: DGFT (Directorate General of Foreign Trade), Ministry of Commerce and Industry, Government of India (preliminary data for financial year 2018-19 covers the period from April to November 2018).

V. Market price differential at the farm gate

Calculated as Producer price (at farm gate) less Reference price (at farm gate). Mango is a net exported product for the entire 2000-18 period. For the years when producer prices are below reference prices, the negative gaps are kept as they are a result of restrictive policies governing the marketing of agricultural commodities in India (the state-level Agricultural Produce Market Committee Acts (APMC), which influence pricing, procuring, stocking, moving, and trading).

Source: Calculated based on items II and VII in Table 4.17 (tab MG MPS) in workbook 'Data_IND'.

VI. Reference prices at the farm gate (including the definition of the margin)

F.o.b. export unit values of mango (HS 08045020), financial year average (April to March), multiplied by a quality coefficient of 0.90 to reflect the quality difference between mango produced and exported (based on interviews with traders) [1]. *Subtract* marketing margin (producer to wholesale) and transportation to most important wholesale markets (estimated as 7.0% of Producer price (at farm gate)) [2]. *Subtract* transportation cost from most important wholesale markets to Mundra (estimated as 0.7% of Producer price (at farm gate)) [3]. *Subtract* port charges (estimated as 1.0% of f.o.b. export price) [4].

Sources: [1] DGFT (Directorate General of Foreign Trade), Ministry of Commerce and Industry, Government of India; [2] Interviews with traders and commodity experts in India, accounting where relevant for processing costs and fees paid to intermediary agents; [3] Railway transportation costs based on data from the Ministry of Railways. Trucking costs based on discussions with trucking companies and individual

truckers; [4] Based on publicly available information from the website of the ports examined and discussions with ports staff, various importers, and freight handlers.

VII. Level of consumption (at farm gate)

Consumption equals total domestic use during the financial year: total production plus imports minus exports [1].

Source: [1] DGFT (Directorate General of Foreign Trade), Ministry of Commerce and Industry, Government of India.

VIII. Consumption prices (at farm gate)

Implicit price corresponding to reference price plus the market price differential.

Source: See Reference prices (VI) and Market Price Differential (V).

IX. Value of consumption (at farm gate) [(VII)*(VIII)]

Level of consumption times Consumption price (at farm gate).

Source: Calculated based on items IV and V in Table 4.17 (tab MG MPS) in workbook 'Data_IND'.

BANANAS

I. Level of production

Total production of bananas.

Source 2000-14: Horticultural Statistics at a Glance, Department of Agriculture, Cooperation and Farmers' Welfare, Ministry of Agriculture and Farmers' Welfare, Government of India; 2015-18: National Horticulture Board, Ministry of Agriculture and Farmers' Welfare, Government of India (2018 data is estimated by multiplying previous year production by mean growth rate of 2015-17).

II. Producer prices (at farm gate)

The average producer price of bananas is obtained by dividing the value of output of bananas [1] by the total production of bananas [2].

Source: [1] National Accounts Statistics, Ministry of Statistics and Program Implementation (MOSPI), Government of India; [2] 2000-14: Horticultural Statistics at a Glance, Department of Agriculture, Cooperation and Farmers' Welfare, Ministry of Agriculture and Farmers' Welfare, Government of India; 2015-16: National Horticulture Board, Ministry of Agriculture and Farmers' Welfare, Government of India.

III. Value of production (at farm gate)

Value of output of bananas.

Source: 2000-16: National Accounts Statistics, Ministry of Statistics and Program Implementation (MOSPI); data for 2017 estimated using the 2017-18 Wholesale Price Index (WPI); data for 2018 estimated using the mean annual growth in 2015-17.

IV. Trade status

The trade status is determined based on exports and imports data: 2000-18: Net exporter (NE).

Source: 2000-18: DGFT (Directorate General of Foreign Trade), Ministry of Commerce and Industry, Government of India (preliminary data for financial year 2018-19 covers the period from April to November 2018).

V. Market price differential at the farm gate

Calculated as Producer price (at farm gate) less Reference price (at farm gate). Bananas are a net exported product for the entire 2000-18 period. For the years when producer prices are below reference prices, the negative gaps are kept as they are a result of restrictive policies governing the marketing of agricultural commodities in India (the state-level Agricultural Produce Market Committee Acts (APMC), which influence pricing, procuring, stocking, moving, and trading).

VI. Reference prices at the farm gate (including the definition of the margin)

F.o.b. export unit values of bananas (HS 080300) from Ecuador, financial year average (April to March) [1]. *Add* transportation cost to the Indian border (freight Ecuador to Mundra, estimated as 5% of the f.o.b. export price) [2] *Subtract* marketing margin (producer to wholesale) and transportation to most important wholesale markets (estimated as 7.0% of Producer price (at farm gate)) [3]. *Subtract* transportation cost from most important wholesale markets to Mundra (estimated as 1.7% of Producer price (at farm gate)) [4]. *Subtract* port charges (estimated as 1.0% of f.o.b. export price) [5].

Sources: [1] UN Comtrade database, United Nations; [2] Discussions with Indian freight forwarders and logistic companies; [3] Interviews with traders and commodity experts in India, accounting where relevant for processing costs and fees paid to intermediary agents; [4] Railway transportation costs based on data from the Ministry of Railways. Trucking costs based on discussions with trucking companies and individual truckers; [5] Based on publicly available information from the website of the ports examined and discussions with ports staff, various importers, and freight handlers.

VII. Level of consumption (at farm gate)

Consumption equals total domestic use during the financial year: total production plus imports minus exports.

Source: DGFT (Directorate General of Foreign Trade), Ministry of Commerce and Industry, Government of India.

VIII. Consumption prices (at farm gate)

Implicit price corresponding to reference price plus the market price differential.

Source: See Reference prices (VI) and Market Price Differential (V).

IX. Value of consumption (at farm gate) [(VII)*(VIII)]

Level of consumption times Consumption price (at farm gate).

Source: Calculated based on items IV and V in Table 4.16 (tab BS MPS) in workbook 'Data_IND'.

COTTON

I. Level of production

Production in lakh bales of 170 kg (in thousand tonnes: multiply number of bales by 170 and divide by 1 000 000).

Source: Cotton Corporation of India; “Area, production and productivity of cotton in India from 1947-48 onwards” at <https://cotcorp.org.in/statistics.aspx#area> (“Lint cotton separated from cottonseed is pressed in the form of full pressed bales with standard weight of 170 kg”) (2017 data is estimated by multiplying previous year production by mean growth rate in 2014-16; 2018 data is estimated by multiplying previous year production by mean growth rate of 2015-17).

II. Producer prices (at farm gate)

Monthly state-level average prices of long staple cotton (H4 and S6 varieties; long staple cotton accounted for some 60-70% of cotton production recent years) in markets located very close to the producer or farm gate (assumed to represent farm gate prices) are observed for the months of October to January in states that together represent at least half of the national production (Maharashtra and Gujarat represent 51% of total production of cotton in 2014-16). Prices for 2017 and 2018 are estimated using the Wholesale Price Index (WPI) rate of 2016. As producers sell more than 90% of output in the market immediately after harvesting due to limited farm storage possibilities, a simple average of the monthly average prices in a state is considered to represent the average price for the whole financial year in the state. Weighting the individual state-level prices by the share of each state in their combined production of cotton generates a countrywide representative price of cotton.

Sources: [1] Cotton Corporation of India; [2] Cotton Association of India.

III. Value of production (at farm gate) [(I)*(II)]

IV. Trade status

The trade status is determined based on exports and imports data: for 2000-18: Net exporter (NE).

Source: 2000-18: DGFT (Directorate General of Foreign Trade), Ministry of Commerce and Industry, Government of India (preliminary data for financial year 2018-19 covers the period from April to November 2018).

V. Market price differential at the farm gate

Calculated as Producer price (at farm gate) less Reference price (at farm gate). Cotton is a net exported product for the entire 2000-18 period. For the years when producer prices are below reference prices, the negative gaps are kept as they are a result of restrictive policies governing the marketing of agricultural commodities in India (the state-level Agricultural Produce Market Committee Acts (APMC), which influence pricing, procuring, stocking, moving, and trading) as well as of on and off export restrictions applied throughout the period covered.

Source: Calculated based on items II and VII in Table 4.20 (tab CT MPS) in workbook ‘Data_IND’.

VI. Reference prices at the farm gate (including the definition of the margin)

Cotton price quotations, Cotlook A Index, Middling 1-3/32, Cotton Outlook, CFR Far Eastern, financial year average (April to March) [1]. *Subtract* transportation cost from Houston to Singapore [2]. *Add* transportation costs to the Indian border (freight US Gulf to Mundra estimated as 7.8 % of the CFR price quotation, net of transportation cost) [2]. *Subtract* marketing margin (producer to wholesale) and transportation to most important wholesale markets (estimated as 2.5% of Producer price (at farm gate)) [3]. *Subtract* (*Add* in years 2000, 2001 and 2002 when India was net importer) transportation cost from most important wholesale markets to Mundra (estimated as 0.5% of Producer price (at farm gate)) [4]. *Subtract* (*Add* in years 2000, 2001 and 2002 when India was net importer) port charges (estimated as 0.7% of CFR price quotation, net of transportation cost) [5].

Sources: [1] UNCTADStat (Free market commodity price indices, monthly, January 1960 – December 2017), United Nations Conference on Trade and Development (UNCTAD); [2] Discussions with Indian freight forwarders and logistic companies; [3] Interviews and discussions with traders and commodity experts in India, accounting where relevant for processing costs and fees paid to intermediary agents; [4] Railway transportation costs based on data from the Ministry of Railways. Trucking costs based on discussions with trucking companies and individual truckers; [5] Based on publicly available information from the website of the ports examined and discussions with ports staff, various importers, and freight handlers.

VII. Level of consumption (at farm gate)

Consumption equals total domestic use during the financial year: total production plus imports minus exports [1] minus change in stocks. Change in stocks is estimated as the stock position on 1st April of the current year minus that of the previous year. Change in stocks refers to cotton lint (held by millers, ginners, traders and government; cotton producers sell immediately upon harvesting and do not hold stocks of cotton). Monthly stock levels [2].

Source: [1] DGFT (Directorate General of Foreign Trade), Ministry of Commerce and Industry, Government of India; [2] Office of Textile Commissioner, Ministry of Textiles, Government of India.

VIII. Consumption prices (at farm gate)

Implicit price corresponding to reference price plus the market price differential.

Source: See Reference prices (VI) and Market Price Differential (V).

IX. Value of consumption (at farm gate) [(VII)*(VIII)]

Level of consumption times Consumption price (at farm gate).

Source: Calculated based on items IV and V in Table 4.20 (tab CT MPS) in workbook 'Data_IND'.

SHEEP MEAT

I. Level of production

Total production of sheep meat, including goat meat, in carcass weight equivalent, converted from boneless to carcass by multiplying by 1.32.

Source: Basic Animal Husbandry and Fisheries Statistics, Department of Animal Husbandry, Dairying and Fisheries, Ministry of Agriculture and Farmers' Welfare, Government of India (2018 data is estimated by multiplying previous year production by mean growth rate of 2015-17).

II. Producer prices (at farm gate)

The average producer price of sheep meat (including goat meat), in carcass weight, obtained by dividing the value of output of sheep meat, carcass equivalent [1], by the total production of sheep meat, carcass equivalent [2], for the financial year.

Sources: [1] National Accounts Statistics, Ministry of Statistics and Program Implementation (MOSPI), Government of India; [2] Basic Animal Husbandry and Fisheries Statistics, Department of Animal Husbandry, Dairying and Fisheries, Ministry of Agriculture and Farmers' Welfare, Government of India.

III. Value of production (at farm gate) [(I)*(II)]

IV. Trade status

The trade status is determined based on exports and imports data: for 2000-18: Net exporter (NE).

Source: 2000-16: UN Comtrade database, United Nations; 2017-18: DGFT (Directorate General of Foreign Trade), Ministry of Commerce and Industry, Government of India (preliminary data for financial year 2018-19 covers the period from April to November 2018).

V. Market price differential at the farm gate

Calculated as Producer price (at farm gate) less Reference price (at farm gate). Over the period, no domestic or trade policies were identified that would justify the price gaps (positive in 2000, 2001, 2003-05; negative in 2002, 2007-18). The Market Price Differential is then presumed zero in line with the PSE methodology. However, as a result of other price support policies that lead to lower feed prices, the Market Price Support for sheep meat is overall positive.

VI. Reference prices at the farm gate (including the definition of the margin)

F.o.b. export unit values of fresh or chilled sheep carcass or half carcasses (HS 020421), annual average. *Add* transportation costs to the Indian border (freight New Zealand to JNPT (Jawaharlal Nehru Port) estimated as 6.7 % of the f.o.b. export unit value [2]. *Subtract* marketing margin (producer to wholesale) and transportation to most important wholesale markets (estimated as 2.5% of Producer price (at farm gate)) [3]. *Subtract* transportation cost from most important wholesale markets to JNPT (estimated as 2.0% of Producer price (at farm gate)) [4]. *Subtract* port charges (estimated as 0.9% of f.o.b. export unit value [5].

Source: [1] UN Comtrade database, United Nations; [2] Discussions with Indian freight forwarders and logistic companies; [3] Interviews and discussions with traders and commodity experts in India, accounting where relevant for processing costs and fees paid to intermediary agents; [4] Railway transportation costs based on data from the Ministry of Railways. Trucking costs based on discussions with trucking companies and individual truckers; [5] Based on publicly available information from the website of the ports examined and discussions with ports staff, various importers, and freight handlers.

VII. Level of consumption (at farm gate)

Consumption equals total domestic use during the financial year: total production plus imports minus exports (HS 02041000, 02042100, 02042200, 02042300*, 02043000, 02044100, 02044200, 02044300*, 02045000*; where * is carcass weight).

Source: DGFT (Directorate General of Foreign Trade), Ministry of Commerce and Industry, Government of India.

VIII. Consumption prices (at farm gate)

Implicit price corresponding to reference price plus the market price differential.

Source: See Reference prices (VI) and Market Price Differential (V).

IX. Value of consumption (at farm gate) [(VII)*(VIII)]

Level of consumption times Consumption price (at farm gate).

Source: Calculated based on items IV and V in Table 4.14 (tab SH MPS) in workbook 'Data_IND'.

POULTRY MEAT

I. Level of production

Total production of poultry (commercial broiler chicken, *i.e.*, chickens bred and raised specifically for meat production, and backyard or family chicken, *i.e.*, small farmer production), in carcass weight equivalent converted from boneless to carcass weight equivalent by multiplying by the weight conversion coefficient 1.75.

Source: Basic Animal Husbandry and Fisheries Statistics, Department of Animal Husbandry, Dairying and Fisheries, Ministry of Agriculture and Farmers' Welfare, Government of India (2018 data is estimated by multiplying previous year production by mean growth rate of 2015-17).

II. Producer prices (at farm gate)

The average producer price of poultry, in carcass weight, obtained by dividing the value of output of poultry [1], carcass equivalent, by the total production of poultry meat, carcass equivalent, for the financial year [2].

Source: [1] National Accounts Statistics, Ministry of Statistics and Program Implementation (MOSPI), Government of India; [2] Basic Animal Husbandry and Fisheries Statistics, Department of Animal Husbandry, Dairying and Fisheries, Ministry of Agriculture and Farmers' Welfare, Government of India.

III. Value of production (at farm gate) [(I)*(II)]

IV. Trade status

The trade status is determined based on exports and imports data: for 2000-18: Net exporter (NE), but overall trade is marginal.

Source: 2000-16: UN Comtrade database, United Nations; 2017-18: DGFT (Directorate General of Foreign Trade), Ministry of Commerce and Industry, Government of India (preliminary data for financial year 2018-19 covers the period from April to November 2018).

V. Market price differential at the farm gate

Calculated as Producer price (at farm gate) less Reference price (at farm gate). Poultry meat is a net exported product, but overall trade remains marginal. Border policies such as tariffs and non-tariff measures (such as SPS measures) explain the positive price gap where the Producer Price is above the Reference Price.

VI. Reference prices at the farm gate (including the definition of the margin)

F.o.b. export prices of chicken from Brazil, financial year average (April to March) [1]. *Add* transportation cost to the Indian border (freight Brazil to JNPT estimated as 8.1% of the f.o.b export price [2]. *Subtract* marketing margin (producer to wholesale) and transportation to most important wholesale markets (estimated as 2.5% of Producer price (at farm gate)) [3]. *Subtract* transportation cost from most important wholesale markets to port (estimated as 2.5% of Producer price (at farm gate)) [4]. *Subtract* port charges (estimated as 0.9% of f.o.b. export unit value [5].

Sources: [1] GIEWS (Global Information and Early Warning System), Food and Agriculture Organization of the United Nations (FAO). *Commodity Code*: CMM020700: Meat: Poultry (Brazil, Export Value For Chicken, F.O.B.) <http://www.fao.org/giews/food-prices/tool/public/#/dataset/international>; [2] Discussions with Indian freight forwarders and logistic companies; [3] Interviews and discussions with traders and commodity experts in India, accounting where relevant for processing costs and fees paid to intermediary agents; [4] Railway transportation costs based on data from the Ministry of Railways. Trucking costs based on discussions with trucking companies and individual truckers; [5] Based on publicly available information from the website of the ports examined and discussions with ports staff, various importers, and freight handlers.

VII. Level of consumption (at farm gate)

Consumption equals total domestic use during the financial year: total production plus imports minus exports [1].

Source: [1] DGFT (Directorate General of Foreign Trade), Ministry of Commerce and Industry, Government of India.

VIII. Consumption prices (at farm gate)

Implicit price corresponding to reference price plus the market price differential.

Source: See Reference prices (VI) and Market Price Differential (V).

IX. Value of consumption (at farm gate) [(VII)*(VIII)]

Level of consumption times Consumption price (at farm gate).

Source: Calculated based on items IV and V in Table 4.13 (tab PT MPS) in workbook 'Data_IND'.

EGGS

I. Level of production

Total production of eggs in the shell (used for both hatching and other purposes) [1]: converted from number to weight by unit weight of 55 grams for one egg [2].

Source: [1] Basic Animal Husbandry and Fisheries Statistics, Department of Animal Husbandry, Dairying and Fisheries, Ministry of Agriculture and Farmers' Welfare, Government of India (2018 data is estimated by multiplying previous year production by mean growth rate of 2015-17); [2] National Egg Coordination Committee.

II. Producer prices (at farm gate)

The country-level producer price is based on state-level prices calculated for Tamil Nadu and Andhra Pradesh, which represented 50 % of total production in 2014-15. For each state these prices are the simple average of monthly state-level prices for the entire financial year. The shares of states in their combined production of eggs represent the weights for calculating the weighted average price representing the country-level producer price.

Source: Directorate of Economics and Statistics, Ministry of Agriculture and Farmers' Welfare, Government of India.

III. Value of production (at farm gate) [(I)*(II)]

IV. Trade status

The trade status is determined based on exports and imports data: for 2000-18: Net exporter (NE).

Source: 2000-16: UN Comtrade database, United Nations; 2017-18: DGFT (Directorate General of Foreign Trade), Ministry of Commerce and Industry, Government of India (preliminary data for financial year 2018-19 covers the period from April to November 2018).

V. Market price differential at the farm gate

Calculated as Producer price (at farm gate) less Reference price (at farm gate). Eggs are a net exported product for the entire 2000-18 period. For the years when producer prices are below reference prices, the negative gaps are kept as they are a result of restrictive policies governing the marketing of agricultural commodities in India (the state-level Agricultural Produce Market Committee Acts (APMC), which influence pricing, procuring, stocking, moving, and trading) as well as of on and off export restrictions applied (particularly export licensing) throughout the period covered.

VI. Reference prices at the farm gate (including the definition of the margin)

F.o.b. export unit values of eggs in the shell (HS 04070020), financial year average (April to March) [1]. *Subtract* marketing margin (producer to wholesale) and transportation to most important wholesale markets (estimated as 2.7% of Producer price (at farm gate)) [2]. *Subtract* transportation cost from most important wholesale markets to port (estimated as 5.0% of Producer price (at farm gate)) [3]. *Subtract* port charges (estimated as 1.5% of f.o.b. export unit value [4].

Source: [1] DGFT (Directorate General of Foreign Trade), Ministry of Commerce and Industry, Government of India; [2] Interviews and discussions with traders and commodity experts in India, accounting where relevant for processing costs and fees paid to intermediary agents; [3] Railway transportation costs based on data from the Ministry of Railways. Trucking costs based on discussions with trucking companies

and individual truckers; [4] Based on publicly available information from the website of the ports examined and discussions with ports staff, various importers, and freight handlers.

VII. Level of consumption (at farm gate)

Consumption equals total domestic use during the financial year: total production plus imports minus exports [1].

Source: [1] DGFT (Directorate General of Foreign Trade), Ministry of Commerce and Industry, Government of India.

VIII. Consumption prices (at farm gate)

Implicit price corresponding to reference price plus the market price differential.

Source: See Reference prices (VI) and Market Price Differential (V).

IX. Value of consumption (at farm gate) [(VII)*(VIII)]

Level of consumption times Consumption price (at farm gate).

Source: Calculated based on items IV and V in Table 4.15 (tab EG MPS) in workbook 'Data_IND'.

BEEF AND VEAL

I. Level of production

Total production of bovine meat (mainly buffalo), in carcass weight equivalent, converted from boneless to carcass by multiplying by weight conversion factor of 1.8. Buffalo meat accounts for 90% of India's total production of bovine meat.

Source: Basic Animal Husbandry and Fisheries Statistics, Department of Animal Husbandry, Dairying and Fisheries, Ministry of Agriculture and Farmers' Welfare, Government of India.

II. Producer prices (at farm gate)

The average producer price of bovine meat (from buffalo), in carcass weight, obtained by dividing the value of output of bovine meat [1], carcass equivalent, by the total production of bovine meat, carcass equivalent for the financial year [2].

Sources: [1] National Accounts Statistics, Ministry of Statistics and Program Implementation (MOSPI), Government of India; [2] Basic Animal Husbandry and Fisheries Statistics, Department of Animal Husbandry, Dairying and Fisheries, Ministry of Agriculture and Farmers' Welfare, Government of India.

III. Value of production (at farm gate) [(I)*(II)]

IV. Trade status

The trade status is determined based on exports and imports data: for 2000-18: Net exporter (NE).

Source: 2000-16: UN Comtrade database, United Nations; 2017-18: DGFT (Directorate General of Foreign Trade), Ministry of Commerce and Industry, Government of India (preliminary data for financial year 2018-19 covers the period from April to November 2018).

V. Market price differential at the farm gate

Calculated as Producer price (at farm gate) less Reference price (at farm gate). Bovine meat is a net exported product for the entire 2000-18 period. For the years when producer prices are below reference prices, the negative gaps are kept as they are a result of restrictive policies governing the marketing of agricultural commodities in India (the state-level Agricultural Produce Market Committee Acts (APMC), which influence pricing, procuring, stocking, moving, and trading) as well as restrictions on cow slaughtering due to religious reasons (ban in 24 states, restrictions in others).

VI. Reference prices at the farm gate (including the definition of the margin)

F.o.b. export unit values, bovine meat from buffalo: boneless, fresh, chilled or frozen (HS 020130 and HS 020230), financial year average (April to March), adjusted to carcass equivalent by dividing by 1.8 (conversion coefficient provided by Indian experts) [1]. (Exports of beef as well as buffalo fresh, chilled or frozen, as carcasses, half carcasses or other cuts with bone-in, are prohibited. Exports of boneless meat of buffalo fresh, chilled, or frozen, are allowed.) *Subtract* marketing margin (producer to wholesale) and transportation to most important wholesale markets (estimated as 3.0% of Producer price (at farm gate)) [2]. *Subtract* transportation cost from most important wholesale markets to port (estimated as 2.8% of Producer price (at farm gate)) [3]. *Subtract* port charges (estimated as 0.9% of f.o.b. export unit value [4].

Sources: [1] DGFT (Directorate General of Foreign Trade), Ministry of Commerce and Industry, Government of India; [2] Interviews and discussions with traders and commodity experts in India, accounting where relevant for processing costs and fees paid to intermediary agents; [3] Railway transportation costs based on data from the Ministry of Railways. Trucking costs based on discussions with trucking companies and individual truckers; [4] Based on publicly available information from the website of the ports examined and discussions with ports staff, various importers, and freight handlers.

VII. Level of consumption (at farm gate)

Consumption equals total domestic use during the financial year: total production plus imports minus exports [1].

Source: [1] DGFT (Directorate General of Foreign Trade), Ministry of Commerce and Industry, Government of India.

VIII. Consumption prices (at farm gate)

Implicit price corresponding to reference price plus the market price differential.

Source: See Reference prices (VI) and Market Price Differential (V).

IX. Value of consumption (at farm gate) [(VII)*(VIII)]

Level of consumption times Consumption price (at farm gate).

Source: Calculated based on items IV and V in Table 4.12 (tab BF MPS) in workbook 'Data_IND'.

MILK

I. Level of production

Total production of liquid milk.

Source: 2000-14: National Dairy Development Board, Government of India. 2015-18: Department of Animal Husbandry, Dairying and Fisheries (DAHDF), Ministry of Agriculture and Farmers' Welfare, Government of India (2018 data is estimated by multiplying previous year production by mean growth rate of 2015-17).

II. Producer prices (at farm gate)

The country-level producer price is based on the average producer prices for buffalo milk and cow milk from co-operatives and private dairies. The state-level prices are collected for the financial year from 15 states (Haryana, Punjab, Rajasthan, Uttar Pradesh, Bihar, Odisha, West Bengal, Gujarat, Madhya Pradesh, Maharashtra, Andhra Pradesh, Karnataka, Kerala, Tamil Nadu and Telangana) which together represented more than 90% of national milk production in 2015-17. Conversion from prices in INR per litre to INR per kg by dividing by 1.03 kg per litre.

Sources: National Dairy Development Board, Government of India; interviews with private dairies.

III. Value of production (at farm gate) [(I)*(II)]

IV. Trade status

The trade status is determined based on exports and imports data: for 2000-18: Net exporter (NE).

Source: 2000-18: DGFT (Directorate General of Foreign Trade), Ministry of Commerce and Industry, Government of India (preliminary data for financial year 2018-19 covers the period from April to November 2018).

V. Market price differential at the farm gate

Calculated as Producer price (at farm gate) less Reference price (at farm gate). Milk is a net exported product for the entire 2000-18 period. For the years when producer prices are below reference prices, the negative gaps are kept as they are a result of restrictive policies governing the marketing of agricultural commodities in India (the state-level Agricultural Produce Market Committee Acts (APMC), which influence pricing, procuring, stocking, moving, and trading) as well as of on and off export restrictions applied throughout the period covered.

VI. Reference prices at the farm gate (including the definition of the margin)

The border price of milk is a calculated implicit value. The calculation is based on two assumptions. First, world markets for tradable dairy commodities are competitive, which allows the formation of a single price for each of the solid components of raw milk (milk fat and protein) used to make dairy products. Secondly, each type of dairy product contains a unique and fixed amount of each of those solid components of milk. Under this method, the implicit price of milk at the border (P_b) is calculated from the prices of those components:

$$P_b = \left(\frac{a}{b}\right)P_{wb} + \left(\frac{c}{d}\right)P_{ws} \text{ where:}$$

a and b are milk fat contained in one tonne of raw milk and butter respectively, c and d are non-fat-solids contained in one tonne of milk and skimmed milk powder respectively, and P_{wb} and P_{ws} are Oceanian f.o.b. export prices, financial year average (April to March), of butter and skimmed milk powder respectively [1]. Add transportation cost to Indian border (between New Zealand (Wellington) and Mundra) as 2.2% of the f.o.b export price series for SMP and 7% for butter [2]. The reference price of milk at farm gate (P_r) is the implicit milk border price net of processing costs C [3] (C is estimated equal to 10% of Producer price (at farm gate)):

$$P_r = P_b - C$$

P_{wb} and P_{ws} are from Agricultural Marketing Service, United States Department of Agriculture.

Source: [1] Aglink database, OECD-FAO Agricultural Outlook; [2] and [3] Interviews and discussions with traders and commodity experts in India.

VII. Level of consumption (at farm gate)

Consumption equals total domestic use during the financial year: total production plus imports minus exports [1].

Source: [1] DGFT (Directorate General of Foreign Trade), Ministry of Commerce and Industry, Government of India.

VIII. Consumption prices (at farm gate)

Implicit price corresponding to reference price plus the market price differential.

Source: See Reference prices (VI) and Market Price Differential (V).

IX. Value of consumption (at farm gate) [(VII)*(VIII)]

Level of consumption times Consumption price (at farm gate).

Source: Calculated based on items IV and V in Table 4.11 (tab MK MPS) in workbook 'Data_IND'.