

ANNUAL REVIEW OF FERTILIZER PRODUCTION AND CONSUMPTION 2021-22 HIGHLIGHTS

Mixed growth in production

- **Fertilizer nutrients:** Production in 2021-22: N: 13.87 million MT (+0.9%), P₂O₅: 4.71 million MT (-0.5%), N+P₂O₅: 18.58 million MT (+0.5%).
- **Fertilizer products:** Production in 2021-22: Urea: 25.08 million MT (+1.9%); DAP: 4.22 million MT (+11.9%); SSP: 5.35 million MT (+8.9%); NP/NPKs: 8.31 million MT (-10.9%).

Mixed growth in imports

- **Imports of fertilizer products in 2021-22:** Urea: 9.14 million MT (-7.1%); DAP: 5.46 million MT (+11.9%); NP/NPKs: 1.17 million MT (-15.8%); MOP: 2.46 million MT (-41.8%), Total products: 18.40 million MT (-10.4%).

Retail prices of fertilizers

- Basic retail price (MRP) of urea remained unchanged at Rs.5360/- per tonne (Rs.268 per bag of 50 kg). Size of bag rationalized from 50 kg to 45 kg. Price per bag of urea of 45 kg fixed at Rs. 242/- w.e.f. 1st March 2018. 5% extra for coating of urea with *neem* oil.
- MRP of P & K fertilizers is market driven under NBS policy.

Decline in fertilizer consumption

- **Consumption of nutrients in 2021-22:** N: 19.44 million MT (-4.7%); P₂O₅: 7.83 million MT (-12.8%); K₂O: 2.53 million MT (-19.8%); Total (N+P₂O₅+K₂O): 29.80 million MT (-8.4%).
- **Consumption of fertilizer products in 2021-22:** Urea: 34.18 million MT (-2.5%); DAP: 9.27 million MT (-22.2%); MOP: 2.46 million MT (-28.3%); NP/NPK complex fertilizers: 11.48 million MT (-2.8%); SSP: 5.68 million MT (+26.6%); Total products: 63.94 million MT (-5.4%).

NPK use ratio widened

- All-India NPK use ratio widened from 6.5:2.8:1 during 2020-21 to 7.7:3.1:1 during 2021-22.

Per hectare use reduced

- Per hectare use of total fertilizer nutrients (N+P₂O₅+K₂O) reduced from 160.1 kg in 2020-21 to 146.7 kg in 2021-22.

92% consumption in 13 states

- Uttar Pradesh had the largest share (17.3%), followed by Maharashtra (10.5%), Madhya Pradesh (8.9%), Karnataka (7.4%), Punjab (6.7%), Gujarat and Andhra Pradesh (5.7% each), Telangana (5.5%), Bihar and Rajasthan (5.4% each), West Bengal (5.2%), Haryana (4.6%) and Tamil Nadu (3.8%).

Normal monsoon at the country level

- Rainfall was 99% of the LPA during Southwest monsoon 2021.
- Out of 36 meteorological sub-divisions, 30 received excess/normal rainfall and remaining 6 sub-divisions received deficient rainfall.

Production of major crops up

- **Production of major crops in 2021-22:** Food grains: 315.7 million MT (+1.6%); oilseeds 37.7 million MT (+4.9%), sugarcane 431.8 million MT (+6.5%); cotton 31.2 million bales (-11.5%) and jute & mesta 10.3 million bales (+10.3%).

Fertilizer Policies

• Payment situation

- Budget allocation for 2021-22 was increased significantly to Rs. 1,40,122 crore from the level of original BE of Rs. 79, 530 crore. This facilitated timely payment of DBT subsidy. However, annual escalation for 2020-21 and 2021-22 remained pending for urea units.
- DOF notified primary and secondary freight rates in April 2022 till 2020-21 which were pending after 2016-17. But, updation of primary road freight rates for P&K fertilizers remained pending.

• Urea

- Payments of differential in minimum fixed cost resulting after implementation of Modified NPS-III (Rs.1635 – Rs.1285) on production beyond Re-assessed Capacity for the period 2014-15 onwards were cleared during the year.
- Policy for minimum fixed cost and updation of fixed cost for urea units remained under consideration of the Government.
- The Committee on urea policy submitted the Report to the DOF. Major recommendations include amendments in existing policies like approval of minimum fixed cost and updation of fixed cost and also reforms like implementation of NBS Policy for urea, DBT in true sense and augmenting allocation of domestic natural gas.
- Deliberations of a Committee constituted by DOF to updation of fixed cost for urea units are continuing.

• P & K fertilizers

- Rates of subsidy under NBS Policy were increased significantly for *khari* 2021 and *rabi* 2021-22 to insulate farmers from abnormal increase in international prices of fertilizers and raw materials. Additional subsidy on DAP and 3 important grades of NP/NPKs were allowed during *rabi* 2021-22. Government is also considering to compensate the suppliers of P&K fertilizers for the losses incurred due to volatile international markets and sharp depreciation in rupee vis-à-vis US dollar for the period 25th October, 2021 to 31st March, 2022.

• Taxation

- Payment of IGST on Ocean freight on CIF import contracts on reverse charge basis was declared in violation of GST law by the Supreme Court.
- The formula for refund of unutilized input tax credit arising due to inverted duty structure, was modified to allow refund in same proportion as the ITC has been utilized for inputs and input services. ■

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ANNUAL REVIEW OF FERTILIZER PRODUCTION AND CONSUMPTION 2021-22

EXECUTIVE SUMMARY

The year 2021-22 began with reasonable inventory of fertilizers which facilitated positioning of fertilizers for sowing operations before the onset of cropping season. Southwest monsoon during the past three consecutive years has been very good. Overall normal rainfall facilitated good coverage under *kharij* and *rabi* crops during 2021-22. Availability of fertilizers from opening stock, domestic production and imports was adequate to take care of the demand for 2021-22. This has resulted higher agricultural production during the year.

SOUTHWEST MONSOON

Southwest monsoon 2021 arrived in Kerala on 3rd June, 2021 after a delay of two days. Overall rainfall from 1st June to 30th September, 2021 was 99% of long period average (LPA). Out of 36 meteorological sub-divisions, 30 sub-divisions received normal to excess rains and remaining 6 sub-divisions received deficient rains during the period.

Water storage position in major reservoirs was comfortable in 2021. Live storage in 130 reservoirs at the end of *kharij* 2021 was 138.33 BCM as against 150.19 BCM during the corresponding period in the previous year. This was 92% of the last year and 104% of the normal storage.

FERTILIZER CONSUMPTION

Total fertilizer nutrient consumption (N+P₂O₅+K₂O) was estimated at 29.80 million metric tonnes (million MT) as against 32.54 million MT in the previous year registering a negative growth of 8.4%. The consumption of N, P₂O₅ and K₂O at 19.44 million MT, 7.83 million MT and 2.53 million MT during 2021-22 declined by 4.7%, 12.8% and 19.8%, respectively, over 2020-21.

In terms of products, consumption of urea at 34.18 million MT, DAP at 9.27 million MT, MOP at 2.46 million MT and NP/NPK complex fertilizers at 11.48 million MT during 2021-22 witnessed decline of 2.5%, 22.2%, 28.3% and 2.8%, respectively, over 2020-21. However, consumption of SSP at 5.68 million MT

recorded a sharp increase of 26.6% during the period. Total consumption of fertilizer products 63.94 million MT during 2021-22 showed a decline of 5.4% over 2020-21.

All-India NPK use ratio widened from 6.5:2.8:1 during 2020-21 to 7.7:3.1:1 during 2021-22.

Per hectare use of total nutrients (N+P₂O₅+K₂O) reduced from 160.1 kg in 2020-21 to 146.7 kg in 2021-22.

FERTILIZER INVENTORY

Reasonable inventory at the beginning of the year facilitated positioning of fertilizers for sowing operations before the onset of cropping season. Inventory of urea at various points excluding stock at the dealers' point was more than 1.1 million MT at the beginning of the year. Similarly, inventory of DAP and NP/NPKs together was about 2.0 million MT, SSP 0.47 million MT and MOP 0.76 million MT.

PRODUCTION OF FERTILIZERS

Fertilizer production at 18.58 million MT (N+P₂O₅) during 2021-22 witnessed a marginal increase of 0.5% over 2020-21. While production of nitrogen (N) increased marginally by 0.9% to 13.87 million MT, phosphate (P₂O₅) declined by 0.5% to 4.71 million MT in 2021-22.

In terms of products, production of urea at 25.08 million MT, DAP at 4.22 million MT and SSP at 5.35 million MT during 2021-22 marked increase of 1.9%, 11.9% and 8.9%, respectively, over 2020-21. However, production of NP/NPK complex fertilizers at 8.31 million MT witnessed a sharp decline of 10.9% during 2021-22.

GAS AVAILABILITY

Supply of domestic gas to fertilizer plants has dwindled gradually over the years. This has made fertilizer plants more and more dependent on imported LNG. Supply of domestic gas declined further from 10.2 MMSCMD in 2020-21 to 8.0 MMSCMD in 2021-22.

Thus domestic gas constituted only 17.7% of total gas consumed during the year.

IMPORT OF FERTILIZERS

Except DAP, import of major fertilizers declined during 2021-22. Import of urea at 9.14 million MT, MOP at 2.46 million MT and NP/NPK complex fertilizers at 1.17 million MT during 2021-22 declined by 7.1%, 41.8% and 15.8%, respectively, over 2020-21. However, import of DAP at 5.46 million MT recorded an increase of 11.9% during the period.

RETAIL PRICES OF FERTILIZERS

The basic retail price of urea remained unchanged at Rs.5360 per tonne since November 2012. *W.e.f.* 25th May, 2015, Government of India (GOI) made it mandatory for all indigenous urea manufacturers to produce 100% *neem* coated urea of their total urea production. The same policy is applied for imported urea at the port. GOI allowed the manufacturers / importers to charge 5% extra on the MRP of urea. Therefore, the retail price of *neem* coated urea (excluding tax) works out to Rs. 5628 per tonne.

Government has made it mandatory to resize urea bag from 50 kg to 45 kg. Department of Agriculture, Cooperation and Farmers Welfare notified price per bag of urea of 45 kg at Rs. 242/- *w.e.f.* 1st March 2018 from Rs. 268/- per bag of 50 kg earlier.

The retail prices of P & K fertilizers covered under NBS scheme are market driven and announced by the fertilizer companies from time to time.

PRODUCTION OF MAJOR CROPS

Total production of food grains is estimated to increase from 310.7 million MT in 2020-21 to 315.7 million MT in 2021-22 representing a growth of 1.6%. Among food grain crops, production of rice is estimated to increase by 4.8% and pulses by 8.8% during 2021-22 over 2020-21. However, production of wheat and coarse cereals is estimated to decline by 2.5% and 0.8%, respectively, during the period. Production of oilseeds, sugarcane and jute & mesta is estimated to increase by 4.9%,

6.5% and 10.3%, respectively, during 2021-22 over 2020-21. However, production of cotton is estimated to decline by 11.5% during the same period

POLICY AND PAYMENT ISSUES

Payments of differential in minimum fixed cost resulting after implementation of Modified NPS-III (Rs.1635 – Rs.1285) on production beyond Re-assessed Capacity for the period 2014-15 onwards were cleared during the year.

Policy for minimum fixed cost and updation of fixed cost for urea units remained under consideration of the Government. The Committee on urea policy submitted the Report to the DOF. Major recommendations include amendments in existing policies like approval of minimum fixed cost and updation of fixed cost and also reforms like implementation of NBS Policy for urea, DBT in true sense and augmenting allocation of domestic natural gas. Deliberations of a Committee constituted by DOF to updation of fixed cost for urea units are continuing.

Budget allocation for 2021-22 was increased significantly to Rs. 1,40,122 crore from the level of original BE of Rs. 79, 530 crore. This facilitated timely payment of DBT subsidy. However, annual escalation due to increase in gas cost for 2020-21 and 2021-22 remained pending for urea units.

Rates of subsidy under NBS Policy were increased significantly for *kharif* 2021 and *rabi* 2021-22 to insulate farmers from abnormal increase in international prices of fertilizers and raw materials. Additional subsidy on DAP and 3 important grades of NP/NPKs were allowed during *rabi* 2021-22. Government is also considering to compensate the suppliers of P&K fertilizers for the losses incurred due to volatile international markets and sharp depreciation in rupee *vis-à-vis* US dollar for the period 25th October, 2021 to 31st March, 2022.

Mixture/customized fertilizer manufacturers were made eligible for 25% of their total requirement of subsidized fertilizers authorized by state governments. ■

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OUTLOOK FOR 2022-23

POLICY AND PAYMENT ISSUES

Subsidy rates for *kharif* 2022 under NBS Policy were also increased significantly to protect farmers from steep increase in cost of fertilizers. But, rate of subsidy on SSP was not increased. DOF notified primary and secondary freight rates in April 2022 till 2020-21 which were pending after 2016-17. But, updation of primary road freight rates for P&K fertilizers remained pending.

Additional budget allocation of Rs. 1,10,000 crore has been announced for 2022-23 over and above the budget estimate of Rs. 1,05,222 crores.

SOUTH-WEST MONSOON

Onset of Southwest monsoon 2022 was advanced by 3 days. However, rainfall during June 2022 was 8% below LPA but in July and August, it was 17% and 3% above LPA. IMD predicted normal rainfall during Southwest monsoon 2022. The cumulative rainfall during 1st June to 31st August, 2022 was 6 per cent above the LPA. The country received 743.8 mm rains as against 700.7 mm of normal rains during the period. Out of 36 meteorological sub-divisions, 30 constituting 83% of the total area of the country received excess/normal rains. Out of 703 reported districts, 68% districts received normal to excess rains during the period.

Total live storage available in 143 reservoirs was 144.97 BCM as on 25th August, 2022 as against 112.69 BCM on the same date in the previous year. Current year's storage is 129% of the last year's storage and 125% of the normal storage.

CROP SITUATION

Monsoon became active over most parts of India during July 2022. However, uneven distribution of rains during the period has created concerns over adverse impact on *kharif* crops. As per the available information, total area sown under all *kharif* crops was 104.51 million hectares (million ha) as on 26th August, 2022 compared to 106.19 million ha during the corresponding period in the previous year. This was 1.6% lower than the corresponding period in the previous year.

FERTILIZER SALE

Uneven distribution of monsoon rains and decline in sown area affected demand of some products during April/July 2022 over April/July 2021. Sale of urea at 10.42 million MT and DAP at 3.13 million MT during April/July 2022 registered increase of 2.2% and 15.1%, respectively, over April/July 2021. However, sale of NP/NPKs at 2.49 million MT, SSP at 1.82 and MOP (for direct application) at 0.40 million MT witnessed decline of 32.4%, 4.0% and 55.5%, respectively, during the period.

PROSPECTS OF FERTILIZER CONSUMPTION

Overall Southwest monsoon (June-September) 2022 has been uneven but overall normal so far. There may be uneven growth in consumption of different fertilizers due to lower cropped area for some crops for *kharif* 2022. Normal Southwest monsoon is likely to leave good moisture contents in the soil for ensuing *rabi* crop season. Water availability in the reservoirs at the end of *kharif* season is also likely to be comfortable. Continuing increase in international prices of fertilizers and raw materials remains the challenge for availability of fertilizers at reasonable prices. Overall growth in consumption of fertilizers for the full year 2022-23 is expected to remain a fairly good over the previous year. ■

Annual Review of Fertilizer Production and Consumption 2021-22

1.0 POLICIES RELATED TO FERTILIZER SECTOR

1.1 Issues of Urea Industry

Indian urea units have been consistently providing urea at much lower cost than the cost of imported urea for last so many years. Domestic production has also ensured security of supplies. The latest turmoil in international market has again brought the importance of domestic production. However, domestic producers have been facing difficulty mainly due to delay in updation of cost data.

1.1.1 Minimum Fixed Cost

Provision of Minimum Fixed Cost for urea units was integral part of the Modified NPS-III Policy originally notified on 2nd April, 2014. However, this policy remained pending till 2020. It was implemented after amendment in March 2020 by removing the clause pertaining to Minimum Fixed Cost. It was decided to defer the issue of Minimum Fixed Cost to be taken up later. Delay in approval of policy for minimum fixed cost is not only affecting the viability of three low cost gas based urea units with reassessed annual capacity of 4.3 million MTs, but it is also impacting the viability of additional production beyond Re-Assessed Capacity (RAC) of another 4 million MTs per annum by all urea units. This issue was flagged in response to the Department of Fertilizers (DOF) directive dated 18th January 2022 to gas based urea units not to take any annual shutdown and maximize domestic production of urea in view of steep increase in prices of imported urea. While assuring maximum domestic production by the domestic gas based urea units, it was underlined that approval of the pending policy of minimum fixed cost would encourage such additional production beyond RAC, as reimbursement against additional production is also linked to minimum fixed cost. The approval of policy for minimum fixed cost continues to remain under consideration of the Government.

1.1.2 Escalation Claims

The pool price of gas has been rising sharply in the recent quarters, especially from the quarter of January-March 2021 onwards. Monthly pool price of gas increased from Rs.668.63/MMBTU for December, 2020 to Rs.2054.31/MMBTU for July 2022 on Net Calorific Value (NCV) basis. These are not reflected in the subsidy rates till both quarterly and annual escalation claims filed by the units are processed and revised subsidy rates are notified by the DOF. Processing and notification of these escalation claims are generally get inordinately delayed. For instance,

annual escalation claims for 2020-21 and 2021-22 are still pending. Urea units have been getting subsidy on the gas prices of the 3rd quarter (October-December) of the financial year 2021-22, which is the latest quarterly escalation claims finalized by DOF. There has been sharp increase in pool price of gas over 3rd quarter of 2021-22 from average of Rs.1238/MMBTU for October-December, 2021 to Rs.1881/MMBTU for April-June-2022 quarter. This itself translates into an increase of about Rs.15,000/MT of urea from 3rd quarter of 2021-22 to the 1st quarter of 2022-23, which is yet to be reflected in the subsidy rates. This has resulted in blockage of huge sum of money for the industry. Need to update the quarterly cost data can be hardly over-emphasised to give relief to already financially stressed urea units.

1.1.3 Further Increase in Fixed Cost

Modified NPS-III policy amended and approved in March 2020 was implemented for 2014-15 onwards. This allowed a nominal increase of Rs.350/tonne of urea in fixed cost to partly address the increase in selected 4 elements viz., salaries & wages, contract labour, repair & maintenance and selling expenses. This increase was allowed based on the analysis of increase in cost upto the year 2008-09 over 2002-03. There has been significant increase in these 4 elements of cost beyond 2008-09. Moreover, significant increase in elements of fixed cost, other than these selected 4 items, over the costed year 2002-03 for NPS-III policy for about 19 years also remains unrecognised. The Government has mopped up successive improvements in energy efficiency against the NPS policy in 2015 and 2018 under NUP-2015. But, the fixed cost related to investment made for energy improvement projects remains to be included as part of fixed cost. Hence, there is an urgent need for updating all elements of fixed cost to cover past increases. To simplify the process of updation of fixed cost, which will avoid undue delays, the fixed cost should be linked to appropriate cost index.

These issues have been discussed on various forums including Working Groups set up under *Chintan Shivir*. All the data related to fixed cost and variable cost are available and need to reflect in the concession rates for urea units in timely manner.

1.1.4 Committee on Urea Policy

A Committee on urea policy was constituted on 20th September, 2021 under the Chairmanship of the Joint Secretary (NA), DOF (Incharge of Urea Policy) and members from the industry and FAI.

The terms of reference for the Committee are as under:

- (a) The Committee will examine the feasibility of formulating a single, uniform and simplified policy for administering urea subsidy mechanism pegged at import parity price of urea or NBS or any other objective criteria.
- (b) Suggest any other changes as required in the existing policy provisions.
- (c) The Committee will submit its report/draft proposal for feasibility of formulating a single, uniform and simplified policy for administering urea subsidy within 3 months from the date of its constitution.

The Committee and the Sub-Committee completed deliberations and submitted their reports. The reports have covered the issues of urea pricing policies including issues related to supply and cost of natural gas and recommended short and medium term reforms in the policy.

1.1.5. Payment of Increased Fixed Cost as per Modified NPS-III Policy for Production beyond RAC

With the amendment and approval of Modified NPS-III Policy, the minimum fixed cost allowed for production of urea beyond RAC became Rs.1635/tonne instead of Rs.1285/tonne applicable earlier. The differential between Rs.1635 and Rs.1285 per tonne became payable on additional production from the period 2014-15 onwards. These payments were settled during the year.

1.2 Policies Related to P&K Fertilizers

1.2.1 NBS Policy for 2021-22

Department of Fertilizers vide O.M. dated 9th April, 2021 decided to extend the NBS rates of 2020-21, for the year 2021-22 till further orders. There was significant increase in international prices of fertilizers and raw materials, intermediates used to manufacture P&K fertilizers. This made it difficult for the industry to maintain the MRP at old levels. To keep the MRP at the old level, DOF revised the NBS rates of the year 2021-22 on 20th May, 2021 applicable from the date of notification till 31st October, 2021. The revised per kg subsidy on phosphate (P) increased from Rs.14.888/- to Rs. 45.323/-. Accordingly, NBS rates for P containing fertilizers increased significantly. NBS rate of DAP increased from Rs. 10,231/- to Rs. 24,231/- per tonne and for SSP, it went up from Rs. 2,643/- to Rs. 7,513/- per tonne. NBS rates for different grades of NP/NPK fertilizers were in the range of Rs. 11,134/- to Rs. 19,910/- per tonne. However, NBS rates for N, K and S remained unchanged at the previous year's level. Therefore, NBS rate for MOP and ammonium sulphate remained unchanged at Rs. 6,070/- and Rs. 4,398/- per tonne, respectively. Two new NPK complex fertilizers

(8-21-21 and 9-24-24) were included in the NBS scheme during the year.

The international prices continued to rise further turning margins of suppliers to negative at the existing MRPs. FAI and industry represented to the Government for the need for further increase of subsidy for all nutrients to maintain supply of the fertilizers. Government took cognizance of the price situation in international market. Vide O.M. dated 13th October, 2021, Government extended the NBS rates applicable from 20th May, 2021 for *rabi* 2021-22 *i.e.* from 1st October, 2021 to 31st March, 2022. Special one-time package with an additional subsidy of Rs. 8,769/- for DAP and Rs. 2,000/- per tonne each for 20-20-0-13, 10-26-26-0 and 12-32-16 grades was also notified for period from 1st October, 2021 to 31st March, 2022. The potash derived from molasses (PDM) *i.e.* 0-0-14.5-0 was included under the NBS scheme and subsidy rate was fixed at Rs.1,467/- per tonne.

In view of continuously rising international price of fertilizers and raw materials, the industry had been finding it difficult to arrange adequate quantities of fertilizers with the prevailing rates of subsidy. The Government being fully aware of the situation, vide its letter dated 25th January, 2022 promised to provide additional relief on losses incurred in producing and importing additional quantities of DAP/NPKs. The domestic manufacturers of DAP were losing Rs.18,000-20,000 per tonne even after factoring in the additional rate of subsidy announced in October, 2021. In view of the magnitude of losses and representation from industry and FAI to the Government for need to compensate for the losses on entire quantity produced during *rabi* 2021-22, Government is considering compensation both for imported & indigenous DAP for the period October 25, 2021 to March 31, 2022.

1.2.2 NBS Policy for 2022-23

The international prices of finished fertilizers and raw materials increased further after Russia-Ukraine crisis. In order to keep the P&K fertilizer prices affordable to the farmers, DOF vide notification dated 27th April, 2022, enhanced the rates of subsidy under NBS policy. Revised rates are Rs. 91.96, Rs.72.74, Rs.25.31 and Rs.6.94 per kg for N, P, K and S, respectively for *kharif* 2022. Thus, there was significant increase in rates of subsidy on P&K fertilizer materials included in NBS. However, subsidy for SSP was kept at the same level *i.e.* Rs.7,513/- per tonne as applicable from 20th May, 2021 to 31st March, 2022.

1.2.3 Reasonableness of Profits/MRP

The issue of exclusion of indirect taxes like GST while computing reasonableness of profit has been under the consideration of the Government for long time. This needs a clarification by the Government.

1.2.4 Potash Derived from Molasses

Regarding payment of subsidy on potash derived from molasses (PDM), a meeting was held in the DOF on 12th November, 2021 for framing the guidelines to claim the subsidy on the sale of PDM. Because it would be difficult to include all the interested small / big sugar industries under the NBS scheme, FAI suggested that fertilizer industry may enter into an agreement with the sugar factories / distilleries for marketing of PDM. The bags containing PDM may include the name of both manufacturers and marketers and the subsidy should be allowed to be claimed by the marketers only. The fertilizer companies will be responsible for quality / standard of PDM. The Guidelines relating to Potash Derived from Molasses (0-0-14.5-0) under Nutrient Based Subsidy (NBS) scheme were issued by the DOF vide OM dated 12th July, 2022.

1.2.5 Constitution of Expert Committee

Department of Fertilizers constituted an expert committee comprising of officials from the NITI Aayog, Department of Agriculture and Farmers Welfare, Department of Expenditure, Department of Agricultural Research and Education and from the fertilizer industry to recommend measurers in the NBS policy to promote the objectives of present policy initiatives of the Government of India including Atma Nirbhar Bharat Mission. The terms of reference for the Committee are as under:

- i. To examine and recommend strategies for economizing/rationalizing NBS subsidy rates as per market dynamics/trend, demand availability and reasonableness of MRP.
- ii. To examine the scope of differential NBS rates for imported and indigenous P&K fertilizers under the NBS policy and make recommendations.
- iii. To examine and recommend measures for improving competitiveness of indigenous manufacturing of phosphoric acid/SSP along with long-term strategies for securing rock phosphate globally.
- iv. To examine the issue of disposal of Phosphogypsum (by product in the production of Phos Acid) and use as fertilizer under FCO, under the circular economy concept.
- v. To recommend measurers in the NBS policy towards promotion of balanced use of fertilizers.
- vi. To examine the aggregator model for SSP/marketing arrangements guidelines for P&K fertilizers.
- vii. To include any other issue.

The deliberations of the Committee are continuing.

1.2.6 SSP Industry

Hon'ble Minister of Chemicals & Fertilizers and Health & Family Welfare had a meeting of some SSP

manufactures and FAI on 29th July, 2021 to discuss the issues of quality, MRP and assessment of likely production. Hon'ble Minister of State for Chemicals and Fertilizers was also present along with Secretary (Fertilizers). SSP manufacturers were told that there would be no compromise on the unreasonable MRP and quality of SSP. Stringent action would be taken by keeping out SSP fertilizer or the SSP companies from the NBS scheme. As a follow up action of the meeting, DOF asked all the P&K fertilizer companies, including SSP manufacturers to keep the reasonableness of their MRPs of fertilizers.

SSP is the most popular phosphatic fertilizer after DAP as it contains three major nutrients along with many micronutrients. SSP is indigenously manufactured fertilizer and supply can be made at a short notice. With this background, DOF circulated O.M. dated 10th December, 2021 to the Principal Secretary/Secretary (Agriculture) of all states/UTs with a request to carry out awareness programmes and promotional activities across the states in India to make farmers aware about the benefits of SSP.

A SSP Committee has been set up vide notification dated 23rd June, 2022 to develop guidelines on various aspects of SSP sector. The Committee had two meetings and guidelines have been discussed. These will be finalized and are expected to be notified shortly.

1.2.7 Rock Phosphate

PDIL and FEDO have been drawing the random samples of imported Rock Phosphates from the ports for testing. However, due to outbreak of Covid-19 pandemic, the samples were not drawn from the ports. In the meantime, the material was shifted from ports to the production units to continue production. On the request of FAI, the DOF deferred the random sampling of Egyptian Rock Phosphate (ERP) many times for uninterrupted production of fertilizers. Department of Fertilizers vide letter dated 29th April, 2021, sought the comments of FAI for further extension for drawing the random samples. FAI reviewed the situation and suggested that in view of pandemic situation, the present arrangements of the testing of ERP and Technical Audit Inspection of SSP units may be continued. It was also mentioned that in any case, the quality of the finished product *i.e.* SSP has to be ensured as per the provisions of FCO, 1985. Further, DOF deferred the random sample testing of ERP by PDIL/FEDO up to 31st July, 2021. It was mentioned that the SSP units shall keep adequate minimum stock of imported ERP at the port or plant so that the sampling may be done at a later stage after easing of restriction on travel.

The guidelines for using un-notified grade of Rock Phosphate for manufacturing SSP of FCO standard from new sources were issued by the DOF on 26th July, 2021. The SSP manufacturing units had to get the prior permission from the DOF for purchase of the new

grade of Rock Phosphate and the quantity shall not exceed 500 tonne for trial purpose for the production of SSP. The SSP produced in the trial run shall not be eligible for subsidy.

Department of Fertilizers vide O.M. dated 24th December, 2021 notified the Morocco Rock Phosphate having 30% P₂O₅ content for using as primary rock for production of SSP under NBS policy.

Department of Fertilizers also granted permission to some of the SSP manufacturers to use Algerian Rock Phosphate (ARP) having 29% P₂O₅ provisionally for one year. A clarification was issued by the Department allowing such companies to import and use ARP for one year over and above the quantity permitted earlier. However, the clarification was withdrawn on 27th January, 2022 with immediate effect.

1.2.8 MOU Signed with Jordan

A high level delegation led by Hon'ble Minister of Chemicals & Fertilizers and Health & Family Welfare, Dr. Mansukh Mandaviya visited Jordan in May 2022 for enhanced cooperation in the fertilizer sector. Indian companies signed MoUs with Jordan Phosphate Mining Company for supply of 30 lakh tonne rock phosphate, 2.5 lakh tonne of DAP, 1 lakh tonne of phosphoric acid for the current year. India has also signed a long term (5 years) MOU with Jordan for annual supplies of 2.75 lakh tonne of MOP, which will uniformly increase every year upto 3.25 lakh tonne.

1.2.9 Multi-disciplinary Committee on Beneficiated Rock Phosphate

A Multi-Disciplinary Committee (MDC) was constituted on 21st August, 2019 by the DOF with the mandate to visit the existing private beneficiated rock phosphate (BRP) plants for conducting techno-commercial, environmental study, to analyse and give a report regarding feasibility of production of good quality BRP for manufacturing of SSP. The Committee submitted the report in November, 2020. The DOF notified the guidelines for BRP manufacturers on 10th November, 2021. Amongst other things, import of low grade Rock Phosphate (26% P₂O₅ or below) was not allowed for beneficiation.

1.3 Other Policy Related Issues

1.3.1 Freight for Primary and Secondary Road Transportation

The primary and secondary road freights for urea were revised by the DOF in 2018 for the year 2016-17 and the industry continued to get freight subsidy on the basis of last notified rates. Primary road freight for P&K fertilizers were paid on the basis of slab-wise (km) rates of railways (Rs./ tonne) effective from 1st April 2012. These rates have not been revised in spite of revision in rail freight thrice by the railways. Further, there is a provision of special compensation

of secondary movement of P&K fertilizers to difficult areas/regions notified in July 2012. FAI requested DOF to update all the freight rates as under-recovery of freight cost hurting the industry. The DOF vide letter dated 6th April, 2022 notified the primary and secondary freight rates for urea till 2020-21. However, the revision in primary road freight for P&K fertilizers remained pending.

1.3.2 Shortage of Jumbo Rakes

There were shortages of Jumbo rakes at the Gandhidham Subdivision of Western Railways during February, 2022. This resulted in constraints of movement of both domestic as well as imported fertilizers from the west coast *i.e.* Kandla, Mundra and Tuna ports. The fertilizer manufacturing units operate continuously and are having limited storage space. Ports also have limited storage capacity and material was often stored in open space which could affect the quality of fertilizers. In view of huge stocks of fertilizers piled up at the ports / plants, there was an urgent need to transport the fertilizers to ensure the timely availability to the farmers. FAI requested the Additional Member-Traffic, Railway Board to ensure availability of sufficient rakes at the ports and fertilizer plant located in Gujarat.

1.3.3 Demurrage and Wharfage Charges

In view of spurt in positive cases under 2nd wave of Covid-19 pandemic and subsequent partial / full lockdown by the Government, availability of labour hampered loading and unloading operations. FAI requested the Secretary (Fertilizers), to take up the matter with the Ministry of Railways to waive the charges of demurrage, wharfage, etc., at the rake points as was done in the 1st wave of Covid-19, till the situation normalized. Ministry of Railways vide letter dated 5th May, 2021 authorized General Managers of Zonal Railways to take decision on waiver of demurrage and wharfage charges, based on local conditions regarding lockdown, either full or partial, and the extent to which it affected detention of rakes or occupation of wharfs.

1.3.4 Sale of Subsidized Fertilizers to Customized/ Mixture Fertilizer Manufacturing Units

Department of Fertilizers notified the revised guidelines for subsidised fertilizer delivery mechanism for mixture/customized manufacturers and planters' units under DBT system on 9th November, 2021. As per the guidelines, mixture/customized manufacturers will be eligible for 25% of their total requirement authorized by the state government.

1.3.5 City Compost

Department of Fertilizers notified the policy on promotion of city compost with market development

assistance (MDA) of Rs.1500/- per tonne in 2016. As per the guidelines for payment of MDA, fertilizer companies submitted the claims for 'On Account' and also for 'Balance Claims' for 2016-17 and 2017-18. The Department made payment only for the 'On Account' bills. The reason for non-payment of 50% balance claims was due to pending quality certification by the state governments. The state governments did not draw the samples from the fields due to non-existence of facilities in the states for testing of city compost. The state governments certified the quality of city compost as 'sample drawn-NIL and quantity rejected-NIL'. FAI requested the DOF to facilitate the payment of balance MDA claims for sale of city compost for the period 2016-17 and 2017-18, but the same has not been settled. From 2018-19 onwards, 100% payment was linked to sale by the retailers through POS machines to the farmers in line with other P&K fertilizers.

The Expenditure Finance Committee Chaired by Finance Secretary & Secretary Expenditure in its meeting held on the 2nd August, 2021 reviewed continuation of on-going scheme of policy on promotion of city compost. The Committee recommended that as there are similar schemes in other departments with larger budget and better field presence, promotion of city compost scheme should be discontinued by September 2021. Accordingly, DOF de-notified the policy on promotion of city compost w.e.f. 30th September, 2021.

1.4 Budget Allocation and Payment Related Issues

1.4.1 FAI Pre-Budget Memorandum

FAI submitted fertilizer industry pre-budget memorandum for Union Budget 2022-23 containing industry suggestions regarding taxation issues facing the industry covering indirect & direct taxes and also budget allocation for fertilizer subsidy.

Representation to Hon'ble Finance Minister regarding various issues faced by the fertilizer sector under the

GST law was submitted for the consideration in GST Council, as GST is not a part of the Union Budget exercise. It was requested to allow refund of unutilized ITC in respect of both inputs and input services, reduce GST rate on micro-nutrients from 12% to 5%, exempting importers from payment of IGST under reverse charge basis on ocean freight service for CIF contracts and exempting transportation service of fertilizers by road and rail from GST. Similar letter was sent to DOF.

Fertilizer industry suggestions for Union Budget 2022-23 pertaining to Direct Taxes were submitted to the Ministry of Finance. Similar letter was sent to the Joint Secretary, DOF requesting for taking up the issues of fertilizer industry with the Finance Ministry. Issues mainly included continuation of weighted deduction of 200% under Section 35 (2AB) for R&D activities and 150% deduction under Section 35 (CCC) to encourage farmers' education and allowing 80% depreciation on energy saving devices. Suggestions like, taxing of foreign dividend received from joint ventures / subsidiaries by fertilizer cooperatives in India, abolition of surcharge on income tax for cooperatives, exemption from capital gains tax against transfer of capital assets to wholly own subsidiaries of cooperatives were also submitted.

FAI's suggestions on customs duty were submitted to the Department of Revenue. The representation *inter-alia* sought exemption from customs duty on fertilizer raw materials/intermediates like rock phosphate, sulphur, phosphoric acid, ammonia, sulphuric acid, etc. Similar letter was sent to the Joint Secretary, DOF, requesting for taking up these issues with the Ministry of Finance.

1.4.2 Budget Allocation for 2020-21, 2021-22 and 2022-23 (Budget Estimate)

The Table on budget allocation depicts subsidy outgo for 2020-21, Budget Estimate (BE), Revised Estimate

Budget Allocation for Fertilizer Subsidy (2020-21 to 2022-23)(Rs.in crore)				
Particulars	2020-21 (Actual)	BE 2021-22	RE 2021-22 (as per budget 2022-23)	BE 2022-23
Indigenous Urea	68807.41	43236.28	48612.00	46596.78
Imported Urea	25049.62	19550.00	36250.40	20590.00
DBT in Fertilizer Subsidy	9.96	11.40	27.92	15.54
Recovery	-3317.72	-4030.00	-8960.00	-3980.00
Net Subsidy on Urea	90549.27	58767.68	75930.32	63222.32
Indigenous P&K	22288.36	12460.00	39062.66	25200.00
Imported P&K	15015.37	8260.00	25087.34	16800.00
City Compost	68.74	42.00	42.00	-
Total P&K Fertilizers	37372.47	20762.00	64192.00	42000.00
Grand Total	127921.74	79529.68	140122.32	105222.32

Source: Budget documents 2022-23

BE= Budget estimate

RE= Revised estimate

(RE) for 2021-22 and BE for 2022-23.

1.4.3 Budget Allocation for 2021-22

Allocation in BE for 2021-22 was Rs.79,529.68 crore against the expenditure of Rs.1,27,921.74 crore during the previous year 2020-21, including additional allocation of Rs.65,000 crore. The allocation was significantly lower than the estimated requirement. It was highlighted that the need for higher allocation was for both urea as well as P&K fertilizers. Government made additional allocation of Rs.58,430 crore in the 2nd Supplementary Grants increasing allocation to Rs.1,37,960 crore. This allocation was further revised to Rs.1,40,122.32 crore in the RE at the time of presentation of Union Budget 2022-23.

1.4.4 Budget Allocation for 2022-23

The Budget Estimate for 2022-23 given in the Union Budget document is Rs.1,05,222.32 crore against the RE for 2021-22 of Rs.1,40,122.32 crore. This amount was again inadequate, in view of continuing steep rise in international prices of fertilizers and raw materials. However, the Government has again taken timely steps in assessing the situation and has announced additional provision of Rs.1,10,000 crore in May 2022. With this, the total provision for fertilizer subsidy for 2022-23 comes to Rs.2,15,222 crore. The Government has been successively providing additional allocations for last three years to protect the farmers' interest.

1.4.5 Payment Related Issues

Freight bills on P&K fertilizers were pending since 2020. FAI requested for expeditious processing and settlement of freight bills on both domestic and imported P&K fertilizers. It was underlined that delay in freight payment aggravates the financial position of P&K fertilizer suppliers which was already suffering due to sharp rise in international prices of fertilizers and raw materials. Subsequently, payments of freight were made upto October 2021.

In February, 2022, DOF was requested to facilitate raising of bills for P&K fertilizers for payment of revised rates of subsidy under NBS policy in iFMS to enable fertilizer units to raise bills of increased subsidy resulting from two successive revisions in rates of subsidy, 1st on 20th May 2021 and again on 13th October, 2021. The payment is under process.

1.5 Other Taxation Issues

1.5.1 Continuation of Customs Duty Exemption/Concession on Goods Imported for Fertilizer Projects under Renovation/Modernization Scheme and Spare Parts

As part of review exercise of existing tax concessions/exemption allowed to the fertilizer industry, Ministry of Finance raised some queries. In response, it was

suggested for continuation of customs duty exemption/concession on goods imported for fertilizer projects under renovation/modernization scheme and spare parts for maintenance of the same. The representation was supported with a note justifying the need for continuation of these duty concessions for facilitating renovation/modernisation of fertilizer units.

1.5.2 IGST on Ocean Freight on Reverse Charge Basis in CIF Import Contracts

The levy of IGST on reverse charge basis on Ocean freight on imports made on CIF contracts was resulting in double taxation on ocean freight. First, as part of CIF value of imports and again separately on Ocean freight portion (service of transportation) on reverse charge basis. This matter was dealt with earlier by the Hon'ble Gujarat High Court in the Petition of M/s Mohit Minerals Pvt. Ltd. However, the Centre filed an Appeal in the Hon'ble Supreme Court against the judgement of the Gujarat High Court. The Hon'ble Supreme Court agreed with the Judgement of the Gujarat High Court that a tax on supply of service, which has already been included by the legislation as a tax on the composite supply of goods, cannot be allowed. The Apex Court also observed that levy imposed on the 'service' aspect of the transaction is in violation of the principle of 'composite supply'. Since the Indian importer is liable to pay IGST on 'composite supply' comprising supply of goods and supply of services of transportation, insurance, etc. in a CIF contract, a separate levy on the Indian importer for the 'supply of service' by the shipping company would be in violation of the GST Law. This decision should provide much needed relief to the industry.

1.5.3 GST Council Recommendation for Amendment in Formula for Refund of Unutilised ITC on Account of Inverted Duty Structure under Rule 89(5)

Hitherto, like other industries, fertilizer industry also was not able to claim refund against unutilized input tax credit (ITC) against GST paid on input services, as the same was not allowed under the formula given under Rule 89(5) of CGST Act. GST on input services constitute a significant portion of total GST on inputs and services paid by the fertilizer industry. A large portion of GST on input services remains unutilized due to inverted duty structure in fertilizer sector. Refund against unutilized ITC on input services was not allowed. A number of industries, including fertilizer industry and FAI had represented on the issue with the Finance Ministry and the GST Council for suitable amendment in the formula for refund. Subsequently, GST authorities have modified the formula for refund to allow refund of unutilized ITC in the same proportion in which the ITC has been

claimed against inputs and input services.

2.0 FERTILIZER PRODUCTION

2.1 General

The upsurge in international prices of fertilizer raw material/intermediates and finished fertilizers as well as new export restrictions by China led to marginal increase in the fertilizer production of just 0.6% in the year 2021-22. Production in terms of nutrients went up slightly from 18.482 million tonnes (million MT) in 2020-21 to 18.582 million MT in 2021-22, a growth of only 0.5%. Production of nitrogen (N) increased by 0.9% to 13.870 million MT. However, production of phosphate (P_2O_5) declined by 0.5% to 4.712 million MT during 2021-22 over 2020-21. In terms of products, production of urea increased from 24.603 million MT in 2020-21 to 25.076 million MT in 2021-22. The production of DAP grew by 12% from 3.774 million MT to 4.222 million MT during the period. Similarly, production of SSP also increased by 8.9% from 4.916 million MT to 5.351 million MT during the same period. However, production of complex fertilizers nosedived

from 9.325 million MT in 2020-21 to 8.307 million MT in 2021-22.

A few urea units suffered loss of production due to equipment problems, prolonged maintenance shutdowns, unavailability of raw material and constraint in availability of working capital. Production of complex fertilizers suffered due to lack of availability of sufficient quantity of imported raw materials and high import cost.

2.2 Installed Capacity

Data on number of plants, installed capacity and production in terms of nutrients are given in **Table 1**. Similar data for SSP as products are given in **Table 2**.

All India production capacity of nitrogen increased by 608 thousand MT from a total of 14.913 million MT during 2020-21 to 15.521 million MT at the end of the year 2021-22. The increase in capacity was mainly due to revival of one ammonia-urea plant at Panagarh, West Bengal and commissioning of one DAP/NP/NPK plant at Sagar, Madhya Pradesh during September 2021.

Table 1. Zone-wise capacity, production and capacity utilization of nitrogenous and phosphatic plants in 2020-21 and 2021-22 (April-March)																
(Capacity and production in '000 tonnes)																
Zone	Nitrogen (N)								Phosphate (P_2O_5)							
	2020-21				2021-22(P)				2020-21				2021-22(P)			
	No. of plants	Capacity	Production	Capacity utilization (%)	No. of plants	Capacity	Production	Capacity utilization (%)	No. of plants	Capacity	Production	Capacity utilization (%)	No. of plants	Capacity	Production	Capacity utilization (%)
East	9	897.7	710.9	79.2	10	1482.6	1028.1	83.0	11	1623.9	1419.0	88.0	11	1623.9	1456.6	89.7
North	11	4159.5	4486.7	107.9	11	4159.5	4288.9	103.1	7	127.4	58.6	55.1	7	129.0	62.7	58.1
South	14	3188.2	1935.9	73.0	14	3189.2	2190.2	68.7	25	2063.1	1157.7	56.3	25	2063.1	1150.6	56.0
West	21	6668.0	6611.0	99.1	22	6689.6	6363.0	95.2	76	3468.0	2101.9	63.0	77	3555.3	2041.8	59.8
All India	55	14913.4	13744.5	95.6	57	15520.9	13870.2	90.8	119	7282.4	4737.2	66.6	120	7371.3	4711.7	65.4
		(14377.9)				(15268.5)				(7110.0)				(7202.8)		

Note : Figures in parentheses are operating capacities. Capacity utilization is based on operating capacity. (P) = Provisional.

Table 2. Zone-wise capacity, production and capacity utilization of SSP plants in 2020-21 and 2021-22 (April-March)						
('000 tonnes product)						
Zone	2020-21			2021-22 (P)		
	Capacity	Production	Capacity utilization (%)	Capacity	Production	Capacity utilization (%)
East	967.8	522.3	58.2	967.8	530.7	58.4
North	796.2	366.1	55.1	806.5	391.7	58.1
South	1,346.9	330.4	25.4	1,346.9	349.6	25.9
West	8,685.5	3,697.3	47.1	8,885.5	4,079.2	50.0
All India	11,796.4	4,916.1	45.9	12,006.7	5,351.2	48.2
	(10,718.9)			(11,097.7)		

(P) = Provisional.

Note : 1. Figures in parentheses are operating capacities. Capacity utilization is based on operating capacity.

2. Totals may not exactly tally due to rounding of figures.

The production capacity of P_2O_5 also increased nominally by 89 thousand MT from a total of 7.282 million MT during 2020-21 to 7.371 million MT during 2021-22. The increase in capacity was mainly due to commissioning of one DAP/NP/NPK plant at Sagar, Madhya Pradesh and enhancement in capacity of few SSP plants during the year. After excluding capacity of the idle/closed SSP plants, total operating (effective) capacity of P_2O_5 was arrived at 7.203 million MT as on 31st March 2022 compared to 7.110 million MT a year before.

2.3 Capacity Utilization

Capacity utilization of nitrogen had fallen from 95.6% in 2020-21 to 90.8% in 2021-22 mainly due to higher increase in production capacity compared to increase in production. Capacity utilization of phosphate declined from 66.6% to 65.4% during the same period primarily due to steep decline in production of complex fertilizers despite increase in DAP and SSP production.

Capacity utilization of SSP plants improved from 45.9% in 2020-21 to 48.2% in 2021-22 which is reflected in higher production of SSP during 2021-22.

Capacity utilization of nitrogen remained the highest in north zone. But it declined from 107.9% to 103.1% during the period under review. Capacity utilization of nitrogen in west zone and south zone fell from 99.1% to 95.2% and from 73.0% to 68.7%, respectively, during the same period. East zone plants for nitrogen production witnessed an increase in capacity utilization from 79.2% to 83.0% during the period. Capacity utilization of phosphate plants in east zone improved for the fourth consecutive year. It increased from 88.0% in 2020-21 to 89.7% in 2021-22. Phosphate plants in north zone also improved from 55.1% to

58.1% during the period. South zone and West zone registered a negative growth in capacity utilization, falling from 56.3% to 56.0% and from 63.0% to 59.8%, respectively, during the period under review. However, with the exception of east zone, the three other zones continued to operate at low capacity utilization.

Table 3 shows the number of nitrogen and phosphate plants achieving various levels of capacity utilization. Number of nitrogen plants operating at more than 100% capacity utilization declined from 22 in 2020-21 to 18 in 2021-22. Fourteen nitrogen plants achieved capacity utilization 90%, an increase from 9 plants in 2020-21. In the category of phosphate number of plants achieving capacity utilization higher than 100% declined to 5 in 2021-22 from 6 in the previous year. Number of plants with capacity utilization more than 90% also declined from 5 to 4 during the same period. Most plants in this category continued to operate at less than 60% capacity utilization.

2.4 Share of Products

Nitrogen production continues to be dominated by urea with a share of 83.2% in total N production, higher than the corresponding share of 82.3% in 2020-21 (**Table 4**). Share of complex fertilizers including DAP in N production correspondingly declined from 16.4% in 2020-21 to 15.7% in 2021-22. While share of NP/NPKs in nitrogen production declined, share of DAP fertilizers increased. This is consistent with production trends where production of DAP increased and that of NP/NPK declined sharply in 2021-22 compared to previous year. DAP continued to remain dominant product in phosphate segment accounting for 41.2% of total production and all other NP/NPK products contributed 40.6% to phosphate

Capacity utilization range (%)	N		P_2O_5	
	2020-21	2021-22	2020-21 [@]	2021-22 [@]
Above 100	22	18	6 (1)	5 (1)
> 90 to 100	9	14	5 (2)	4 (1)
> 80 to 90	8	5	13 (11)	8 (6)
> 70 to 80	1	4	7 (4)	10 (8)
> 60 to 70	5	4	8 (7)	12 (10)
> 50 to 60	-	1	9 (8)	15 (14)
> 40 to 50	1	3	14 (13)	18 (16)
Upto 40	8	5	45 (42)	38 (35)
Nil/ Not Available	1	3	12 (12)	10 (9)
Total number of plants	55	57	119 (100)	120 (100)

() = Figures in parentheses are for SSP plants.
 @ = Include 19 DAP/NP/NPK plants in 2020-21 and 20 in 2021-22.
 Note: Figures for 2021-22 are provisional.

Fertilizer	% share of total nutrient			
	2020-21		2021-22 (P)	
	N	P_2O_5	N	P_2O_5
I. Straight nitrogenous	83.6	-	84.3	-
1. Urea	82.3	-	83.2	-
2. Others	1.3	-	1.1	-
II. Straight phosphatic	-	16.6	-	18.2
1. Single superphosphate	-	-16.6	-	18.2
2. Others	-	-	-	-
III. Complex fertilizers	16.4	83.4	15.7	81.8
1. DAP	4.9	36.6	5.5	41.2
2. NP/NPKs	11.5	46.8	10.2	40.6
Grand total (I+II+III)	100.0	100.0	100.0	100.0

(P) = Provisional.

Feedstock/ Intermediate	(Per cent)					
	Capacity		Production		Capacity utilization	
	2020-21	2021-22 (P)	2020-21	2021-22 (P)	2020-21	2021-22 (P)
Gas	81.5	84.7	83.0	86.2	98.2	92.7
Naphtha	2.7	-	2.8	-	95.8	-
External ammonia	15.5	15.1	14.0	13.6	82.9	81.0
Others*	0.3	0.3	0.2	0.2	58.0	53.8
Total	100.0	100.0	100.0	100.0	96.0	95.9

* = Others include COG and other sources. (P) = Provisional

production in 2021-22. The relative contribution of DAP and NP/NPK fertilizers to phosphate production witnessed trend similar to nitrogen where share of NP/NPK declined from 46.8% in 2020-21 to 40.6% in 2021-22 as opposed to DAP. The share of later increased sharply from 36.6% to 41.2% during the same period. SSP increased its share in phosphate production from 16.6% to 18.2% during the period.

2.5 Share of Feedstock/Raw Materials

Table 5 shows production of nitrogen based on different sources of inputs. Excluding external ammonia (which is mainly imported), natural gas accounted for nearly 100% production of N in the country in 2021-22. Even the last naphtha based plant switched to natural gas during this period. External ammonia accounted for 13.6% of N production, all of which was used for production of complex fertilizers.

Production of phosphatic fertilizers utilized rock phosphate or intermediate phosphoric acid. Nearly, 90% rock phosphate was imported and accounted for nearly 50% phosphate production in the country. Imported phosphoric acid and domestic rock phosphate contributed to the balance production of the nutrient phosphate.

2.6 Sector-wise Performance

Fertilizer production plants are in all major sectors of

economy viz., public, private and cooperative sectors. Table 6 gives sector wise performance and their share of contribution to fertilizer production in the country. Almost half (49.3%) of N production capacity is in private sector, followed by public (27.2%) and cooperatives (23.4%) in 2021-22. The share of private sector in capacity increased from the previous year, while that of public sector and cooperatives decreased. In production capacity of phosphate, dominance of private sector is more pronounced with share of 71.5%. Cooperative sector and public sector accounted for 23.2% and 5.2% share in production capacity respectively. Capacity utilization of N was the highest at 102.7% in cooperative sector during 2021-22. This is a decline from 106.8% in the previous year. The capacity utilization of both public and private sector plants deteriorated at 80.9% and 90.7%, respectively. Phosphate plants showed decline in capacity utilization in 2021-22 compared to 2020-21, except for cooperatives sector. Phosphate plants continued to operate at low capacity utilization in public sector (66.0%) and private sector (54.5%) and only cooperative sector operated at reasonable level of 97.8% capacity utilization during 2021-22.

Private sector contributed 48.4% to production of N and 59.0% to the production of P_2O_5 . Cooperative sector accounted for 26.9% of N production and 35.5% of P_2O_5 production. Public sector contributed 24.7%

Sector	(Per cent)											
	Share of capacity				Share of production				Capacity utilization			
	2020-21		2021-22 (P)		2020-21		2021-22 (P)		2020-21		2021-22 (P)	
	N	P_2O_5	N	P_2O_5	N	P_2O_5	N	P_2O_5	N	P_2O_5	N	P_2O_5
Public	28.3	5.3	27.2	5.2	24.7	5.5	24.7	5.4	92.1	67.8	80.9	66.0
Cooperative	24.4	23.5	23.4	23.2	28.3	31.8	26.9	35.5	106.8	87.9	102.7	97.8
Private	47.3	71.2	49.3	71.5	47.0	62.7	48.4	59.0	91.6	59.3	90.7	54.5
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	95.6	66.6	90.8	65.4

(P) = Provisional.

and 5.4% to the production of N and P₂O₅, respectively, which is proportionate to its share in capacity of these two nutrients.

2.7 Reasons for Loss of Production

Production of major fertilizer products fell short of targets for the year 2021-22. Production of urea was lower by almost 3 million tonne at 25.08 million MT compared to target of 28.00 million MT. Among the existing urea operating plants, one plant in Assam was shut down during the entire year due to equipment failure in ammonia synthesis section. Another plant in Andhra Pradesh was partially under shut down due to financial stress. A few other urea plants suffered equipment problems. It was expected that there would be higher urea production due to additional contribution from two new urea plants but few old plants could not operate well compared to previous year. Some of the DAP/NP/NPK fertilizer plants suffered due to raw material limitations. There had also been considerable increase in prices of raw materials/intermediates during the year. In spite of several challenges, industry had maintained the production level and imports during the year. Production could have been higher but for these bottlenecks.

2.8 Supply of Natural Gas

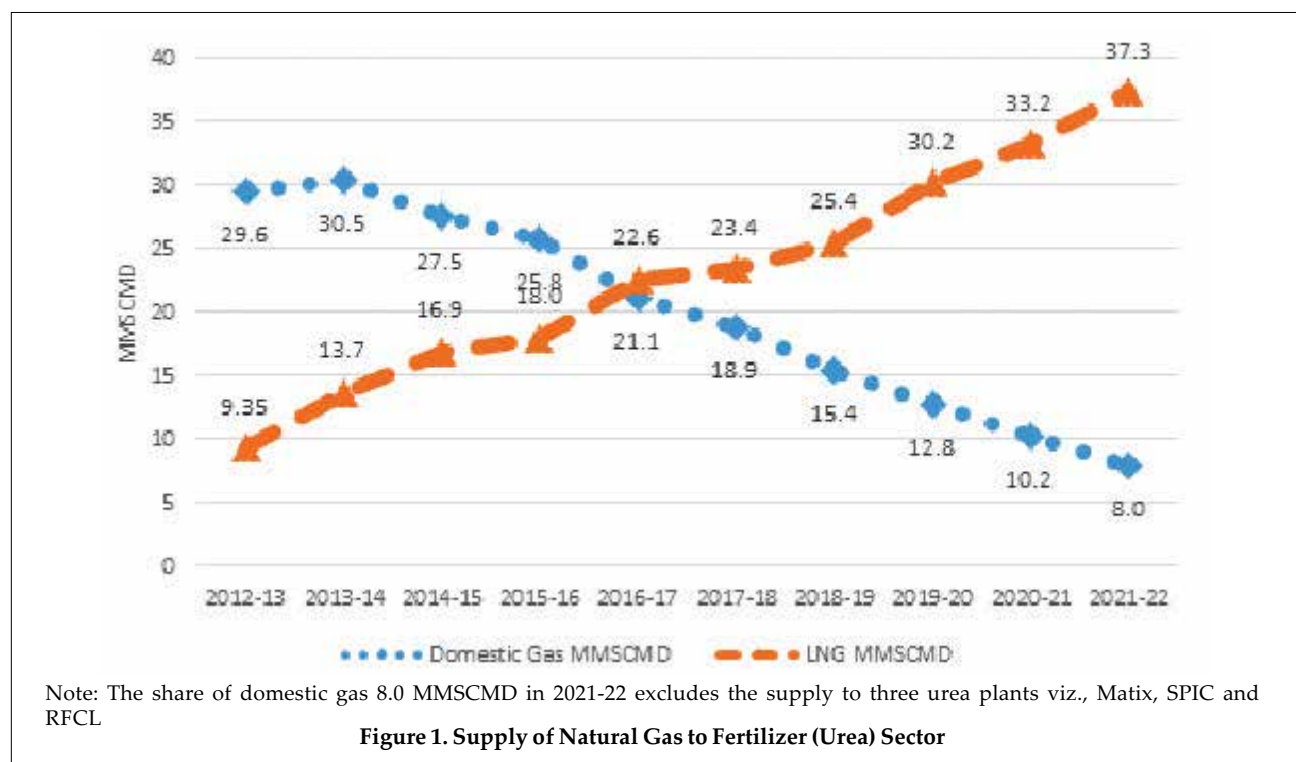
Natural gas is essential input both as feed and fuel for production of nitrogen containing fertilizers including straight fertilizers like urea and ammonium sulphate

and various grades of complex fertilizers. Earlier priority of fertilizer sector in allocation of domestic natural gas has dispensed with. The natural gas from new findings is auctioned and given to the highest bidder. The share of domestic gas in total gas utilization in fertilizer sector has dwindled gradually over the years. Domestic gas share declined from 23.5% in 2020-21 to 17.7% in 2021-22 (excluding the supply to three plants viz., Matix, RFCL and SPIC). In absolute terms, average supply of domestic gas declined from 10.2 MMSCMD in 2020-21 to 8.0 MMSCMD in 2021-22. **Figure 1** shows the trend in consumption of domestic gas in fertilizer sector.

Government has established a pool account for supply of natural gas to urea sector. The weighted average cost of gas in the pool every month is taken as input for calculation of cost of production of urea units and hence subsidy for each unit. The cost of pooled gas has been going up due to increase in share of imported LNG which is usually more expensive than domestic gas. GAIL as pool operator should be mandated to maximize the supply of domestic gas to fertilizer sector. This will help to reduce the cost of domestic urea and hence the out go from public exchequer on account of subsidy.

2.9 Efforts for Improving Efficiency of Fertilizer Plants

Fertilizer production is a continuous operation. Plant management’s endeavor always remains to improve



reliability so that plant operates without any interruption. Therefore, plants carry out maintenance activities which include routine maintenance on daily/monthly/yearly basis and replacement of old and inefficient equipment with more efficient one and modification of other equipments periodically. During the year 2021-22, many plants carried out measures to improve their energy efficiency and reliability. Some of the illustrative important measures implemented by a few plants are given here.

KFL, Shahjahanpur implemented energy saving schemes which included replacement of syngas turbine and S-50 converter in ammonia plant. For reliability improvement in ammonia plants, replacement of refractory in secondary reformer, replacement of inter-stage and recycle stage coolers in syn gas compressor were undertaken. In urea plants, KFL installed 5 additional trays and replaced 10 nos conventional trays with energy efficient super cups design trays in the urea reactor. Kribhco, Hazira also implemented a few energy saving schemes in ammonia I plant and liner replacement in two of the urea reactors. Indorama India Pvt. Ltd (IIPL) (formerly Indo Gulf Fertilisers), Jagdishpur replaced one converter shell and RG boiler. NFL plants at Nangal and Bathinda commissioned gas turbo-generators and heat recovery steam generators during 2021-22 which resulted in energy savings of around 0.5 Gcal/MT of urea in each plant. NFL, Vijaipur plants installed vapour absorption machine for suction chilling in process air compressor, inter-stage chilling in ammonia synthesis compressor, and 3 numbers of gas turbines for suction air cooling.

IFFCO, Kalol replaced its old steam turbine of process air compressor and installed additional sulphur absorbers at downstream of existing hydro desulphurization system and MP steam ejectors for surface condensers in ammonia plant. In urea plant, it installed a pre-flash vessel in hydrolyzer section. IFFCO, Phulpur carried out replacement of LT steam super heater coil and installed MP steam ejector vacuum system for surface condenser in ammonia plant I and replaced S-200 ammonia converter basket in ammonia II plant. In urea I plant, IFFCO Pulphur installed a new vibrating screen along with dissolving system in product handling plant to improve product quality. To improve the reliability of equipment for long service, shortening of bimetallic urea stripper was carried in urea II plant. IFFCO Aonla I replaced ammonia condenser of LP recovery unit and old membranes in PGR unit while S-200 ammonia

converter basket was replaced in Ammonia-II.

Other ammonia-urea plants also carried modifications to improve the reliability of their plants.

Phosphatic fertilizer plants too implemented measures to improve the reliability of their plants. At GSFC Vadodara Unit, structure of phosphoric acid and APS plants were refurbished to enhance the life of the plant. The work involved refurbishment and replacement of support structure of building that house the equipment, change of MOC of one of the digestors, upgradation of electrical systems and introduction of DCS for better process control. PPL, Paradeep undertook revamp of two out of four complex fertilizer trains during 2021-22. Greenstar Fertilizers Limited plan to increase the phosphoric acid capacity by adding one more belt filter and a large ammonia storage tank was under commissioning to increase ammonia storage capacity. IFFCO, Kandla installed new granulator pipe reactors in two of its trains to improve plant performance. Other measures included replacement of product cooler & polishing screen and upgradation of DCS in some of the trains. IFFCO, Paradeep constructed a riverine jetty for transfer of phosphogypsum through river and sea to port. To reduce solid content in weak phosphoric acid, a new clarifier cum storage tank of 10000 m³ capacity was commissioned. To achieve production target, a new sulphuric acid storage tank was commissioned for importing sulphuric acid during shutdown of captive sulphuric acid plant. To utilize waste steam from sulphuric acid plant, a steam air heater for drying fertilizer products was commissioned in one of the streams. To improve reliability of the plant, sulphuric acid intermediate absorption tower and drying tower acid circuit pipes were replaced with better material and PU lining of chain mill hoppers was carried out.

3.0 FERTILIZER IMPORT

3.1 Imports

Indigenous production of fertilizers has been increasing over the years. However, it is insufficient to fulfil the entire demand for fertilizers. About 30% of the total requirement of fertilizer materials is fulfilled through imports. During 2021-22, gap of nitrogen (N) was 5.57 million MT and phosphate (P₂O₅) 3.12 million MT (**Table 7a**). Entire requirement of potash (K₂O) is fulfilled through imports as there is no known commercial source of potash in the country. During 2021-22, import of N, P₂O₅ and K₂O was 5.39, 2.78 and 1.62 million MT, respectively (**Table 7b**).

In terms of fertilizer products, except DAP, import of

Year	Consumption					Production			Gap		
	N	P ₂ O ₅	N+P ₂ O ₅	K ₂ O	N+P ₂ O ₅ +K ₂ O	N	P ₂ O ₅	N+P ₂ O ₅	N	P ₂ O ₅	N+P ₂ O ₅
2010-11	16,558.2	8,049.7	24,607.9	3,514.3	28,122.2	12,178.6	4,371.2	16,549.8	4,379.6	3,678.5	8,058.1
2011-12	17,300.3	7,914.3	25,214.5	2,575.5	27,790.0	12,288.3	4,363.7	16,652.0	5,012.0	3,550.6	8,562.5
2012-13	16,820.9	6,653.4	23,474.4	2,061.8	25,536.2	12,237.3	3,826.0	16,063.3	4,583.6	2,827.4	7,411.1
2013-14	16,750.1	5,633.5	22,383.6	2,098.9	24,482.4	12,408.6	3,972.0	16,380.6	4,341.5	1,661.5	6,003.0
2014-15	16,949.6	6,098.9	23,048.5	2,532.9	25,581.4	12,433.7	4,118.9	16,552.6	4,515.9	1,980.0	6,495.9
2015-16	17,372.3	6,978.8	24,351.1	2,401.5	26,752.6	13,475.9	4,425.8	17,901.7	3,896.4	2,553.0	6,449.4
2016-17	16,735.9	6,705.5	23,441.4	2,508.5	25,949.9	13,376.8	4,552.7	17,929.5	3,359.1	2,152.8	5,511.9
2017-18	16,959.3	6,854.4	23,813.7	2,779.7	26,593.4	13,422.6	4,724.4	18,147.0	3,536.7	2,130.0	5,666.7
2018-19	17,637.8	6,910.2	24,547.9	2,680.3	27,228.2	13,336.8	4,590.5	17,927.3	4,301.0	2,319.7	6,620.6
2019-20	19,101.3	7,662.0	26,763.4	2,607.0	29,370.4	13,722.2	4,790.7	18,512.9	5,379.1	2,871.3	8,250.5
2020-21	20,404.0	8,977.9	29,381.9	3,153.7	32,535.6	13,744.5	4,737.2	18,481.7	6,659.5	4,240.7	10,900.2
2021-22 (P)	19,438.3	7,828.5	27,266.8	2,529.5	29,796.3	13,870.2	4,711.7	18,581.9	5,568.1	3,116.8	8,684.9

(P) = Provisional. Note: 1. Gap does not take into account stocks available at the beginning of the year.
2. Entire requirement of K₂O is met through imports.

Year	('000 tonnes)				
	N	P ₂ O ₅	N+P ₂ O ₅	K ₂ O	N+P ₂ O ₅ +K ₂ O
2010-11	4,569.6	3,738.7	8,308.3	3,899.5	12,207.8
2011-12	5,577.6	4,263.6	9,841.2	2,557.8	12,399.0
2012-13	4,801.0	2,797.2	7,598.2	1,573.7	9,171.9
2013-14	3,920.3	1,588.2	5,508.5	1,954.4	7,462.9
2014-15	4,813.0	1,902.9	6,715.9	2,588.0	9,303.9
2015-16	5,081.3	2,899.5	7,980.8	2,075.9	10,056.7
2016-17	3,411.7	2,129.0	5,540.7	2,341.1	7,881.8
2017-18	3,618.4	2,044.6	5,663.0	2,925.2	8,588.2
2018-19	4,716.7	3,167.2	7,883.9	2,648.4	10,532.3
2019-20	5,209.0	2,413.2	7,622.2	2,309.4	9,931.6
2020-21	5,662.3	2,543.5	8,205.8	2,690.7	10,896.5
2021-22 (P)	5,385.7	2,781.6	8,167.3	1,621.3	9,788.6

(P) = Provisional.

all major fertilizers declined during 2021-22 over 2020-21. Import of urea reduced by 7.1%, NP/NPK complex fertilizers by 15.8% and MOP by 41.8% during 2021-22 over 2020-21. However, import of DAP increased by 11.9% during the period. The quantum imports of urea, DAP, NP/NPKs and MOP was of the order of 9.14, 5.46, 1.17 and 2.46 million MT, respectively, during 2021-22. **Table 8** shows production, consumption and import of urea, DAP and MOP during 2010-11 to 2021-22.

4.0 INVENTORY OF FERTILIZERS

The year 2021-22 began with reasonable inventory of fertilizers which facilitated positioning of fertilizers for sowing operations before the onset of cropping

season. Opening stock of urea at various points excluding stock at the dealers' point was about 1.1 million MT at the beginning of the year. Similarly, inventory of DAP and NP/NPKs together was about 2.0 million MT, SSP 0.47 million MT and MOP 0.76 million MT. Availability of fertilizers from opening stock, domestic production and imports was adequate to take care of the demand for 2021-22.

5.0 WEATHER

The monsoon is considered the lifeline of India's agri-based economy. Among the four monsoon seasons, *viz.*, Pre-monsoon, Southwest monsoon, Post-monsoon and winter or North-East monsoon; Southwest monsoon is the main rainy season in India. About 75% of the total rains are received during Southwest monsoon and 13% during post-monsoon seasons. Remaining quantities of rainfall are received during pre-monsoon and winter monsoon period. Rainfall and its distribution over time and space is the basic factor which influences fertilizer demand.

5.1 Southwest monsoon

Southwest monsoon during the past three consecutive years has been very good. In 2021, southwest monsoon arrived over Kerala coast on 3rd June, 2021 after a delay of two days. Overall rainfall during southwest monsoon was normal at 99% of long period average (LPA). Actual rainfall was 874.6 mm as against normal of 880.6 mm. There had been inter-month variations in the distribution of rainfall. Rainfall during June was 10% above LPA. However, it was 7% and 24% below LPA during July and August 2021, respectively. The most active monsoon month during the year was

Year	Urea			DAP			MOP	
	Consumption	Production	Import	Consumption	Production	Import	Consumption*	Import
2010-11	28,112.5	21,872.5	6,610.0	10,869.9	3,545.6	7,411.0	3,931.6	6,357.0
2011-12	29,565.3	21,992.3	7,834.0	10,191.2	3,951.3	6,905.2	3,028.9	3,984.6
2012-13	30,002.2	22,586.6	8,044.0	9,154.1	3,646.8	5,702.3	2,211.0	2,496.1
2013-14	30,600.5	22,718.7	7,088.0	7,357.4	3,628.2	3,261.1	2,280.4	3,180.0
2014-15	30,610.0	22,592.9	8,749.0	7,625.6	3,445.4	3,853.0	2,853.4	4,197.0
2015-16	30,634.8	24,461.3	8,474.0	9,107.2	3,821.8	6,008.0	2,466.9	3,243.0
2016-17	29,613.6	24,200.8	5,481.0	8,963.5	4,333.4	4,385.0	2,863.2	3,736.0
2017-18	29,894.4	24,026.0	5,975.0	9,294.1	4,654.0	4,217.0	3,158.2	4,736.0
2018-19	31,418.1	23,899.2	7,481.0	9,211.1	3,898.6	6,602.0	2,956.6	4,214.0
2019-20	33,695.4	24,455.2	9,123.0	10,099.8	4,549.5	4,870.0	2,787.5	3,670.0
2020-21	35,042.5	24,603.1	9,829.0	11,911.5	3,773.8	4,882.0	3,424.9	4,227.0
2021-22 (P)	34,180.1	25,075.7	9,135.0	9,272.0	4,221.9	5,462.0	2,456.5	2,460.0

(P) = Provisional * = for direct application.
 Note: In the absence of productwise consumption data, DBT sale figures assumed as consumption for 2021-22.

September, when the rainfall was 34% above LPA.

Out of 36 meteorological sub-divisions, 30 sub-divisions received normal to excess rains and remaining 6 sub-divisions received deficient rains during the period (Table 9). Out of 694 reported districts, 77% districts received normal to excess rains during the period.

Almost timely onset, delayed withdrawal and uneven distribution over the four-month season across different regions were highlights of monsoon 2021. Due to long break in monsoon rains, *kharif* sowing was delayed. There was resumption of rainfall activities in middle of July 2021. But the monsoon rains witnessed a second major break in the first week of August. Heavy rains in September damaged some standing crops at many places of Telangana, Maharashtra, Gujarat, Madhya Pradesh and Chhattisgarh. Southwest monsoon withdrew from the entire country on 25th October, 2021.

Water storage position in major reservoirs was

comfortable in 2021. Total live storage capacity in 130 reservoirs in the country was 171.96 billion cubic meter (BCM). Live storage available in these reservoirs was 138.33 BCM as on 30th September, 2021 as against 150.19 BCM on the same date in the previous year. Live storage during the period was 92% of the last year and 104% of the normal storage.

5.2 Post-monsoon

The months from October to December come under the post-monsoon season. During these months, there is a different monsoon cycle which brings dry and cool air masses. Post-monsoon season is the major period of rainfall activity over south peninsula, particularly in the eastern half comprising of the meteorological sub-divisions of Coastal Andhra Pradesh, Rayalaseema, Tamil Nadu and Puducherry. For Tamil Nadu, post-monsoon is the main rainy season accounting for about 48% of the annual rainfall. Coastal districts of Tamil Nadu get nearly 60% and the interior districts get about 40-50% of the annual rainfall during the season.

Item	2013	2014	2015	2016	2017	2018	2019	2020	2021
Excess/Normal	30	25	20	27	30	24	31	31	30
Deficient/Scanty	6	11	16	9	6	12	5	5	6
Total	36	36	36	36	36	36	36	36	36
% of districts with normal to excess rains	72	55	51	68	66	62	77	75	77
% of LPA rainfall	106	88	86	97	95	91	110	109	99
Excess = +20% or more	Normal = +19% to -19%		Scanty = -60% or less		Deficient = -20% to -59%				

Table 10. No. of sub-divisions received excess/normal rainfall during four monsoon seasons from 2013-14 to 2021-22 (No.)

Monsoon - period	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22
March-May	16	27	34	24	18	19	13	28	32
June-September	30	25	20	27	30	24	31	31	30
October-December	22	12	10	10	19	5	32	20	31
January-February	21	18	6	10	3	16	18	14	28

During post-monsoon 2021, rainfall was exceedingly good. It was 44% higher than the LPA for the country as a whole. Out of 36 meteorological sub-divisions, 31 received normal to excess rains during the period. Remaining 5 sub-divisions received deficient rainfall during post-monsoon season. Performance of the four monsoon seasons is shown in **Table 10**.

6.0 FERTILIZER CONSUMPTION

6.1 All-India Consumption

Growth in 2021-22

The consumption figures for 2021-22 are yet to be finalized by the Government. Therefore, DBT sale figures of fertilizers are assumed as consumption for 2021-22. Based on the sale figures, consumption of fertilizer nutrients for 2021-22 declined over 2020-21. It is well known that there was a massive increase in consumption of fertilizer nutrients during 2020-21 over 2019-20. Although, consumption of fertilizer nutrients during 2021-22 declined but the average out figures of consumption of fertilizer nutrients for 2020-21 and 2021-22 showed a positive growth over 2019-20. Consumption of fertilizers nutrients (N+P₂O₅+K₂O) estimated at 29.80 million MT during 2021-22, witnessed a decline of 8.4% over 2020-21.

The consumption of N, P₂O₅ and K₂O at 19.44 million MT, 7.83 million MT and 2.53 million MT during 2021-22 showed decline of 4.7%, 12.8% and 19.8%, respectively, over 2020-21.

In terms of product, All-India estimated consumption of urea at 34.18 million MT, DAP at 9.27 million MT, NP/NPK complex fertilizers at 11.48 million MT and MOP at 2.46 million MT during 2021-22 registered decline of 2.5%, 22.2%, 2.8% and 28.3%, respectively, over 2020-21. However, consumption of SSP at 5.68 million MT recorded a sharp increase of 26.6% during the period. Total consumption of all fertilizer products at 63.94 million MT during 2021-22 showed a decline of 5.4% over 2020-21.

Season-wise Performance

Kharif 2021

Despite timely onset of monsoon, uneven distribution

and long break of rainfall particularly during July and August across different regions had adversely affected fertilizer use during the *kharif* season. Consumption of total fertilizer nutrients during *kharif 2021* witnessed a negative growth of 9.4% over *kharif 2020*. Consumption of all the three nutrients registered negative growth during the season. Consumption of N, P₂O₅ and K₂O declined by 8.2%, 13.3% and 6.5%, respectively, during *kharif 2021* over *kharif 2020*. Consumption of N, P₂O₅ and K₂O was in order of 9.43, 3.72 and 1.40 million MT, respectively, during *kharif 2021*.

Rabi 2021-22

Like *kharif 2021*, consumption of total fertilizer nutrients during *rabi 2021-22* also witnessed a negative growth of 7.5% over *rabi 2020-21*. Consumption of all the three nutrients registered negative growth during the season. Consumption of N, P₂O₅ and K₂O declined by 1.2%, 12.4% and 31.7%, respectively, during *rabi 2021-22* over *rabi 2020-21*. Consumption of N, P₂O₅ and K₂O was in order of 10.00, 4.11 and 1.13 million MT, respectively, during *rabi 2021-22*.

NPK Use Ratio and Per Hectare Consumption

NPK use ratio widened during 2021-22 due to proportionately higher decline in consumption of K₂O compared to N and P₂O₅. All-India NPK use ratio widened from 6.5:2.8:1 during 2020-21 to 7.7:3.1:1 during 2021-22.

Per hectare use of fertilizer nutrients declined significantly due to sharp decline in total consumption of fertilizer nutrients. Per hectare use of total nutrients (N+P₂O₅+K₂O) reduced from 160.1 kg in 2020-21 to 146.7 kg in 2021-22.

6.2 Zone-wise Comments

Consumption of total fertilizer nutrients declined during 2021-22 in all zones. Decline in consumption in east, north, south and west zones was of the order of 11.3%, 6.1%, 7.6% and 9.7%, respectively, during 2021-22 over 2020-21 (**Table 11**).

Per hectare consumption of fertilizer nutrients (N+P₂O

Table 11. Season-wise consumption of N, P₂O₅ & K₂O from 2019-20 to 2021-22 and

S. No.	Zone/State	Nutrient	Consumption ('000 tonnes)								
			2019-20			2020 -21			2021-22 (P)		
			Kharif	Rabi	Total	Kharif	Rabi	Total	Kharif	Rabi	Total
I.	EAST	N	1,184.80	1,528.26	2,713.06	1,384.35	1,387.94	2,772.29	1,229.72	1,420.47	2,650.19
		P ₂ O ₅	373.94	766.00	1,139.94	533.74	743.56	1,277.30	459.23	619.30	1,078.53
		K ₂ O	204.32	438.50	642.82	273.01	457.32	730.33	229.82	281.88	511.70
		Total	1,763.06	2,732.76	4,495.82	2,191.10	2,588.82	4,779.92	1,918.77	2,321.65	4,240.42
1	Arunachal Pradesh	N	-	-	-	-	-	-	-	-	-
		P ₂ O ₅	-	-	-	-	-	-	-	-	-
		K ₂ O	-	-	-	-	-	-	-	-	-
		Total	-	-	-	-	-	-	-	-	-
2	Assam	N	92.90	88.85	181.75	90.54	85.09	175.63	88.50	89.96	178.46
		P ₂ O ₅	19.83	30.30	50.13	24.37	30.39	54.76	22.74	25.51	48.24
		K ₂ O	21.61	24.87	46.48	21.58	27.65	49.23	21.08	13.83	34.91
		Total	134.34	144.02	278.36	136.49	143.13	279.62	132.32	129.30	261.61
3	Bihar	N	454.01	781.31	1,235.32	563.10	722.18	1,285.28	489.38	669.90	1,159.28
		P ₂ O ₅	100.69	322.66	423.35	151.74	306.23	457.97	122.09	231.85	353.93
		K ₂ O	32.14	129.69	161.83	44.10	123.61	167.71	33.18	67.07	100.25
		Total	586.84	1,233.66	1,820.50	758.94	1,152.02	1,910.96	644.65	968.82	1,613.46
4	Jharkhand	N	67.20	64.70	131.90	102.10	42.09	144.19	86.64	55.31	141.95
		P ₂ O ₅	23.09	22.09	45.18	39.00	19.24	58.24	36.17	17.04	53.21
		K ₂ O	1.54	3.05	4.59	3.34	2.39	5.73	3.25	3.41	6.66
		Total	91.83	89.84	181.67	144.44	63.72	208.16	126.06	75.76	201.82
5	Manipur	N	11.04	1.78	12.82	7.49	3.23	10.72	6.38	3.21	9.59
		P ₂ O ₅	1.53	2.17	3.70	1.07	1.47	2.54	1.95	0.70	2.65
		K ₂ O	0.33	0.65	0.98	0.50	1.11	1.61	0.04	0.10	0.14
		Total	12.90	4.60	17.50	9.06	5.81	14.87	8.37	4.01	12.38
6	Meghalaya	N	-	-	-	-	-	-	-	-	-
		P ₂ O ₅	-	-	-	-	-	-	-	-	-
		K ₂ O	-	-	-	-	-	-	-	-	-
		Total	-	-	-	-	-	-	-	-	-
7	Mizoram	N	2.89	0.88	3.77	0.54	0.45	0.99	0.09	1.15	1.24
		P ₂ O ₅	0.07	0.14	0.21	0.09	0.04	0.13	0.02	-	0.02
		K ₂ O	0.09	-	0.09	-	-	-	-	-	-
		Total	3.05	1.02	4.07	0.63	0.49	1.12	0.11	1.15	1.26
8	Nagaland	N	0.32	0.16	0.48	0.23	0.07	0.30	0.07	0.17	0.24
		P ₂ O ₅	0.05	0.03	0.08	0.04	-	0.04	-	-	-
		K ₂ O	-	-	-	-	-	-	-	-	-
		Total	0.37	0.19	0.56	0.27	0.07	0.34	0.07	0.17	0.24
9	Odisha	N	237.82	110.39	348.21	254.50	92.74	347.24	241.96	109.73	351.69
		P ₂ O ₅	100.56	50.65	151.21	129.61	49.28	178.89	122.20	46.51	168.71
		K ₂ O	47.85	27.10	74.95	58.76	26.31	85.07	53.41	13.57	66.98
		Total	386.23	188.14	574.37	442.87	168.33	611.20	417.57	169.81	587.38
10	Sikkim	N	-	-	-	-	-	-	-	-	-
		P ₂ O ₅	-	-	-	-	-	-	-	-	-
		K ₂ O	-	-	-	-	-	-	-	-	-
		Total	-	-	-	-	-	-	-	-	-

total by states and percentage variation (April-March) (continued)											
± % variation over previous season/year											
2019-20			2020-21			2021-22 (P)			Nutrient	Zone / State	S. No.
Kharif	Rabi	Total	Kharif	Rabi	Total	Kharif	Rabi	Total			
-1.9	5.5	2.1	16.8	-9.2	2.2	-11.2	2.3	-4.4	N	EAST	I.
-31.6	42.8	5.3	42.7	-2.9	12.0	-14.0	-16.7	-15.6	P ₂ O ₅		
-36.7	44.6	2.7	33.6	4.3	13.6	-15.8	-38.4	-29.9	K ₂ O		
-15.1	19.4	3.0	24.3	-5.3	6.3	-12.4	-10.3	-11.3	Total		
-	-	-	-	-	-	-	-	-	N	Arunachal Pradesh	1
-	-	-	-	-	-	-	-	-	P ₂ O ₅		
-	-	-	-	-	-	-	-	-	K ₂ O		
-	-	-	-	-	-	-	-	-	Total		
10.0	-18.4	-6.0	-2.5	-4.2	-3.4	-2.3	5.7	1.6	N	Assam	2
-10.1	23.5	7.6	22.9	0.3	9.2	-6.7	-16.1	-11.9	P ₂ O ₅		
-26.7	20.4	-7.3	-0.1	11.2	5.9	-2.3	-50.0	-29.1	K ₂ O		
-1.3	-6.5	-4.0	1.6	-0.6	0.5	-3.1	-9.7	-6.4	Total		
-5.7	10.6	4.0	24.0	-7.6	4.0	-13.1	-7.2	-9.8	N	Bihar	3
-43.1	47.6	7.0	50.7	-5.1	8.2	-19.5	-24.3	-22.7	P ₂ O ₅		
-51.7	58.5	9.0	37.2	-4.7	3.6	-24.8	-45.7	-40.2	K ₂ O		
-19.1	22.5	5.1	29.3	-6.6	5.0	-15.1	-15.9	-15.6	Total		
-2.0	9.6	3.4	51.9	-34.9	9.3	-15.1	31.4	-1.6	N	Jharkhand	4
-34.3	67.7	-6.5	68.9	-12.9	28.9	-7.3	-11.4	-8.6	P ₂ O ₅		
-70.3	217.7	-25.2	116.9	-21.6	24.8	-2.7	42.7	16.2	K ₂ O		
-15.7	22.8	-0.2	57.3	-29.1	14.6	-12.7	18.9	-3.0	Total		
19.4	-49.6	0.3	-32.2	81.5	-16.4	-14.8	-0.6	-10.5	N	Manipur	5
-66.7	51.7	-38.6	-30.1	-32.3	-31.4	82.2	-52.4	4.3	P ₂ O ₅		
-92.3	-39.8	-81.8	51.5	70.8	64.3	-92.0	-91.0	-91.3	K ₂ O		
-28.9	-23.8	-27.6	-29.8	26.3	-15.0	-7.6	-31.0	-16.7	Total		
-	-	-	-	-	-	-	-	-	N	Meghalaya	6
-	-	-	-	-	-	-	-	-	P ₂ O ₅		
-	-	-	-	-	-	-	-	-	K ₂ O		
-	-	-	-	-	-	-	-	-	Total		
-9.7	-36.2	-17.7	-81.3	-48.9	-73.7	-83.3	155.6	25.3	N	Mizoram	7
-94.4	27.3	-84.6	28.6	-71.4	-38.1	-77.8	-100.0	-84.6	P ₂ O ₅		
-91.8	-	-92.4	-	-	-	-	-	-	K ₂ O		
-45.0	-35.4	-42.9	-79.3	-52.0	-72.5	-82.5	134.7	12.5	Total		
-54.9	-69.2	-61.0	-28.1	-56.3	-37.5	-69.6	142.9	-20.0	N	Nagaland	8
-88.1	-92.9	-90.5	-20.0	-	-50.0	-	-	-	P ₂ O ₅		
-	-	-	-	-	-	-	-	-	K ₂ O		
-73.4	-84.6	-78.6	-27.0	-63.2	-39.3	-74.1	142.9	-29.4	Total		
-6.6	15.9	-0.5	7.0	-16.0	-0.3	-4.9	18.3	1.3	N	Odisha	9
-12.5	35.5	-0.7	28.9	-2.7	18.3	-5.7	-5.6	-5.7	P ₂ O ₅		
-9.2	22.9	0.3	22.8	-2.9	13.5	-9.1	-48.4	-21.3	K ₂ O		
-8.5	21.6	-0.4	14.7	-10.5	6.4	-5.7	0.9	-3.9	Total		
-	-	-	-	-	-	-	-	-	N	Sikkim	10
-	-	-	-	-	-	-	-	-	P ₂ O ₅		
-	-	-	-	-	-	-	-	-	K ₂ O		
-	-	-	-	-	-	-	-	-	Total		

Table 11. Season-wise consumption of N, P₂O₅ & K₂O from 2019-20 to 2021-22 and

S. No.	Zone/State	Nutrient	Consumption ('000 tonnes)								
			2019-20			2020-21			2021-22 (P)		
			Kharif	Rabi	Total	Kharif	Rabi	Total	Kharif	Rabi	Total
11	Tripura	N	1.25	7.48	8.73	4.65	2.63	7.28	5.92	5.39	11.31
		P ₂ O ₅	2.22	3.39	5.61	3.25	2.93	6.18	2.79	3.44	6.23
		K ₂ O	2.21	3.07	5.28	1.33	1.26	2.59	0.83	0.99	1.82
		Total	5.68	13.94	19.62	9.23	6.82	16.05	9.54	9.82	19.36
12	West Bengal	N	317.37	472.71	790.08	361.20	439.46	800.66	310.78	485.65	796.43
		P ₂ O ₅	125.90	334.57	460.47	184.57	333.98	518.55	151.27	294.25	445.52
		K ₂ O	98.55	250.07	348.62	143.40	274.99	418.39	118.03	182.91	300.95
		Total	541.82	1,057.35	1,599.17	689.17	1,048.43	1,737.60	580.08	962.81	1,542.90
II. NORTH		N	2,939.51	3,595.40	6,534.91	3,271.22	3,577.93	6,849.15	3,076.22	3,536.64	6,612.86
		P₂O₅	529.11	1,423.68	1,952.79	761.41	1,446.01	2,207.42	610.59	1,315.79	1,926.38
		K₂O	114.59	202.50	317.09	163.91	216.89	380.80	137.62	182.66	320.28
		Total	3,583.21	5,221.58	8,804.79	4,196.54	5,240.83	9,437.37	3,824.43	5,035.09	8,859.52
1	Haryana	N	424.43	645.21	1,069.64	453.41	653.61	1,107.02	476.99	575.25	1,052.25
		P ₂ O ₅	100.11	202.82	302.93	112.79	205.65	318.44	108.33	168.12	276.44
		K ₂ O	23.11	14.76	37.87	23.56	15.63	39.19	26.14	19.17	45.31
		Total	547.65	862.79	1,410.44	589.76	874.89	1,464.65	611.46	762.54	1,374.00
2	Himachal Pradesh	N	16.77	21.52	38.29	19.47	18.27	37.74	17.42	20.85	38.27
		P ₂ O ₅	2.97	7.41	10.38	4.20	7.06	11.26	4.27	4.90	9.18
		K ₂ O	2.20	7.74	9.94	3.32	6.93	10.25	3.09	5.45	8.54
		Total	21.94	36.67	58.61	26.99	32.26	59.25	24.78	31.20	55.99
3	Jammu & Kashmir	N	31.06	19.76	50.82	82.65	31.44	114.09	50.53	34.88	85.40
		P ₂ O ₅	9.48	7.35	16.83	28.45	9.10	37.55	11.46	10.17	21.63
		K ₂ O	9.62	1.57	11.19	19.15	9.69	28.84	8.92	4.12	13.04
		Total	50.16	28.68	78.84	130.25	50.23	180.48	70.91	49.17	120.07
4	Punjab	N	670.78	829.00	1,499.78	710.17	785.01	1,495.18	769.45	804.44	1,573.88
		P ₂ O ₅	82.99	280.06	363.05	109.28	273.37	382.65	130.63	225.28	355.91
		K ₂ O	21.19	21.85	43.04	28.14	27.28	55.42	33.18	26.79	59.97
		Total	774.96	1,130.91	1,905.87	847.59	1,085.66	1,933.25	933.26	1,056.51	1,989.76
5	Uttar Pradesh	N	1,722.86	2,017.36	3,740.22	1,936.09	2,027.64	3,963.73	1,701.40	2,044.10	3,745.50
		P ₂ O ₅	323.13	903.69	1,226.82	493.64	933.19	1,426.83	346.14	890.92	1,237.07
		K ₂ O	55.37	150.54	205.91	86.14	152.29	238.43	62.74	123.77	186.50
		Total	2,101.36	3,071.59	5,172.95	2,515.87	3,113.12	5,628.99	2,110.28	3,058.79	5,169.07
6	Uttarakhand	N	68.98	54.90	123.88	65.83	54.85	120.68	54.96	49.78	104.73
		P ₂ O ₅	9.85	20.88	30.73	12.41	16.58	28.99	9.26	15.18	24.44
		K ₂ O	2.89	5.92	8.81	3.45	4.92	8.37	3.51	3.24	6.76
		Total	81.72	81.70	163.42	81.69	76.35	158.04	67.73	68.20	135.93
7	Chandigarh	N	-	-	-	-	-	-	-	-	-
		P ₂ O ₅	-	-	-	-	-	-	-	-	-
		K ₂ O	-	-	-	-	-	-	-	-	-
		Total	-	-	-	-	-	-	-	-	-
8	Delhi	N	4.63	7.65	12.28	3.60	7.11	10.71	5.47	7.34	12.81
		P ₂ O ₅	0.58	1.47	2.05	0.64	1.06	1.70	0.50	1.22	1.72
		K ₂ O	0.21	0.12	0.33	0.15	0.15	0.30	0.04	0.12	0.16
		Total	5.42	9.24	14.66	4.39	8.32	12.71	6.01	8.68	14.69

total by states and percentage variation (April-March) (continued)											
± % variation over previous season/year											
2019-20			2020-21			2021-22 (P)			Nutrient	Zone / State	S. No.
Kharif	Rabi	Total	Kharif	Rabi	Total	Kharif	Rabi	Total			
-65.6	59.5	4.9	272.0	-64.8	-16.6	27.3	104.9	55.4	N	Tripura	11
55.2	40.7	46.1	46.4	-13.6	10.2	-14.2	17.4	0.8	P ₂ O ₅		
172.8	51.2	85.9	-39.8	-59.0	-50.9	-37.6	-21.4	-29.7	K ₂ O		
-3.2	52.7	30.8	62.5	-51.1	-18.2	3.4	44.0	20.6	Total		
5.3	0.7	2.5	13.8	-7.0	1.3	-14.0	10.5	-0.5	N	West Bengal	12
-33.6	40.3	7.6	46.6	-0.2	12.6	-18.0	-11.9	-14.1	P ₂ O ₅		
-39.3	43.5	3.6	45.5	10.0	20.0	-17.7	-33.5	-28.1	K ₂ O		
-17.1	19.9	4.2	27.2	-0.8	8.7	-15.8	-8.2	-11.2	Total		
-0.4	9.9	5.0	11.3	-0.5	4.8	-6.0	-1.2	-3.4	N	NORTH	II.
-23.7	34.5	11.5	43.9	1.6	13.0	-19.8	-9.0	-12.7	P₂O₅		
-34.2	43.7	0.6	43.0	7.1	20.1	-16.0	-15.8	-15.9	K₂O		
-6.2	16.8	6.2	17.1	0.4	7.2	-8.9	-3.9	-6.1	Total		
-18.0	10.6	-2.9	6.8	1.3	3.5	5.2	-12.0	-4.9	N	Haryana	1
-35.1	37.1	0.2	12.7	1.4	5.1	-4.0	-18.2	-13.2	P ₂ O ₅		
-34.5	10.0	-22.2	1.9	5.9	3.5	11.0	22.6	15.6	K ₂ O		
-22.6	15.8	-2.9	7.7	1.4	3.8	3.7	-12.8	-6.2	Total		
0.2	10.2	5.6	16.1	-15.1	-1.4	-10.5	14.1	1.4	N	Himachal Pradesh	2
-6.6	-7.8	-7.5	41.4	-4.7	8.5	1.7	-30.6	-18.5	P ₂ O ₅		
25.0	-8.1	-2.4	50.9	-10.5	3.1	-6.9	-21.4	-16.7	K ₂ O		
1.2	1.9	1.6	23.0	-12.0	1.1	-8.2	-3.3	-5.5	Total		
-1.5	-52.9	-30.8	166.1	59.1	124.5	-38.9	10.9	-25.1	N	Jammu & Kashmir	3
4.9	-63.3	-42.1	200.1	23.8	123.1	-59.7	11.8	-42.4	P ₂ O ₅		
291.1	-87.5	-25.6	99.1	517.2	157.7	-53.4	-57.5	-54.8	K ₂ O		
16.6	-61.5	-32.9	159.7	75.1	128.9	-45.6	-2.1	-33.5	Total		
0.5	14.9	8.0	5.9	-5.3	-0.3	8.3	2.5	5.3	N	Punjab	4
-6.5	16.3	10.2	31.7	-2.4	5.4	19.5	-17.6	-7.0	P ₂ O ₅		
-5.9	12.8	2.7	32.8	24.9	28.8	17.9	-1.8	8.2	K ₂ O		
-0.5	15.2	8.3	9.4	-4.0	1.4	10.1	-2.7	2.9	Total		
4.9	9.7	7.5	12.4	0.5	6.0	-12.1	0.8	-5.5	N	Uttar Pradesh	5
-24.4	44.8	16.7	52.8	3.3	16.3	-29.9	-4.5	-13.3	P ₂ O ₅		
-48.6	83.6	8.5	55.6	1.2	15.8	-27.2	-18.7	-21.8	K ₂ O		
-3.5	20.7	9.6	19.7	1.4	8.8	-16.1	-1.7	-8.2	Total		
-5.4	-8.2	-6.7	-4.6	-0.1	-2.6	-16.5	-9.2	-13.2	N	Uttarakhand	6
-3.7	24.4	13.8	26.0	-20.6	-5.7	-25.4	-8.4	-15.7	P ₂ O ₅		
-35.6	14.3	-8.9	19.4	-16.9	-5.0	1.7	-34.1	-19.2	K ₂ O		
-6.8	-0.1	-3.6	0.0	-6.5	-3.3	-17.1	-10.7	-14.0	Total		
-	-	-	-	-	-	-	-	-	N	Chandigarh	7
-	-	-	-	-	-	-	-	-	P ₂ O ₅		
-	-	-	-	-	-	-	-	-	K ₂ O		
-	-	-	-	-	-	-	-	-	Total		
30.4	22.4	25.3	-22.2	-7.1	-12.8	51.9	3.2	19.6	N	Delhi	8
9.4	116.2	69.4	10.3	-27.9	-17.1	-21.9	15.1	1.2	P ₂ O ₅		
-	-	-	-28.6	25.0	-9.1	-73.3	-20.0	-46.7	K ₂ O		
32.8	33.3	33.2	-19.0	-10.0	-13.3	36.9	4.3	15.6	Total		

Table 11. Season-wise consumption of N, P₂O₅ & K₂O from 2019-20 to 2021-22 and

S. No.	Zone/State	Nutrient	Consumption ('000 tonnes)								
			2019-20			2020-21			2021-22 (P)		
			Kharif	Rabi	Total	Kharif	Rabi	Total	Kharif	Rabi	Total
III. SOUTH		N	1,659.44	1,994.56	3,654.00	2,299.86	1,930.46	4,230.32	2,187.01	1,927.17	4,114.18
		P ₂ O ₅	803.92	885.53	1,689.45	1,158.74	932.08	2,090.82	1,067.26	821.02	1,888.28
		K ₂ O	355.99	495.25	851.24	524.89	554.60	1,079.49	503.03	330.71	833.74
		Total	2,819.35	3,375.34	6,194.69	3,983.49	3,417.14	7,400.63	3,757.30	3,078.90	6,836.20
1	Andhra Pradesh	N	388.36	592.59	980.95	511.05	628.58	1,139.63	418.01	590.88	1,008.89
		P ₂ O ₅	199.47	290.81	490.28	279.29	339.30	618.59	232.69	273.84	506.53
		K ₂ O	77.31	134.49	211.80	107.79	159.93	267.72	89.59	94.57	184.16
		Total	665.14	1,017.89	1,683.03	898.13	1,127.81	2,025.94	740.29	959.29	1,699.58
2	Telangana	N	515.01	472.09	987.10	708.17	461.56	1,169.73	633.47	471.34	1,104.81
		P ₂ O ₅	214.49	155.19	369.68	299.08	175.51	474.59	260.92	162.99	423.92
		K ₂ O	51.75	70.66	122.41	84.96	88.26	173.22	66.48	41.21	107.69
		Total	781.25	697.94	1,479.19	1,092.21	725.33	1,817.54	960.87	675.54	1,636.42
3	Karnataka	N	526.83	490.76	1,017.59	753.65	425.80	1,179.45	775.67	461.83	1,237.50
		P ₂ O ₅	297.92	262.41	560.33	438.22	249.99	688.21	421.10	228.39	649.49
		K ₂ O	139.83	143.16	282.99	203.53	151.65	355.18	211.76	93.62	305.39
		Total	964.58	896.33	1,860.91	1,395.40	827.44	2,222.84	1,408.53	783.84	2,192.38
4	Kerala	N	36.28	42.99	79.27	44.29	43.77	88.06	42.03	36.22	78.24
		P ₂ O ₅	16.14	17.63	33.77	19.91	18.05	37.96	17.99	13.72	31.72
		K ₂ O	28.50	33.33	61.83	37.63	37.47	75.10	34.66	21.48	56.14
		Total	80.92	93.95	174.87	101.83	99.29	201.12	94.68	71.42	166.10
5	Tamil Nadu	N	190.80	391.51	582.31	278.46	366.39	644.85	313.71	362.26	675.97
		P ₂ O ₅	75.31	158.25	233.56	121.24	148.08	269.32	133.36	140.94	274.29
		K ₂ O	58.29	113.01	171.30	90.33	116.39	206.72	99.88	79.45	179.33
		Total	324.40	662.77	987.17	490.03	630.86	1,120.89	546.95	582.65	1,129.59
6	Puducherry	N	2.16	4.62	6.78	4.24	4.23	8.47	3.93	4.55	8.48
		P ₂ O ₅	0.59	1.24	1.83	1.00	1.15	2.15	0.97	0.97	1.94
		K ₂ O	0.31	0.60	0.91	0.65	0.90	1.55	0.66	0.38	1.04
		Total	3.06	6.46	9.52	5.89	6.28	12.17	5.56	5.90	11.46
7	A & N Islands	N	-	-	-	-	0.13	0.13	0.19	0.09	0.29
		P ₂ O ₅	-	-	-	-	-	-	0.23	0.17	0.40
		K ₂ O	-	-	-	-	-	-	-	-	-
		Total	-	-	-	-	0.13	0.13	0.42	0.26	0.69
8	Lakshadweep	N	-	-	-	-	-	-	-	-	-
		P ₂ O ₅	-	-	-	-	-	-	-	-	-
		K ₂ O	-	-	-	-	-	-	-	-	-
		Total	-	-	-	-	-	-	-	-	-
IV. WEST		N	2,738.76	3,460.59	6,199.35	3,318.76	3,233.40	6,552.16	2,941.98	3,119.14	6,061.12
		P ₂ O ₅	1,299.12	1,580.72	2,879.84	1,831.98	1,570.41	3,402.39	1,580.04	1,355.25	2,935.29
		K ₂ O	401.94	393.90	795.84	530.48	432.60	963.08	525.00	338.72	863.72
		Total	4,439.82	5,435.21	9,875.03	5,681.22	5,236.41	10,917.63	5,047.02	4,813.11	9,860.13
1	Gujarat	N	603.47	692.97	1,296.44	617.57	732.10	1,349.67	519.74	695.55	1,215.29
		P ₂ O ₅	174.00	207.65	381.65	208.37	262.43	470.80	170.73	211.90	382.62
		K ₂ O	45.46	68.12	113.58	48.63	88.29	136.92	45.61	56.32	101.93
		Total	822.93	968.74	1,791.67	874.57	1,082.82	1,957.39	736.08	963.77	1,699.84

total by states and percentage variation (April-March) (continued)											
± % variation over previous season/year									Nutrient	Zone / State	S. No.
2019-20			2020-21			2021-22 (P)					
Kharif	Rabi	Total	Kharif	Rabi	Total	Kharif	Rabi	Total			
-6.4	23.5	7.9	38.6	-3.2	15.8	-4.9	-0.2	-2.7	N	SOUTH	III.
-8.8	30.2	8.2	44.1	5.3	23.8	-7.9	-11.9	-9.7	P ₂ O ₅		
-25.7	20.8	-4.2	47.4	12.0	26.8	-4.2	-40.4	-22.8	K ₂ O		
-10.0	24.8	6.1	41.3	1.2	19.5	-5.7	-9.9	-7.6	Total		
-5.5	14.8	5.8	31.6	6.1	16.2	-18.2	-6.0	-11.5	N	Andhra Pradesh	1
-1.9	30.2	14.9	40.0	16.7	26.2	-16.7	-19.3	-18.1	P ₂ O ₅		
-16.2	22.2	4.7	39.4	18.9	26.4	-16.9	-40.9	-31.2	K ₂ O		
-5.9	19.8	8.1	35.0	10.8	20.4	-17.6	-14.9	-16.1	Total		
4.1	19.9	11.1	37.5	-2.2	18.5	-10.5	2.1	-5.5	N	Telangana	2
0.7	19.2	7.7	39.4	13.1	28.4	-12.8	-7.1	-10.7	P ₂ O ₅		
-17.9	37.3	6.9	64.2	24.9	41.5	-21.8	-53.3	-37.8	K ₂ O		
1.4	21.3	9.9	39.8	3.9	22.9	-12.0	-6.9	-10.0	Total		
-11.5	44.0	8.7	43.1	-13.2	15.9	2.9	8.5	4.9	N	Karnataka	3
-13.1	35.8	4.5	47.1	-4.7	22.8	-3.9	-8.6	-5.6	P ₂ O ₅		
-27.2	24.6	-7.8	45.6	5.9	25.5	4.0	-38.3	-14.0	K ₂ O		
-14.7	38.1	4.6	44.7	-7.7	19.4	0.9	-5.3	-1.4	Total		
7.2	9.5	8.4	22.1	1.8	11.1	-5.1	-17.2	-11.2	N	Kerala	4
-21.2	-13.2	-17.2	23.4	2.4	12.4	-9.6	-24.0	-16.4	P ₂ O ₅		
-14.1	-3.9	-8.9	32.0	12.4	21.5	-7.9	-42.7	-25.2	K ₂ O		
-7.5	-0.3	-3.8	25.8	5.7	15.0	-7.0	-28.1	-17.4	Total		
-19.1	22.3	4.8	45.9	-6.4	10.7	12.7	-1.1	4.8	N	Tamil Nadu	5
-25.3	41.0	9.6	61.0	-6.4	15.3	10.0	-4.8	1.8	P ₂ O ₅		
-40.3	15.0	-12.5	55.0	3.0	20.7	10.6	-31.7	-13.2	K ₂ O		
-25.3	24.9	2.3	51.1	-4.8	13.5	11.6	-7.6	0.8	Total		
8.0	2.9	4.5	96.3	-8.4	24.9	-7.3	7.6	0.1	N	Puducherry	6
20.4	45.9	36.6	69.5	-7.3	17.5	-3.0	-15.7	-9.8	P ₂ O ₅		
-53.7	7.1	-26.0	109.7	50.0	70.3	1.5	-57.8	-32.9	K ₂ O		
-3.2	9.5	5.1	92.5	-2.8	27.8	-5.6	-6.1	-5.8	Total		
-	-	-	-	-	-	-	-30.8	123.1	N	A & N Islands	7
-	-	-	-	-	-	-	-	-	P ₂ O ₅		
-	-	-	-	-	-	-	-	-	K ₂ O		
-	-	-	-	-	-	-	100.0	430.8	Total		
-	-	-	-	-	-	-	-	-	N	Lakshadweep	8
-	-	-	-	-	-	-	-	-	P ₂ O ₅		
-	-	-	-	-	-	-	-	-	K ₂ O		
-	-	-	-	-	-	-	-	-	Total		
1.7	29.2	15.4	21.2	-6.6	5.7	-11.4	-3.5	-7.5	N	WEST	IV.
-8.7	44.8	14.5	41.0	-0.7	18.1	-13.8	-13.7	-13.7	P ₂ O ₅		
-19.5	12.3	-6.4	32.0	9.8	21.0	-1.0	-21.7	-10.3	K ₂ O		
-3.8	31.9	13.0	28.0	-3.7	10.6	-11.2	-8.1	-9.7	Total		
5.3	23.3	14.2	2.3	5.6	4.1	-15.8	-5.0	-10.0	N	Gujarat	1
-11.2	39.4	10.6	19.8	26.4	23.4	-18.1	-19.3	-18.7	P ₂ O ₅		
-25.5	19.5	-3.7	7.0	29.6	20.5	-6.2	-36.2	-25.6	K ₂ O		
-0.9	26.1	12.1	6.3	11.8	9.2	-15.8	-11.0	-13.2	Total		

Table 11. Season-wise consumption of N, P₂O₅ & K₂O from 2019-20 to 2021-22 and

S. No.	Zone/State	Nutrient	Consumption ('000 tonnes)								
			2019-20			2020-21			2021-22 (P)		
			Kharif	Rabi	Total	Kharif	Rabi	Total	Kharif	Rabi	Total
2	Madhya Pradesh	N	560.74	1,112.31	1,673.05	766.79	965.91	1,732.70	690.89	937.91	1,628.80
		P ₂ O ₅	299.49	594.82	894.31	480.29	540.33	1,020.62	410.50	479.71	890.21
		K ₂ O	42.66	73.36	116.02	63.96	76.24	140.20	60.75	71.97	132.72
		Total	902.89	1,780.49	2,683.38	1,311.04	1,582.48	2,893.52	1,162.14	1,489.59	2,651.73
3	Chhattisgarh	N	344.30	105.38	449.68	392.60	132.49	525.09	354.39	100.29	454.68
		P ₂ O ₅	177.49	48.03	225.52	208.51	63.48	271.99	190.40	44.31	234.71
		K ₂ O	48.69	13.46	62.15	55.70	18.83	74.53	56.20	12.42	68.62
		Total	570.48	166.87	737.35	656.81	214.80	871.61	600.99	157.02	758.01
4	Maharashtra	N	827.57	733.39	1,560.96	1,075.66	624.19	1,699.85	965.63	628.37	1,594.00
		P ₂ O ₅	490.97	407.23	898.20	732.73	395.20	1,127.93	631.14	381.05	1,012.19
		K ₂ O	255.26	226.86	482.12	351.86	233.95	585.81	349.64	179.74	529.38
		Total	1,573.80	1,367.48	2,941.28	2,160.25	1,253.34	3,413.59	1,946.41	1,189.16	3,135.57
5	Rajasthan	N	401.66	815.89	1,217.55	464.44	778.11	1,242.55	410.04	756.51	1,166.55
		P ₂ O ₅	156.45	322.62	479.07	201.13	308.64	509.77	176.66	238.03	414.70
		K ₂ O	9.23	11.73	20.96	9.78	14.88	24.66	12.11	18.03	30.14
		Total	567.34	1,150.24	1,717.58	675.35	1,101.63	1,776.98	598.81	1,012.57	1,611.39
6	Goa	N	0.80	0.54	1.34	1.20	0.58	1.78	1.05	0.46	1.50
		P ₂ O ₅	0.58	0.30	0.88	0.60	0.33	0.93	0.51	0.22	0.73
		K ₂ O	0.64	0.37	1.01	0.55	0.41	0.96	0.69	0.24	0.92
		Total	2.02	1.21	3.23	2.35	1.32	3.67	2.25	0.92	3.15
7	Daman & Diu	N	-	-	-	-	-	-	-	-	-
		P ₂ O ₅	-	-	-	-	-	-	-	-	-
		K ₂ O	-	-	-	-	-	-	-	-	-
		Total	-	-	-	-	-	-	-	-	-
8	Dadra & Nagar Haveli	N	0.22	0.11	0.33	0.50	0.02	0.52	0.24	0.05	0.29
		P ₂ O ₅	0.14	0.07	0.21	0.35	-	0.35	0.10	0.03	0.13
		K ₂ O	-	-	-	-	-	-	-	-	-
		Total	0.36	0.18	0.54	0.85	0.02	0.87	0.34	0.08	0.42
All India		N	8,522.51	10,578.80	19,101.31	10,274.22	10,129.75	20,403.97	9,434.91	10,003.40	19,438.30
		P ₂ O ₅	3,006.09	4,655.95	7,662.04	4,285.87	4,692.07	8,977.94	3,717.13	4,111.37	7,828.50
		K ₂ O	1,076.84	1,530.16	2,607.00	1,492.29	1,661.41	3,153.70	1,395.48	1,133.97	2,529.45
		Total	12,605.44	16,764.91	29,370.35	16,052.38	16,483.23	32,535.61	14,547.52	15,248.74	29,796.25

(P) = Provisional.

Note : 1. Fertiliser consumption by Plantation crops in east and south zones is included in the total of respective states.
2. Due to rounding off, total for the State/Zone/All-India (Horizontal & Vertical) may not exactly tally.

+K₂O) in 2021-22 was the highest in north zone (199.6 kg), followed by south (192.6 kg), east (140.2 kg), and west (105.9 kg).

There is a wide variation in NPK use ratio among the zones. During 2021-22, NPK use ratio in east zone was 5.2:2.1:1, south 4.9:2.3:1 and west 7.0:3.4:1 as against 20.6:6.0:1 in north zone.

6.3 State-wise Comments

Among 21 major fertilizer consuming states, as many as 19 states registered negative growth in fertilizer consumption during 2021-22 over 2020-21. Only 2 states (Punjab and Tamil Nadu) recorded positive growth during the period (Table 12).

Out of total nutrient consumption of 29.80 million MT

total by states and percentage variation (April-March) (concluded)											
± % variation over previous season/year									Nutrient	Zone / State	S. No.
2019-20			2020-21			2021-22 (P)					
Kharif	Rabi	Total	Kharif	Rabi	Total	Kharif	Rabi	Total			
-8.4	34.3	16.2	36.7	-13.2	3.6	-9.9	-2.9	-6.0	N	Madhya Pradesh	2
-25.2	73.6	20.4	60.4	-9.2	14.1	-14.5	-11.2	-12.8	P ₂ O ₅		
-36.7	114.6	14.2	49.9	3.9	20.8	-5.0	-5.6	-5.3	K ₂ O		
-16.4	47.7	17.4	45.2	-11.1	7.8	-11.4	-5.9	-8.4	Total		
54.5	17.6	43.9	14.0	25.7	16.8	-9.7	-24.3	-13.4	N	Chhattisgarh	3
40.2	-6.0	26.9	17.5	32.2	20.6	-8.7	-30.2	-13.7	P ₂ O ₅		
22.1	-42.6	-1.8	14.4	39.9	19.9	0.9	-34.0	-7.9	K ₂ O		
46.5	1.6	33.2	15.1	28.7	18.2	-8.5	-26.9	-13.0	Total		
-5.3	38.2	11.1	30.0	-14.9	8.9	-10.2	0.7	-6.2	N	Maharashtra	4
0.5	16.3	7.1	49.2	-3.0	25.6	-13.9	-3.6	-10.3	P ₂ O ₅		
-17.8	4.9	-8.5	37.8	3.1	21.5	-0.6	-23.2	-9.6	K ₂ O		
-5.9	24.7	6.2	37.3	-8.3	16.1	-9.9	-5.1	-8.1	Total		
-1.8	22.2	13.1	15.6	-4.6	2.1	-11.7	-2.8	-6.1	N	Rajasthan	5
-25.5	62.6	17.3	28.6	-4.3	6.4	-12.2	-22.9	-18.6	P ₂ O ₅		
-53.2	-40.7	-46.9	6.0	26.9	17.7	23.8	21.2	22.2	K ₂ O		
-11.2	29.8	12.7	19.0	-4.2	3.5	-11.3	-8.1	-9.3	Total		
-25.9	1.9	-16.8	50.0	7.4	32.8	-12.5	-20.7	-15.7	N	Goa	6
-36.3	-9.1	-29.0	3.4	10.0	5.7	-15.0	-33.3	-21.5	P ₂ O ₅		
-1.5	94.7	20.2	-14.1	10.8	-5.0	25.5	-41.5	-4.2	K ₂ O		
-23.5	15.2	-12.5	16.3	9.1	13.6	-4.3	-30.3	-14.2	Total		
-	-	-	-	-	-	-	-	-	N	Daman & Diu	7
-	-	-	-	-	-	-	-	-	P ₂ O ₅		
-	-	-	-	-	-	-	-	-	K ₂ O		
-	-	-	-	-	-	-	-	-	Total		
266.7	22.2	120.0	127.3	-81.8	57.6	-52.0	150.0	-44.2	N	Dadra & Nagar Haveli	8
366.7	40.0	162.5	150.0	-100.0	66.7	-71.4	-	-62.9	P ₂ O ₅		
-	-	-	-	-	-	-	-	-	K ₂ O		
300.0	28.6	134.8	136.1	-88.9	61.1	-60.0	300.0	-51.7	Total		
-1.2	17.4	8.3	20.6	-4.2	6.8	-8.2	-1.2	-4.7	N	All India	
-15.2	38.3	10.9	42.6	0.8	17.2	-13.3	-12.4	-12.8	P ₂ O ₅		
-27.0	27.0	-2.7	38.6	8.6	21.0	-6.5	-31.7	-19.8	K ₂ O		
-7.6	23.4	7.9	27.3	-1.7	10.8	-9.4	-7.5	-8.4	Total		

Source: 1. Ministry of Agriculture & Farmers Welfare, Government of India.
2. State Departments of Agriculture.

in the country, Uttar Pradesh had the largest share (17.3%), followed by Maharashtra (10.5%), Madhya Pradesh (8.9%), Karnataka (7.4%), Punjab (6.7%), Gujarat and Andhra Pradesh (5.7% each), Telangana (5.5%), Bihar and Rajasthan (5.4% each) and West Bengal (5.2%). These 11 states accounted for about 84% of the total consumption in the country. Next in order were Haryana (4.6%) and Tamil Nadu (3.8%). In

other words, these 13 states accounted for about 92% of total consumption in the country. Balance 8% was shared by the remaining states/UTs (Table 13).

There is a wide variation in the use of fertilizers among various states. The per hectare use of total fertilizer nutrients varies from as low as 0.5 kg in Nagaland to as high as 283.4 kg in Telangana. All-India per hectare

Table 12. States according to descending order of contribution to total increase in consumption (N+P ₂ O ₅ +K ₂ O) 2021-22 over 2020-21 and 2020-21 over 2019-20									
Ranking in terms of increase in consumption 2021-22 over 2020-21	States	2021-22(P) over 2020-21			Ranking in terms of increase in consumption 2020-21 over 2019-20	States	2020-21(P) over 2019-20		
		Increase in absolute terms ('000 MT)	Share in contribution to total increase (%)	Cumulative share (%)			Increase in absolute terms ('000 MT)	Share in contribution to total increase (%)	Cumulative share (%)
States with Positive Growth									
1	Punjab	56.51	86.66	86.66	1	Maharashtra	472.31	14.86	14.86
2	Tamil Nadu	8.70	13.34	100.00	2	Uttar Pradesh	456.04	14.35	29.21
					3	Karnataka	361.93	11.39	40.60
					4	Andhra Pradesh	342.91	10.79	51.38
					5	Telangana	338.35	10.65	62.03
					6	Madhya Pradesh	210.14	6.61	68.64
					7	Gujarat	165.72	5.21	73.86
					8	West Bengal	138.43	4.36	78.21
					9	Chhattisgarh	134.26	4.22	82.44
					10	Tamil Nadu	133.72	4.21	86.64
					11	Jammu & Kashmir	101.64	3.20	89.84
					12	Bihar	90.46	2.85	92.69
					13	Rajasthan	59.40	1.87	94.56
					14	Haryana	54.21	1.71	96.26
					15	Odisha	36.83	1.16	97.42
					16	Punjab	27.38	0.86	98.28
					17	Jharkhand	26.49	0.83	99.11
					18	Kerala	26.25	0.83	99.94
					19	Assam	1.26	0.04	99.98
					20	Himachal Pradesh	0.64	0.02	100.00
Sub Total		65.21					3178.37		
States with Negative Growth									
1	Himachal Pradesh	3.26	0.12	0.12	1	Uttarakhand	5.38	100.00	100.00
2	Jharkhand	6.34	0.23	0.34					
3	Assam	18.01	0.64	0.98					
4	Uttarakhand	22.11	0.79	1.77					
5	Odisha	23.82	0.85	2.62					
6	Karnataka	30.46	1.09	3.71					
7	Kerala	35.02	1.25	4.95					
8	Jammu & Kashmir	60.41	2.15	7.11					
9	Haryana	90.65	3.23	10.34					
10	Chhattisgarh	113.60	4.05	14.39					
11	Rajasthan	165.59	5.90	20.29					
12	Telangana	181.12	6.45	26.74					
13	West Bengal	194.70	6.94	33.68					
14	Madhya Pradesh	241.79	8.62	42.29					
15	Gujarat	257.55	9.18	51.47					
16	Maharashtra	278.02	9.91	61.38					
17	Bihar	297.50	10.60	71.98					
18	Andhra Pradesh	326.36	11.63	83.61					
19	Uttar Pradesh	459.92	16.39	100.00					
Sub Total		-2806.23					-5.38		
All India		-2,739.36 \$					3165.26 \$		
(P) = Provisional. \$ = Includes small states/UTs/Plantations.									
Note: For consumption figures, see Table 11.									

consumption of total nutrients was 146.7 kg in 2021-22. The major states which had consumption higher (kg/ha) than All-India average include, Telangana (283.4), Punjab (253.9), Andhra Pradesh (233.2), Bihar

(221.1), Haryana (207.6), Uttar Pradesh (192.5), Tamil Nadu (190.1), Maharashtra (163.8), Karnataka (158.5) and West Bengal (152.8). In the remaining states, per hectare consumption was lower than the All-India

Table 13. States according to descending order of share of consumption to All-India consumption (N+P₂O₅+K₂O) in 2020-21 and 2021-22

Ranking		States	Share of All India total (%)	
2020-21	2021-22 (P)		2020-21	2021-22 (P)
1	1	Uttar Pradesh	17.3	17.3
2	2	Maharashtra	10.5	10.5
3	3	Madhya Pradesh	8.9	8.9
4	4	Karnataka	6.8	7.4
7	5	Punjab	5.9	6.7
6	6	Gujarat	6.0	5.7
5	7	Andhra Pradesh	6.2	5.7
9	8	Telangana	5.6	5.5
8	9	Bihar	5.9	5.4
10	10	Rajasthan	5.5	5.4
11	11	West Bengal	5.3	5.2
12	12	Haryana	4.5	4.6
13	13	Tamil Nadu	3.4	3.8
14	14	Chhattisgarh	2.7	2.5
15	15	Odisha	1.9	2.0
16	16	Assam	0.9	0.9
17	17	Jharkhand	0.6	0.7
18	18	Kerala	0.6	0.6
20	19	Uttarakhand	0.5	0.5
19	20	Jammu & Kashmir	0.6	0.4
21	21	Himachal Pradesh	0.2	0.2

(P) = Provisional.
 Note: 1. For consumption figures, see Table 11.
 2. Share of All-India consumption relates to ranking of states in individual years.

average of 146.7 kg. **Table 14** shows the state-wise consumption of plant nutrients per hectare of gross cropped area.

As mentioned earlier, All-India NPK use ratio was 7.7:3.1:1 during 2021-22. However, NPK use ratio widely varied among various states. While NPK use ratio was around 4.1:2.1:1 in Karnataka, it was 38.7:13.8:1 in Rajasthan during 2021-22. The state-wise details of the ratio of N and P₂O₅ in relation to K₂O are shown in **Table 15**.

All India product-wise sale of fertilizers is shown in **Table 16**. Sale of major fertilizers, viz. urea at 34.18 million MT, DAP at 9.27 million MT, NP/NPK complex fertilizers at 11.48 million MT and MOP at 2.46 million MT registered decline of 2.5%, 22.2%, 2.8% and 28.3%, respectively, during 2021-22 over 2020-21. However, sale of SSP at 5.68 million MT recorded an increase of

26.6% during the period. Total sale of fertilizer products reduced from 67.61 million MT during 2020-21 to 63.94 million MT in 2021-22 representing decline of 5.4%.

The details of state-wise review of fertilizer consumption, weather & crop situation and fertilizer sale points during 2021-22 are presented in the following paragraphs.

I. EAST ZONE

i) Assam

Fertilizer Consumption

Consumption of total fertilizer nutrients (N+P₂O₅+K₂O) in Assam at 261.6 thousand tonnes (thousand MT) in 2021-22 showed a decline of 6.4% over 2020-21. Consumption of total fertilizer nutrient declined in both *kharif* and *rabi* seasons. It declined by 3.1% in *kharif* 2021 and 9.7% in *rabi* 2021-22 over the corresponding seasons of the previous year. *Kharif:rabi* share in total consumption overturned from 49:51 during 2020-21 to 51:49 during 2021-22.

Consumption of all the three nutrients showed declined during 2021-22 over 2020-21. Consumption of N at 178.5 thousand MT, P₂O₅ at 48.2 thousand MT and K₂O at 34.9 thousand MT registered decline of 1.6%, 11.9% and 29.1%, respectively, during the period. NPK use ratio widened from 3.6:1.1:1 during 2020-21 to 5.1:1.4:1 during 2021-22. Per hectare use of fertilizer nutrients declined from 70.3 kg during 2020-21 to 65.8 kg during 2021-22.

Weather and Crop Situation

Total rainfall was deficient in Southwest monsoon 2021 (June-September) at 1387 mm as against 1774 mm normal rains. Out of 27 districts, 14 districts received normal rains and 13 received deficient rains during the season. During *kharif* 2021, sown area under rice and pulses was down by 15 and 1 thousand ha, respectively, over *kharif* 2020. However, sown area under coarse cereals, oilseeds, sugarcane and jute & mesta was higher by 9, 1, 4 and 5 thousand ha, respectively, during the season.

During post-monsoon 2021 (October-December), rainfall was deficient at 152 mm as against 197 mm normal rains. Out of 27 districts, 9 received normal rains, 6 received excess rains and 12 received deficient to large deficient rains during the season. During *rabi* 2021-22, sown area under rice, pulses and coarse cereals was lower by 13, 27 and 1 thousand ha, respectively, over *rabi* 2020-21. However, sown area

Table 14. Consumption of plant nutrients per unit of gross cropped area from 2019-20 to 2021-22 (Provisional)												
Zone/State	2019-20				2020-21				2021-22 (P)			
	N	P ₂ O ₅	K ₂ O	Total	N	P ₂ O ₅	K ₂ O	Total	N	P ₂ O ₅	K ₂ O	Total
East	89.7	37.7	21.3	148.7	91.7	42.2	24.2	158.1	87.6	35.7	16.9	140.2
Arunachal Pradesh	-	-	-	-	-	-	-	-	-	-	-	-
Assam	45.7	12.6	11.7	70.0	44.2	13.8	12.4	70.3	44.9	12.1	8.8	65.8
Bihar	169.3	58.0	22.2	249.5	176.1	62.8	23.0	261.9	158.9	48.5	13.7	221.1
Jharkhand	75.0	25.7	2.6	103.2	81.9	33.1	3.3	118.3	80.7	30.2	3.8	114.7
Manipur	29.1	8.4	2.2	39.7	24.3	5.8	3.7	33.7	21.7	6.0	0.3	28.1
Meghalaya	-	-	-	-	-	-	-	-	-	-	-	-
Mizoram	20.2	1.1	0.5	21.8	5.3	0.7	-	6.0	6.6	0.1	-	6.7
Nagaland	0.9	0.2	-	1.1	0.6	0.1	-	0.6	0.5	-	-	0.5
Odisha	74.6	32.4	16.0	123.0	74.4	38.3	18.2	130.9	75.3	36.1	14.3	125.8
Sikkim	-	-	-	-	-	-	-	-	-	-	-	-
Tripura	17.9	11.5	10.8	40.3	14.9	12.7	5.3	33.0	23.2	12.8	3.7	39.8
West Bengal	78.2	45.6	34.5	158.3	79.3	51.3	41.4	172.0	78.9	44.1	29.8	152.8
North	147.3	44.0	7.1	198.4	154.3	49.7	8.6	212.7	149.0	43.4	7.2	199.6
Haryana	161.6	45.8	5.7	213.1	167.3	48.1	5.9	221.3	159.0	41.8	6.8	207.6
Himachal Pradesh	42.9	11.6	11.1	65.7	42.3	12.6	11.5	66.4	42.9	10.3	9.6	62.8
Jammu & Kashmir	46.6	15.4	10.3	72.4	104.7	34.5	26.5	165.6	78.4	19.8	12.0	110.2
Punjab	191.4	46.3	5.5	243.2	190.8	48.8	7.1	246.7	200.8	45.4	7.7	253.9
Uttar Pradesh	139.3	45.7	7.7	192.6	147.6	53.1	8.9	209.6	139.5	46.1	6.9	192.5
Uttarakhand	120.9	30.0	8.6	159.5	117.8	28.3	8.2	154.3	102.2	23.9	6.6	132.7
Chandigarh	-	-	-	-	-	-	-	-	-	-	-	-
Delhi	208.1	34.7	5.6	248.5	181.5	28.8	5.1	215.4	217.1	29.2	2.7	249.0
South	103.0	47.6	24.0	174.5	119.2	58.9	30.4	208.5	115.9	53.2	23.5	192.6
Andhra Pradesh	134.6	67.3	29.1	231.0	156.4	84.9	36.7	278.0	138.5	69.5	25.3	233.2
Telangana	170.9	64.0	21.2	256.2	202.6	82.2	30.0	314.8	191.3	73.4	18.6	283.4
Karnataka	73.6	40.5	20.5	134.5	85.3	49.8	25.7	160.7	89.5	47.0	22.1	158.5
Kerala	30.6	13.1	23.9	67.6	34.0	14.7	29.0	77.8	30.2	12.3	21.7	64.2
Tamil Nadu	98.0	39.3	28.8	166.1	108.5	45.3	34.8	188.6	113.8	46.2	30.2	190.1
Puducherry	249.3	67.3	33.5	350.0	311.4	79.0	57.0	447.4	311.8	71.3	38.2	421.3
A & N Islands	-	-	-	-	3.2	-	-	3.2	7.1	9.8	-	16.8
Lakshadweep	-	-	-	-	-	-	-	-	-	-	-	-
West	66.6	30.9	8.6	106.1	70.4	36.6	10.3	117.3	65.1	31.5	9.3	105.9
Gujarat	106.0	31.2	9.3	146.5	110.3	38.5	11.2	160.0	99.3	31.3	8.3	139.0
Madhya Pradesh	59.2	31.6	4.1	94.9	61.3	36.1	5.0	102.3	57.6	31.5	4.7	93.8
Chhattisgarh	78.4	39.3	10.8	128.6	91.6	47.4	13.0	152.0	79.3	40.9	12.0	132.2
Maharashtra	81.6	46.9	25.2	153.7	88.8	58.9	30.6	178.4	83.3	52.9	27.7	163.8
Rajasthan	44.2	17.4	0.8	62.4	45.2	18.5	0.9	64.6	42.4	15.1	1.1	58.6
Goa	9.1	6.0	6.9	22.0	12.2	6.3	6.6	25.1	10.2	5.0	6.3	21.5
Daman & Diu	-	-	-	-	-	-	-	-	-	-	-	-
D & N Haveli	16.6	10.6	-	27.1	26.1	17.6	-	43.7	14.6	6.5	-	21.1
All India	94.0	37.7	12.8	144.6	100.4	44.2	15.5	160.1	95.7	38.5	12.4	146.7

Note: 1. Consumption of plant nutrients per hectare have been worked out on the basis of latest gross cropped area available for 2019-20.
2. Due to rounding of figures, totals may not exactly tally.

under oilseeds increased by 3 thousand ha during the season.

Sale Points

Total number of fertilizer sale points was 2,768 at the end of 2021-22. Out of these sale points, share of private channel was 95% and the balance 5% was of cooperative and other institutional channels.

ii) Bihar

Fertilizer Consumption

Total fertilizer nutrient consumption in Bihar at 1.613 million MT in 2021-22 registered a sharp decline of 15.6% over the previous year. Consumption of total fertilizer nutrients declined in *kharif* 2021 by 15.1% and in *rabi* 2021-22 by 15.9% over the corresponding

Zone/State	2019-20			2020-21			2021-22 (P)		
	N	P ₂ O ₅	K ₂ O	N	P ₂ O ₅	K ₂ O	N	P ₂ O ₅	K ₂ O
East	4.2	1.8	1	3.8	1.7	1	5.2	2.1	1
Arunachal Pradesh	-	-	-	-	-	-	-	-	-
Assam	3.9	1.1	1	3.6	1.1	1	5.1	1.4	1
Bihar	7.6	2.6	1	7.7	2.7	1	11.6	3.5	1
Jharkhand	28.7	9.8	1	25.2	10.2	1	21.3	8.0	1
Manipur	13.1	3.8	1	6.7	1.6	1	68.5	18.9	1
Meghalaya	-	-	-	-	-	-	-	-	-
Mizoram	41.9	2.3	1	-	-	-	-	-	-
Nagaland	-	-	-	-	-	-	-	-	-
Odisha	4.6	2.0	1	4.1	2.1	1	5.3	2.5	1
Sikkim	-	-	-	-	-	-	-	-	-
Tripura	1.7	1.1	1	2.8	2.4	1	6.2	3.4	1
West Bengal	2.3	1.3	1	1.9	1.2	1	2.6	1.5	1
North	20.6	6.2	1	18.0	5.8	1	20.6	6.0	1
Haryana	28.2	8.0	1	28.2	8.1	1	23.2	6.1	1
Himachal Pradesh	3.9	1.0	1	3.7	1.1	1	4.5	1.1	1
Jammu & Kashmir	4.5	1.5	1	4.0	1.3	1	6.5	1.7	1
Punjab	34.8	8.4	1	27.0	6.9	1	26.2	5.9	1
Uttar Pradesh	18.2	6.0	1	16.6	6.0	1	20.1	6.6	1
Uttarakhand	14.1	3.5	1	14.4	3.5	1	15.5	3.6	1
Delhi	37.2	6.2	1	35.7	5.7	1	80.1	10.8	1
South	4.3	2.0	1	3.9	1.9	1	4.9	2.3	1
Andhra Pradesh	4.6	2.3	1	4.3	2.3	1	5.5	2.8	1
Telangana	8.1	3.0	1	6.8	2.7	1	10.3	3.9	1
Karnataka	3.6	2.0	1	3.3	1.9	1	4.1	2.1	1
Kerala	1.3	0.5	1	1.2	0.5	1	1.4	0.6	1
Tamil Nadu	3.4	1.4	1	3.1	1.3	1	3.8	1.5	1
Puducherry	7.5	2.0	1	5.5	1.4	1	8.2	1.9	1
A & N Islands	-	-	-	-	-	-	-	-	-
West	7.8	3.6	1	6.8	3.5	1	7.0	3.4	1
Gujarat	11.4	3.4	1	9.9	3.4	1	11.9	3.8	1
Madhya Pradesh	14.4	7.7	1	12.4	7.3	1	12.3	6.7	1
Chhattisgarh	7.2	3.6	1	7.0	3.6	1	6.6	3.4	1
Maharashtra	3.2	1.9	1	2.9	1.9	1	3.0	1.9	1
Rajasthan	58.1	22.9	1	50.4	20.7	1	38.7	13.8	1
Goa	1.3	0.9	1	1.9	1.0	1	1.6	0.8	1
Daman & Diu	-	-	-	-	-	-	-	-	-
D & N Haveli	-	-	-	-	-	-	-	-	-
All India	7.3	2.9	1	6.5	2.8	1	7.7	3.1	1

(P) = Provisional.

Fertilizers	Grade	Sale	
		2020-21	2021-22 (P)
I. Straight nitrogenous			
1. Ammonium sulphate	20.6% N	884.7	807.9
2. Urea	46 % N	35,042.5	34,180.1
3. Calcium ammonium nitrate	25 % N	2.3	-
4. Ammonium chloride	25 % N	10.9	30.5
II. Straight phosphatic			
1. Single superphosphate	16 % P ₂ O ₅	4,488.8	5,681.4
2. Triple superphosphate	46 % P ₂ O ₅	-	-
3. Rock phosphate	20 % P ₂ O ₅	33.1	35.0
III. Straight potassic			
1. Muriate of potash	60 % K ₂ O	3,424.9	2,456.5
2. Sulphate of potash	50 % K ₂ O	-	-
IV. Complex			
Diammonium phosphate	18-46-0	11,911.5	9,272.0
Mono Ammonium Phosphate	11-52-0	-	-
Total NP/NPK Complex fert. (other than DAP/MAP)		11,811.0	11,478.9
Total Product		67,609.7	63,942.3

* DBT sale = Sale by retailers through PoS machines to farmers.

seasons of the previous year. *Kharif:rabi* share in consumption of total nutrients remained unchanged at 40:60 during 2021-22.

Consumption of N at 1.159 million MT, P_2O_5 at 0.354 million MT and K_2O at 0.100 million MT during 2021-22 declined by 9.8%, 22.7% and 40.2%, respectively, over 2020-21. NPK use ratio widened from 7.7:2.7:1 during 2020-21 to 11.6:3.5:1 during 2021-22. Consumption of total nutrients per hectare of gross cropped area declined from 261.9 kg during 2020-21 to 221.1 kg during 2021-22.

Weather and Crop Situation

The state received normal rains during Southwest monsoon 2021 at 1044 mm. Out of 38 districts in the state, 6, 26 and 6 districts received excess, normal and deficient rains, respectively, during the season. During *kharif 2021*, sown area under rice, pulses and oilseeds increased by 65, 14 and 11 thousand ha, respectively, over *kharif 2020*. However, sown area under coarse cereals, sugarcane and jute & mesta declined by 24, 4 and 3 thousand ha, respectively, during the season.

During post-monsoon 2021, state received excess rains at 202 mm. Out of 38 districts, as many as 36 received large excess rains and 2 received excess rains during the period. During *rabi 2021-22*, area under wheat and coarse cereals increased by 122 and 67 thousand ha, respectively, over *rabi 2020-21*. However, sown area under pulses and oilseeds declined by 74 and 8 thousand ha, respectively, during the season.

Sale Points

Total number of fertilizer sale points was 23,317 at the end of 2021-22. Out of these sale points, share of private channel was 86% and the balance 14% was of cooperative and other institutional channels.

iii) Jharkhand

Fertilizer Consumption

Total consumption of fertilizer nutrients at 201.8 thousand MT during 2021-22, witnessed a decline of 3.0% over the previous year. Consumption fertilizer nutrients during *kharif 2021* was 12.7% lower over *kharif 2020* but in *rabi 2021-22*, it was higher by 18.9% over the corresponding seasons of the previous year. Accordingly, *kharif:rabi* share in total fertilizer consumption changed from 69:31 during 2020-21 to 62:38 during 2021-22.

On nutrient basis, the consumption of N at 142 thousand MT and P_2O_5 at 53.2 thousand MT during 2021-22 registered decline of 1.6% and 8.6%, respectively, over 2020-21. However, consumption of K_2O at 6.7 thousand MT recorded increase of 16.2% during the period. NPK use ratio changed from

25.2:10.2:1 during 2020-21 to 21.3:8.0:1 during 2021-22. Per hectare consumption of total fertilizer nutrients reduced from 118.3 kg during 2020-21 to 114.7 kg during 2021-22.

Weather and Crop Situation

Rainfall received during Southwest monsoon 2021 at 1043 mm was normal. Out of 24 districts, 16 received normal rains, 3 received excess rains and 5 received deficient rainfall during the season. During *kharif 2021*, coverage of sown area under rice, pulses and coarse cereals increased by 157, 85 and 6 thousand ha, respectively, over *kharif 2020*. However, sown area under oilseeds was down by 10 thousand ha during the season.

During post-monsoon, rainfall was excess at 159 mm. Out of 24 districts, 5 received normal rains, 18 received excess to large excess and 1 received deficient rains during the season. Sown area under wheat, pulses and oilseeds declined by 5, 11 and 18 thousand ha, respectively, during *rabi 2021-22* over *rabi 2020-21*.

Sale Points

Total number of fertilizer sale points was 4,690 at the end of 2021-22. Out of these sale points, share of private channel was 86% and the balance 14% was of cooperative and other institutional channels.

iv) Odisha

Fertilizer Consumption

Consumption of total fertilizer nutrients at 0.587 million MT during 2021-22 witnessed a decline of 3.9% over 2020-21. During *kharif 2021*, total fertilizer nutrient declined by 5.7% whereas in *rabi 2021-22*, it increased by 0.9% over the corresponding seasons of the previous year. *Kharif:rabi* share in total fertilizer consumption marginally changed from 72:28 in 2020-21 to 71:29 in 2021-22.

Consumption of N at 0.352 million MT registered an increase of 1.3%, whereas P_2O_5 at 0.169 million MT and K_2O at 0.067 million MT showed decline of 5.7% and 21.3%, respectively, in 2021-22 over 2020-21. NPK use ratio changed from 4.1:2.1:1 in 2020-21 to 5.3:2.5:1 during 2021-22. Per hectare consumption of fertilizer nutrients reduced from 130.9 kg in 2020-21 to 125.8 kg in 2021-22.

Weather and Crop Situation

The cumulative rainfall received in the state during Southwest monsoon 2021 was normal at 1046 mm. Out of 30 districts in the state, 22 received normal rains, 2 received excess rains and 6 received deficient rains during the season. During *kharif 2021*, sown area under rice, pulses and oilseeds declined by 208, 65 and 2 thousand ha, respectively, over *kharif 2020*. However, sown area under coarse cereals, sugarcane

and cotton increased by 34, 3 and 41 thousand ha, respectively, during the season.

During the post-monsoon season, actual rainfall at 183 mm was excess. Out of 30 districts in the state, 8 received normal rains, 20 received excess to large excess rains and 2 received deficient rains during the season. During *rabi* 2021-22, sown area under rice, pulses and oilseeds was down by 75, 222 and 6 thousand ha, respectively, over *rabi* 2020-21. However, sown area under coarse cereals increased by 6 thousand ha during the season.

Sale Points

Total number of fertilizer sale points was 11,383 at the end of 2021-22. Out of these sale points, share of private channel was 76% and the balance 24% was of cooperative and other institutional channels.

v) West Bengal

Fertilizer Consumption

Total fertilizer nutrient consumption in West Bengal declined by 11.2%, from 1.738 million MT during 2020-21 to 1.543 million MT during 2021-22. Total nutrient consumption declined in both the seasons. It declined by 15.8% and 8.2% in *kharif* 2021 and *rabi* 2021-22, respectively, over the corresponding seasons of the previous year. *Kharif:rabi* share in total fertilizer consumption changed from 40:60 during 2020-21 to 38:62 during 2021-22.

Consumption of N at 0.796 million MT, P_2O_5 at 0.446 million MT and K_2O at 0.301 million MT during 2021-22 registered decline of 0.5%, 14.1% and 28.1%, respectively, over 2020-21. NPK use ratio changed from 1.9:1.2:1 during 2020-21 to 2.6:1.5:1 during 2021-22. Per hectare use of total fertilizer nutrients declined from 172 kg to 152.8 kg during the period.

Weather and Crop Situation

Rainfall received during Southwest monsoon 2021 was normal at 1794 mm in Sub-Himalayan West Bengal sub-division. Gangetic West Bengal received excess rains at 1549 mm. Out of 19 districts in the state, 7 received normal rains, 9 received excess rains and 3 received deficient rains during the season. During *kharif* 2021, sown area under rice and oilseeds increased by 32 and 2 thousand ha, respectively, over *kharif* 2020. However, area under pulses, coarse cereals, sugarcane and jute & mesta was down by 18, 5, 2 and 5 thousand ha, respectively, during the season.

During post-monsoon, the cumulative rainfall was large excess at 291 mm in Sub-Himalayan West Bengal and 277 mm in Gangetic West Bengal sub-divisions. Out of 19 districts, 1 received normal rains, 16 received excess to large excess rains and 2 received deficient rains during the season. During *rabi* 2021-22, sown area coverage under coarse cereals and oilseeds

increased by 5 and 21 thousand ha, respectively, over *rabi* 2020-21. However, sown area under wheat, rice and pulses declined by 5, 35 and 17 thousand ha, respectively, during the season.

Sale Points

Total number of fertilizer sale points was 25,480 at the end of 2021-22. Out of these sale points, share of private channel was 92% and the balance 8% was of cooperative and other institutional channels.

II. NORTH ZONE

i) Haryana

Fertilizer Consumption

Consumption of total fertilizer nutrients in Haryana declined by 6.2%, from a total of 1.465 million MT during 2020-21 to 1.374 million MT during 2021-22. Total nutrient consumption increased in *kharif* 2021 by 3.7% but declined in *rabi* 2021-22 by 12.8% over the corresponding seasons of the previous year. Accordingly, *kharif:rabi* share in total fertilizer nutrient consumption changed from 40:60 during 2020-21 to 45:55 during 2021-22.

On nutrient basis, consumption of N at 1.052 million MT and P_2O_5 at 0.276 million MT during 2021-22 declined by 4.9% and 13.2%, respectively, over 2020-21. However, consumption of K_2O at 0.045 million MT increased by 15.6% during the period. NPK use ratio changed from 28.2:8.1:1 during 2020-21 to 23.2:6.1:1 during 2021-22. Per hectare consumption of total fertilizer nutrients reduced from 221.3 kg during 2020-21 to 207.6 kg during 2021-22.

Weather and Crop Situation

Overall rainfall received during the Southwest monsoon 2021 was excess at 577 mm. Out of 22 districts in the state, 6 received normal rains, 14 received excess to large excess rains and 2 had deficient rains during the season. During *kharif* 2021, sown area under rice, pulses, oilseeds, sugarcane and cotton increased by 52, 59, 8, 6 and 37 thousand ha, respectively, over *kharif* 2020. However, sown area under coarse cereals declined by 190 thousand ha during the season.

During post-monsoon, total rains received was excess at 28 mm. Out of 22 districts, 4 received normal rains, 13 received excess to large excess rains and 5 districts received deficient to large deficient rains during the season. During *rabi* 2021-22, sown area under wheat, pulses and coarse cereals declined by 134, 5 and 7 thousand ha, respectively, over *rabi* 2020-21. However, sown area under oilseeds increased by 157 thousand ha during the season.

Sale Points

Total number of fertilizer sale points was 8,550 at the end of 2021-22. Out of these sale points, share of private

channel was 76% and in cooperative and other institutional channels, it was 24%.

ii) Himachal Pradesh

Fertilizer Consumption

Consumption of total fertilizer nutrients in Himachal Pradesh declined by 5.5% in 2021-22 over the previous year. Total fertilizer nutrient consumption was 56 thousand MT during 2021-22 compared to 59.3 thousand MT in the previous year. Total consumption of fertilizer nutrients declined by 8.2% in *kharif* 2021 and 3.3% in *rabi* 2021-22 over the respective seasons of the previous year. *Kharif:rabi* share in total fertilizer consumption changed marginally from 46:54 during 2020-21 to 44:56 during 2021-22.

Nutrient-wise breakup shows increase in N consumption and decline in P_2O_5 and K_2O consumption during 2021-22 over 2020-21. Consumption of N at 38.3 thousand MT increased by 1.4% whereas P_2O_5 at 9.2 thousand MT and K_2O at 8.5 thousand MT declined by 18.5% and 16.7%, respectively, during 2021-22 over 2020-21. NPK use ratio changed from 3.7:1.1:1 during 2020-21 to 4.5:1.1:1 during 2021-22. Per hectare consumption of total fertilizer nutrients reduced from 66.4 kg in 2020-21 to 62.8 kg in 2021-22.

Weather and Crop Situation

The state received 690 mm rainfall during Southwest monsoon 2021 which was normal. Out of 12 districts in the state, 9 received normal rains, 1 received excess rains and 2 received deficient to large deficient rains during the season. During *kharif* 2021, sown area under rice increased by 1 thousand ha over *kharif* 2020. However, sown area under pulses, coarse cereals and oilseeds declined by 9, 2 and 1 thousand ha, respectively, during the season.

During post-monsoon, the state received normal rainfall at 75 mm. Out of 12 districts, 4 received normal rains, 3 received excess rains and 5 received deficient rains during the period. During *rabi* 2021-22, sown area under coarse cereals and oilseeds increased by 1 thousand ha each over *rabi* 2020-21.

Sale Points

Total number of fertilizer sale points was 2,143 at the end of 2021-22. Out of these sale points, share of private channel was 25% and in cooperative and other institutional channels, it was 75%.

iii) Jammu & Kashmir

Fertilizer Consumption

Consumption of total fertilizer nutrients in the state witnessed a sharp decline of 33.5%, from a total of 180.5 thousand MT during 2020-21 to 120.1 thousand MT during 2021-22. Total fertilizer nutrient

consumption declined in both the seasons. Consumption of total nutrients registered decline of 45.6% during *kharif* 2021 and 2.1% during *rabi* 2021-22 over the corresponding seasons of the previous year. Accordingly, *kharif:rabi* share changed from 72:28 during 2020-21 to 59:41 during 2021-22.

Consumption of N at 85.4 thousand MT, P_2O_5 at 21.6 thousand MT and K_2O at 13 thousand MT during 2021-22 showed sharp decline of 25.1%, 42.4% and 54.8%, respectively, over 2020-21. NPK use ratio changed from 4.0:1.3:1 during 2020-21 to 6.5:1.7:1 during 2021-22. Per hectare consumption of total fertilizer nutrients reduced from 165.6 kg during 2020-21 to 110.2 kg during 2021-22.

Weather and Crop Situation

During Southwest monsoon 2021, Jammu & Kashmir and Ladakh sub-division received deficient rains at 402 mm. Out of 20 districts in Jammu & Kashmir, 7 received normal rains, 1 received excess rains and 12 received deficient to large deficient rains during the season. During *kharif* 2021, sown area under rice, pulses and coarse cereals increased by 2, 1 and 6 thousand ha, respectively, over *kharif* 2020. However, area under oilseeds declined 2 thousand ha during the period.

During post-monsoon season, Jammu & Kashmir and Ladakh sub-division received normal rains at 122 mm. Out of 20 districts in Jammu & Kashmir, 7 received normal rains, 7 received excess to large excess rains and 6 received deficient and large deficient rains during the season. During *rabi* 2021-22, sown area under pulses, coarse cereals and oilseeds increased by 12, 1 and 2 thousand ha, respectively, over *rabi* 2020-21. However, sown area under wheat was down by 3 thousand ha during the period.

Sale Points

Total number of fertilizer sale points was 4,712 at the end of 2021-22. Out of these sale points, share of private channel was 91% and balance 9% in cooperative and other institutional channels.

iv) Punjab

Fertilizer Consumption

Consumption of total fertilizer nutrients in Punjab at 1.990 million MT during 2021-22 registered an increase of 2.9% over the previous year. Consumption of total fertilizer nutrients increased in *kharif* 2021 by 10.1% but declined in *rabi* 2021-22 by 2.7% over the corresponding seasons of the previous year. *Kharif:rabi* share in total consumption of fertilizer nutrients changed from 44:56 during 2020-21 to 47:53 during 2021-22.

Nutrient-wise analysis shows that consumption of N at 1.574 million MT and K_2O at 0.060 million MT

during 2021-22 increased by 5.3% and 8.2% respectively, over 2020-21. However, consumption of P_2O_5 at 0.356 million MT declined by 7% during the period. NPK use ratio changed from 27.0:6.9:1 during 2020-21 to 26.2:5.9:1 in 2021-22. Per hectare consumption of fertilizer nutrients increased from 246.7 kg during 2020-21 to 253.9 kg during 2021-22.

Weather and Crop Situation

The state received normal rainfall at 437 mm during Southwest monsoon 2021. Out of 22 districts in the state, 12 received normal rains, 5 received excess to large excess rains and 5 received deficient rains during the season. Sown area under rice, coarse cereals and sugarcane increased during *kharif 2021* by 49, 5 and 3 thousand ha, respectively, over *kharif 2020*. However, sown area under pulses, oilseeds and cotton declined by 7, 5 and 12 thousand ha, respectively, during the season.

During post-monsoon, the state received excess rains at 35 mm. Out of 22 districts, 7 received normal rains, 12 received excess to large excess rains and 3 districts had deficient rains during the period. During *rabi 2021-22*, sown area under pulses, coarse cereals and oilseeds was up by 2, 2 and 21 thousand ha, respectively, over *rabi 2020-21*. However, sown area under wheat was down by 20 thousand ha during the season.

Sale Points

Total number of fertilizer sale points was 10,296 at the end of 2021-22. Out of these sale points, share of private channel was 62% and it was 38% in cooperative and other institutional channels.

v) Uttar Pradesh

Fertilizer Consumption

Uttar Pradesh is the largest fertilizer consuming state in the country having a share of about 17% of All-India consumption of fertilizer nutrients. During 2021-22, consumption of total fertilizer nutrients in the state marked a negative growth of 8.2% over the previous year. Total consumption of fertilizer nutrients declined from 5.629 million MT during 2020-21 to 5.169 million MT during 2021-22. Consumption of fertilizer nutrients declined in both the seasons. During *kharif 2021*, it reduced by 16.1% and in *rabi 2021-22* by 1.7% over the corresponding seasons of the previous year. Accordingly, *kharif:rabi* share in total fertilizer nutrient consumption changed from 45:55 during 2020-21 to 41:59 during 2021-22.

On nutrient basis, consumption of N at 3.746 million MT, P_2O_5 at 1.237 million MT and K_2O at 0.187 million MT during 2021-22 witnessed decline of 5.5%, 13.3% and 21.8%, respectively, over 2020-21. NPK use ratio widened from 16.6:6.0:1 during 2020-21 to 20.1:6.6:1 during 2021-22. Per hectare consumption of fertilizer

nutrients reduced from 209.6 kg to 192.5 kg during the period.

Weather and Crop Situation

During the Southwest monsoon 2021, rainfall was normal in East Uttar Pradesh sub-division at 868 mm and deficient in West Uttar Pradesh sub-division at 573 mm. Out of 75 districts in the state, rainfall was normal in 36 districts and excess to large excess in 13 districts. Balance 26 districts received deficient rains during the season. During *kharif 2021*, sown area under rice, pulses, coarse cereals, oilseeds and sugarcane increased by 41, 26, 48, 38 and 32 thousand ha, respectively, over *kharif 2020*.

During post-monsoon, rainfall was in large excess in both the sub-divisions, *i.e.* East Uttar Pradesh sub-division and West Uttar Pradesh sub-division at 94 mm each. Out of 75 districts, 6 received normal rains, 61 received excess to large excess rains, 7 received deficient to large deficient rains and one district did not receive any rain during the season. During *rabi 2021-22*, sown area under pulses, coarse cereals and oilseeds increased by 18, 4 and 186 thousand ha, respectively, over *rabi 2020-21*. However, sown area under wheat was down by 181 thousand ha during the period.

Sale Points

Total number of fertilizer sale points was 61,394 at the end of 2021-22. Out of these sale points, share of private channel was 81% and balance 19% in cooperative and other institutional channels.

vi) Uttarakhand

Fertilizer Consumption

Total consumption of fertilizer nutrients declined in the state with two consecutive years. Consumption of total fertilizer nutrients at 135.9 thousand MT during 2021-22 reduced by 14% over 2020-21. Consumption of fertilizer nutrients declined in both the seasons. During *kharif 2021*, it declined by 17.1% and in *rabi 2021-22* by 10.7% over the corresponding seasons of the previous year. *Kharif:rabi* share in total fertilizer consumption changed from 52:48 during 2020-21 to 50:50 during 2021-22.

On nutrient basis, consumption of all the three nutrients showed negative growth during 2021-22 over 2020-21. Consumption of N at 104.7 thousand MT, P_2O_5 at 24.4 thousand MT and K_2O at 6.8 thousand MT during 2021-22 declined by 13.2%, 15.7% and 19.2%, respectively, over 2020-21. NPK use ratio changed from 14.4:3.5:1 during 2020-21 to 15.5:3.6:1 during 2021-22. Per hectare consumption of total fertilizer nutrients reduced from 154.3 kg to 132.7 kg during the period.

Weather and Crop Situation

The state received 1153 mm rains during Southwest

monsoon 2021, which was normal. Out of 13 districts in the state, 8 received normal rains, 2 received large excess rains and 3 received deficient rains during the season. During *khariif 2021*, sown area under rice, pulses and sugarcane increased by 1, 3 and 4 thousand ha, respectively, over *khariif 2020*. However, sown area under coarse cereals and oilseeds declined by 4 and 1 thousand ha, respectively, during the period.

During the post-monsoon, the state received 220 mm rains which was large excess. Out of 13 districts, 1 district received normal rains and 12 districts received excess to large excess rains during the period. During *rabi 2021-22*, sown area under wheat and pulses declined by 5 and 1 thousand ha, respectively, over *rabi 2020-21*. However, sown area under coarse cereals increased by 1 thousand ha during the period.

Sale Points

Total number of fertilizer sale points was 1,104 at the end of 2021-22. Out of these sale points, share of private channel and cooperative & other institutional channels accounts about 50% each.

III. SOUTH ZONE

i) Andhra Pradesh

Fertilizer Consumption

Consumption of total fertilizer nutrients in Andhra Pradesh witnessed a sharp decline of 16.1%, from 2.026 million MT during 2020-21 to 1.700 million MT during 2021-22. Total nutrient consumption declined in both the seasons. During *khariif 2021*, consumption of fertilizer nutrients declined by 17.6% and in *rabi 2021-22*, it fell by 14.9% over the corresponding seasons of the previous year. However, *khariif:rabi* share in total consumption of fertilizer nutrients remained unchanged at 44:56 during 2021-22.

During 2021-22, consumption of N at 1.009 million MT, P_2O_5 at 0.507 million MT and K_2O at 0.184 million MT registered sharp decline of 11.5%, 18.1% and 31.2%, respectively, over 2020-21. NPK use ratio changed from 4.3:2.3:1 during 2020-21 to 5.5:2.8:1 in 2021-22. Per hectare consumption of total nutrients reduced from 278 kg to 233.2 kg during the period.

Weather and Crop Situation

Rainfall during Southwest monsoon 2021 was excess in Coastal Andhra Pradesh sub-division at 704 mm and normal in Rayalaseema sub-division at 488 mm. Out of 13 districts in the state, 6 received normal rains and 7 received excess rains during the season. Despite normal to excess rains during the southwest monsoon, the sown area under rice, pulses, oilseeds, sugarcane, jute & mesta and cotton declined by 20, 42, 89, 47, 2 and 49 thousand ha, respectively, during *khariif 2021* over *khariif 2020*.

During post-monsoon, rainfall was normal at 361 mm in Coastal Andhra Pradesh and large excess at 470 mm in Rayalaseema sub-divisions. Out of 13 districts, 5 received normal rains, 6 received excess to large excess rains and 2 received deficient rains during the period. During *rabi 2021-22*, sown area under coarse cereal and oilseeds increased by 5 and 4 thousand ha, respectively, over *rabi 2020-21*. However, sown area under rice and pulses declined by 40 and 5 thousand ha, respectively, during the period.

Sale Points

Total number of fertilizer sale points was 11,110 at the end of 2021-22. Out of these sale points, share of private channel was 78% and remaining 22% in cooperative and institutional channels.

ii) Karnataka

Fertilizer Consumption

Total fertilizer nutrient consumption registered a decline of 1.4%, from 2.223 million MT during 2020-21 to 2.192 million MT during 2021-22. On seasonal basis, consumption of total nutrients increased by 0.9% in *khariif 2021* but declined by 5.3% in *rabi 2021-22* over the corresponding seasons of the previous year. *Khariif:rabi* share in total consumption slightly changed from 63:37 during 2020-21 to 64:36 during 2021-22.

Consumption of N at 1.238 million MT recorded an increase of 4.9% during 2021-22 over 2020-21. However, consumption of P_2O_5 at 0.649 million MT and K_2O at 0.305 million MT registered decline 5.6% and 14%, respectively, over the previous year. NPK use ratio changed from 3.3:1.9:1 during 2020-21 to 4.1:2.1:1 during 2021-22. Per hectare consumption of total fertilizer nutrients reduced from 160.7 kg to 158.5 kg during the period.

Weather and Crop Situation

During Southwest monsoon 2021, rainfall was normal in Coastal Karnataka at 2785 mm and South Interior Karnataka sub-divisions at 699 mm. It was excess in North Interior Karnataka sub-division at 607 mm. Out of 30 districts in the state, rainfall was normal in 18 districts, excess to large excess in 10 districts and deficient in 2 districts during the season. During *khariif 2021*, sown area under rice, pulses, coarse cereals, oilseeds, sugarcane and cotton increased by 79, 371, 182, 98, 66 and 89 thousand ha, respectively, over *khariif 2020*.

During post-monsoon, rainfall was excess in North Interior Karnataka sub-division at 173 mm and large excess in Coastal Karnataka and South Interior Karnataka sub-divisions at 555 mm and 502 mm, respectively. Out of 30 districts, rainfall was normal in 3 districts, excess to large excess in 25 districts and deficient in 2 districts during the period. During *rabi 2021-22*, sown area under wheat, rice, pulses and

coarse cereals declined by 23, 1, 68 and 26 thousand ha, respectively, over *rabi* 2020-21. However, sown area under oilseeds increased by 28 thousand ha during the period.

Sale Points

Total number of fertilizer sale points was 13,546 at the end of 2021-22. Out of these sale points, share of private channel was 75% and remaining 25% in cooperative and institutional channels.

(iii) Kerala

Fertilizer Consumption

Total fertilizer nutrient consumption at 166.1 thousand MT during 2021-22 in the state registered a decline of 17.4% over the previous year. Negative growth in consumption was reported both in *kharif* as well as *rabi* seasons. During *kharif* 2021, total nutrient consumption declined by 7% and in *rabi* 2021-22 by 28.1% over the respective seasons of the previous year. *Kharif:rabi* share in total fertilizer nutrient consumption changed from 51:49 during 2020-21 to 57:43 during 2021-22.

On nutrient basis, consumption of N at 78.3 thousand MT, P_2O_5 at 31.7 thousand MT and K_2O at 56.1 thousand MT during 2021-22 witnessed decline of 11.2%, 16.4% and 25.2%, respectively, over the previous year. NPK use ratio changed from 1.2:0.5:1 during 2020-21 to 1.4:0.6:1 during 2021-22. Per hectare consumption of total fertilizer nutrients reduced from 77.8 kg to 64.2 kg during the period.

Weather and Crop Situation

The state received normal rains during Southwest monsoon 2021 at 1719 mm. Out of 14 districts in the state, 9 received normal rainfall and 5 received deficient rains during the season. During *kharif* 2021, sown area under rice was lower by 9 thousand ha over *kharif* 2020.

During post-monsoon, state received large excess rains at 1027 mm. Out of 14 districts, 1 received excess rains and 13 received large excess rains during the season. During *rabi* 2021-22, area sown under rice was higher by 14 thousand ha over *rabi* 2020-21.

Sale Points

Total number of fertilizer sale points was 3,052 at the end of 2021-22. Out of these sale points, share of private and cooperative & institutional channels was 55% and 45%, respectively.

iv) Tamil Nadu

Fertilizer Consumption

Consumption of total fertilizer nutrients in Tamil Nadu during 2021-22 registered a positive growth of 0.8% over the previous year. Total nutrient consumption increased from 1.121 million MT during

2020-21 to 1.130 million MT during 2021-22. There was sharp increase in consumption during *kharif* 2021 but it declined in *rabi* season. During *kharif* 2021, total fertilizer nutrient consumption increased by 11.6% whereas it declined by 7.6% during *rabi* 2021-22 over the corresponding seasons of the previous year. Accordingly, *kharif:rabi* share in total fertilizer consumption changed from 44:56 during 2020-21 to 48:52 during 2021-22.

Consumption of N at 0.676 million MT and P_2O_5 at 0.274 million MT during 2021-22 recorded increase of 4.8% and 1.8%, respectively, over 2020-21. However, consumption of K_2O at 0.179 million MT witnessed a decline of 13.2% during the period. NPK use ratio changed from 3.1:1.3:1 during 2020-21 to 3.8:1.5:1 during 2021-22. Per hectare consumption of total fertilizer nutrients increased from 188.6 kg to 190.1 kg during the period.

Weather and Crop Situation

During Southwest monsoon 2021, the state received normal rains at 393 mm. Out of 38 districts in the state, 23 districts received normal rains and 15 received excess to large excess rains during the season. During *kharif* 2021, sown area under rice, coarse cereals and oilseeds increased by 102, 19 and 40 thousand ha, respectively, over *kharif* 2020. However, sown area under pulses and sugarcane declined by 12 and 86 thousand ha, respectively, during the period.

During post-monsoon, the state received excess rains at 714 mm. Out of 38 districts, 2 districts received normal rains and remaining 36 received excess to large excess rains during the season. During *rabi* 2021-22, sown area under rice, pulses and coarse cereals increased by 103, 20 and 25 thousand ha, respectively, over *rabi* 2020-21. However, sown area under oilseeds was down by 19 thousand ha during the period.

Sale Points

Total number of fertilizer sale points was 13,745 at the end of 2021-22. Out of these sale points, share of private channel was 67% and remaining 33% belonged to cooperative and institutional channels.

v) Telangana

Fertilizer Consumption

Total fertilizer nutrients consumption in Telangana showed a negative growth of 10% during 2021-22 over 2020-21. Total nutrient consumption declined from 1.818 million MT during 2020-21 to 1.636 million MT during 2021-22. Consumption of total nutrients declined by 12% and 6.9% in *kharif* 2021 and *rabi* 2021-22, respectively, over the corresponding seasons of the previous year. *Kharif:rabi* share in total consumption changed marginally from 60:40 during 2020-21 to 59:41 during 2021-22.

Consumption of N at 1.105 million MT, P_2O_5 at 0.424 million MT and K_2O at 0.108 million MT during 2021-22 registered decline of 5.5%, 10.7% and 37.8%, respectively, over the previous year. NPK use ratio widened from 6.8:2.7:1 during 2020-21 to 10.3:3.9:1 during 2021-22. Per hectare consumption of total fertilizer nutrients reduced from 314.8 kg to 283.4 kg during the period.

Weather and Crop Situation

The state received excess rains at 1044 mm during Southwest monsoon 2021. Out of 33 districts, 8 received normal rains, 15 received excess and 10 districts received large excess rains during the monsoon season. During *kharif 2021*, sown area under rice and cotton increased by 901 and 229 thousand ha, respectively, over *kharif 2020*. However, sown area under pulses, coarse cereals, oilseeds and sugarcane declined by 41, 164, 89 and 5 thousand ha, respectively, during the period.

Rainfall received during post-monsoon was deficient at 94 mm only. Out of 33 districts, 10 districts received normal rains, 2 received excess and 21 received deficient to large deficient rains during the season. During *rabi 2021-22*, sown area under pulses and oilseeds increased by 22 and 49 thousand ha, respectively, over *rabi 2020-21*. However, sown area under rice and coarse cereals declined by 703 and 2 thousand ha, respectively, during the period.

Sale Points

Total number of fertilizer sale points was 13,241 at the end of 2021-22. Out of these sale points, share of private channel was 83% and remaining 17% in cooperative and institutional channels.

IV. WEST ZONE

i) Gujarat

Fertilizer Consumption

Consumption of total fertilizer nutrients fell by 13.2%, from 1.957 million MT during 2020-21 to 1.700 million MT during 2021-22. Consumption of total fertilizer nutrients declined in *kharif 2021* by 15.8% and in *rabi 2021-22* by 11% over the corresponding seasons of the previous year. *Kharif:rabi* share in total consumption changed from 45:55 during 2020-21 to 43:57 during 2021-22.

Consumption of N at 1.215 million MT, P_2O_5 at 0.383 million MT and K_2O at 0.102 million MT during 2021-22 witnessed decline of 10%, 18.7% and 25.6%, respectively, over 2020-21. NPK use ratio changed from 9.9:3.4:1 during 2020-21 to 11.9:3.8:1 during 2021-22. Per hectare consumption of total fertilizer nutrients reduced significantly from 160 kg to 139 kg during the period.

Weather and Crop Situation

During Southwest monsoon 2021, rainfall was normal in Gujarat region and excess in Saurashtra & Kutch sub-divisions. Rains received in Gujarat region was 789 mm and it was 627 mm in Saurashtra & Kutch during the season. Out of 33 districts in the state, 14 received normal, 5 received excess, 1 received large excess and 13 districts received deficient rains during the season. During *kharif 2021*, sown area under rice, pulses, coarse cereals and cotton declined by 1, 16, 40 and 283 thousand ha, respectively, over *kharif 2020*. However, sown area under oilseeds and sugarcane increased by 225 and 49 thousand ha, respectively, during the period.

During post-monsoon season, rainfall was large excess in Gujarat region and excess in Saurashtra & Kutch sub-divisions. Gujarat region received 61 mm rains and Saurashtra & Kutch sub-divisions received 37 mm rains during the season. Out of 33 districts, 6 received normal, 3 received excess, 15 received large excess and 9 districts received deficient to large deficient rains during the season. During *rabi 2021-22*, sown area under pulses and oilseeds increased by 275 and 125 thousand ha, respectively, over *rabi 2020-21*. However, sown area under wheat and coarse cereals reduced by 116 and 8 thousand ha, respectively, during the period.

Sale Points

Total number of fertilizer sale points was 10,228 at the end of 2021-22. Out of these sale points, share of private channel was 44% and remaining 56% in cooperative and institutional channels.

ii) Madhya Pradesh

Fertilizer Consumption

Madhya Pradesh is the third largest fertilizer consuming state in the country having a share of about 9% to All-India consumption of fertilizer nutrients. Total fertilizer nutrient consumption in the state at 2.652 million MT during 2021-22 registered a decline of 8.4% over 2020-21. Consumption of total nutrients was negative in both *kharif* and *rabi* seasons. Consumption of fertilizer nutrients during *kharif 2021* declined by 11.4% and in *rabi 2021-22* by 5.9% over the corresponding seasons of the previous year. *Kharif:rabi* share in total consumption changed marginally from 45:55 during 2020-21 to 44:56 during 2021-22.

Consumption of N at 1.629 million MT, P_2O_5 at 0.890 million MT and K_2O at 0.133 million MT during 2021-22 reduced by 6%, 12.8% and 5.3%, respectively, over the previous year. NPK use ratio changed from 12.4:7.3:1 during 2020-21 to 12.3:6.7:1 during 2021-22. Per hectare consumption of total fertilizer nutrients reduced from 102.3 kg to 93.8 kg during the period.

Weather and Crop Situation

During Southwest monsoon 2021, the cumulative rainfall was normal in both the sub-divisions *i.e.* West Madhya Pradesh sub-division at 981 mm and East Madhya Pradesh sub-division at 892 mm. Out of 51 districts in the state, 31 received normal, 11 received excess to large excess rains and 9 districts received deficient rains during the season. During *kharif* 2021, sown area under rice, coarse cereals, oilseeds and sugarcane increased by 1107, 93, 210 and 4 thousand ha, respectively, over *kharif* 2020. However, sown area under pulses and cotton declined by 177 and 15 thousand ha, respectively, during the season.

During the post-monsoon, rainfall was large excess rains in West Madhya Pradesh sub-division at 93 mm and deficient rains in East Madhya Pradesh sub-division at 45 mm. Out of 52 districts, 12 received normal rains, 28 received excess to large excess rains and 12 districts received deficient to large deficient rains during the season. During *rabi* 2021-22, sown area under wheat, pulses, coarse cereals and oilseeds increased by 398, 108, 76 and 409 thousand ha, respectively, over *rabi* 2020-21.

Sale Points

Total number of fertilizer sale points was 15,737 at the end of 2021-22. Out of these sale points, share of private channel was 65% and remaining 35% in cooperative and institutional channels.

iii) Chhattisgarh

Fertilizer Consumption

Consumption of total fertilizer nutrients registered a decline of 13%, from a total of 0.872 million MT during 2020-21 to 0.758 million MT during 2021-22. It declined in *kharif* 2021 by 8.5% and 26.9% in *rabi* 2021-22 over the corresponding seasons of the previous year. *Kharif:rabi* share in total consumption changed from 75:25 during 2020-21 to 79:21 during 2021-22.

Consumption of N at 0.455 million MT, P₂O₅ at 0.235 million MT and K₂O at 0.069 million MT during 2021-22 registered decline of 13.4%, 13.7% and 7.9%, respectively, over 2020-21. NPK use ratio changed from 7.0:3.6:1 during 2020-21 to 6.6:3.4:1 during 2021-22. Per hectare consumption of fertilizer nutrients reduced from 152 kg to 132.2 kg during the period.

Weather and Crop Situation

Cumulative rains received in the state was normal at 1108 mm during Southwest monsoon 2021. Out of 27 districts in the state, 22 received normal rains, 1 received excess rains and 4 districts received deficient rains during the season. During *kharif* 2021, sown area under coarse cereals increased by 32 thousand ha over *kharif* 2020. However, sown area under, rice, pulses, oilseeds and sugarcane declined by 4, 12, 56

and 21 thousand ha, respectively, during the period.

During post-monsoon, the state received excess rains at 92 mm. Out of 27 districts, 9 districts received normal rains, 14 received excess to large excess rains and 4 districts received deficient to large deficient rains during the season. During *rabi* 2021-22, sown area under rice and pulses increased by 2 and 22 thousand ha, respectively, over *rabi* 2020-21. However, sown area under wheat, coarse cereals and oilseeds declined by 29, 19 and 9 thousand ha, respectively, during the period.

Sale Points

Total number of fertilizer sale points was 5,713 at the end of 2021-22. Out of these sale points, share of private channel was 58% and remaining 42% in cooperative and institutional channels.

iv) Maharashtra

Fertilizer Consumption

Maharashtra is the second largest fertilizer consuming state in the country having a share of about 11% to All-India consumption of fertilizer nutrients. Consumption of fertilizer nutrients reduced from 3.414 million MT during 2020-21 to 3.136 million MT during 2021-22, represented a negative growth of 8.1%. Total nutrient consumption declined in *kharif* 2021 by 9.9% and in *rabi* 2021-22 by 5.1% over the respective seasons of the previous year. *Kharif:rabi* share in total consumption changed marginally from 63:27 during 2020-21 to 62:28 during 2021-22.

Consumption of N at 1.594 million MT, P₂O₅ at 1.012 million MT and K₂O at 0.529 million MT during 2021-22 registered decline of 6.2%, 10.3% and 9.6%, respectively, over 2020-21. NPK use ratio changed marginally from 2.9:1.9:1 during 2020-21 to 3.0:1.9:1 during 2021-22. Per hectare consumption of fertilizer nutrients reduced from 178.4 kg to 163.8 kg during the period.

Weather and Crop Situation

During Southwest monsoon 2021, Madhya Maharashtra and Vidarbha sub-divisions received normal rains at 873 mm and 969 mm, respectively. Rains was excess in Marathwada sub-division at 989 mm during the season. Out of total 36 districts in the state, 17 received normal rains, 15 received excess rains and 4 received large excess rains during the season. During *kharif* 2021, sown area under rice, pulses, oilseeds and sugarcane increased by 58, 9, 589 and 301 thousand ha, respectively, over *kharif* 2020. However, sown area under coarse cereals and cotton declined by 328 and 209 thousand ha, respectively, during the period.

During post-monsoon, rainfall was normal in Vidarbha sub-division at 78 mm, excess in

Marathwada sub-division at 120 mm and large excess in Madhya Maharashtra sub-division at 181 mm during the season. Out of total 36 districts, 12 received normal rains, 8 received excess rains, 13 received large excess rains and 3 districts received deficient to large deficient rains during the season. During *rabi* 2021-22, sown area under pulses and oilseeds increased by 194 and 10 thousand ha, respectively, over *rabi* 2020-21. However, sown area under wheat and coarse cereals declined by 128 and 189 thousand ha, respectively, during the period.

Sale Points

Total number of fertilizer sale points was 34,500 at the end of 2021-22. Out of these sale points, share of private channel was 92% and remaining 8% in cooperative and institutional channels.

v) Rajasthan

Fertilizer Consumption

The consumption of total fertilizer nutrients at 1.611 million MT during 2021-22, registered a decline of 9.3% over the previous year. The growth in consumption of total nutrients was negative in both the seasons. Consumption of total fertilizer nutrients in *kharif* 2021 fell by 11.3% and in *rabi* 2021-22 by 8.1% over the corresponding seasons in the previous year. *Kharif:rabi* share in total fertilizer consumption changed marginally from 38:62 during 2020-21 to 37:63 during 2021-22.

On nutrient basis, consumption of N at 1.167 million MT and P_2O_5 at 0.415 million MT during 2021-22 declined by 6.1% and 18.6% respectively, over 2020-21. However, consumption of K_2O at 0.030 million MT increased by 22.2% during the period. Accordingly, NPK use ratio improved from 50.4:20.7:1 during 2020-21 to 38.7:13.8:1 during 2021-22. However, per hectare consumption of total fertilizer nutrients reduced from 64.6 kg to 58.6 kg during the period.

Weather and Crop Situation

During Southwest monsoon 2021, rainfall in East Rajasthan sub-division at 697 mm was normal. But in West Rajasthan sub-division, rainfall at 317 mm was excess. Out of total 33 districts in the state, 19 received normal rains, 10 received excess rains, 2 received large excess rains and remaining 2 districts received deficient rains during the season. During *kharif* 2021, sown area under rice, pulses, oilseeds and cotton increased by 27, 140, 94 and 169 thousand ha, respectively, over *kharif* 2020. However, sown area under coarse cereals was down by 207 thousand ha during the period.

During the post-monsoon, rainfall was excess in West Rajasthan sub-division at 15 mm and large excess in East Rajasthan sub-division at 68 mm during the

season. Out of 33 districts, 2 received normal rains, 5 received excess rains, 18 received large excess rains and balance 8 received deficient to large deficient rains during the season. During *rabi* 2021-22, sown under oilseeds increased by 962 thousand ha over *rabi* 2020-21. However, sown area under wheat, pulses and coarse cereals reduced by 162, 22 and 11 thousand ha, respectively, during the period.

Sale Points

Total number of fertilizer sale points was 14,609 at the end of 2021-22. Out of these sale points, share of private channel was 67% and remaining 33% in cooperative and institutional channels.

7.0 CONSUMPTION PRODUCTION BALANCE

7.1 All India

The difference between consumption and domestic production is expressed as deficit or surplus. If production of fertilizers is in excess of consumption, then it is a surplus situation. On the other hand, if consumption of fertilizers is higher than production, then it is a situation of deficit.

Nitrogenous and phosphatic fertilizers are indigenously produced in India. The deficit between total requirement and indigenous production is fulfilled through imports of these fertilizers. But potash is solely imported by India as mentioned earlier. The country is deficient in the production of both N and P_2O_5 compared to consumption. During 2021-22, total consumption of nitrogen declined by 0.966 million MT over the previous year. However, domestic production of N increased by 126 thousand MT during the year. In spite of nominal increase in production, proportionately higher decline in consumption narrowed the deficit from 6.659 million MT in 2020-21 to 5.568 million MT in 2021-22.

In case of P_2O_5 , consumption and production declined by 1,149 thousand MT and 25 thousand MT, respectively, during 2021-22 over 2020-21. Consequently, deficit reduced from 4.241 million MT in 2020-21 to 3.117 million MT in 2021-22 due to higher decline in consumption compared to production. Zone-wise consumption, production and surplus/deficit of N and P_2O_5 for 2020-21 and 2021-22 are presented in **Table 17**.

7.2 East Zone

The production of N is short of consumption in the East zone. During 2021-22, a new ammonia-urea plant at Panagarh, West Bengal commissioned. With this, there are 3 urea plants in East zone. But one plant of Namrup could not operate during 2021-22 due to equipment failure in ammonia synthesis section. Despite this, production of N increased by 317 thousand MT during 2021-22 over 2020-21. As against

Table 17. Zone-wise consumption, production and surplus/deficit of N and P₂O₅ - 2020-21 and 2021-22 (April/March)

Zone	(‘000 tonnes)			
	N		P ₂ O ₅	
	2020-21	2021-22	2020-21	2021-22
East				
1. Consumption	2772	2650	1277	1079
2. Production	711	1028	1419	1457
3. Surplus(+)/ Deficit (-)	-2061	-1622	142	378
North				
1. Consumption	6849	6613	2207	1926
2. Production	4487	4289	59	63
3. Surplus(+)/ Deficit (-)	-2362	-2324	-2148	-1863
South				
1. Consumption	4230	4114	2091	1888
2. Production	1936	2190	1158	1151
3. Surplus(+)/ Deficit (-)	-2294	-1924	-933	-738
West				
1. Consumption	6552	6061	3402	2935
2. Production	6611	6363	2102	2042
3. Surplus(+)/ Deficit (-)	59	302	-1300	-894
All-India				
1. Consumption	20404	19438	8978	7829
2. Production	13745	13870	4737	4712
3. Surplus(+)/ Deficit (-)	-6659	-5568	-4241	-3117
Note :				
(1) Consumption figures for 2021-22 are provisional.				
(2) Entire requirement of K ₂ O is met through imports.				
(3) All-India totals may not exactly tally due to rounding of figures.				

this, consumption of N declined by 122 thousand MT during the period. Consequently, the deficit in N reduced from 2.061 million MT in 2020-21 to 1.622 million MT in 2021-22.

East zone has 3 large sized DAP/complex fertilizer plants and 8 SSP plants. The zone continued to remain surplus in P₂O₅ production during 2021-22. The surplus of P₂O₅ in the east zone increased from 142 thousand MT in 2020-21 to 378 thousand MT in 2021-22 due to decline in consumption compared to increase in production.

7.3 North Zone

North zone is deficient in both N and P₂O₅. Though the zone has a large number of nitrogen producing plants (in the form of *neem* coated urea) but at the same time, it comprises of high fertilizer consuming states, such as, Uttar Pradesh, Punjab and Haryana. The deficit of N declined marginally from 2.362 million MT during 2020-21 to 2.324 million MT during 2021-22. The reduction in deficit was on account of more decline in consumption compared to decline in production.

The production of P₂O₅ in the north zone is low and is only through SSP as there is no DAP/ NP/NPK plant

in the zone. There are 7 SSP operating plants in North zone. During 2021-22, the deficit in P₂O₅ declined to 1.863 million MT from 2.148 million MT during 2020-21. The reduction in deficit was due to decline in consumption against increase in production.

7.4 South Zone

The south zone has 6 urea operating plants and 8 DAP/ NP/NPK plants. In addition, there are 17 SSP, 2 ammonium sulphate and 1 ammonium chloride plant in the zone. Nevertheless, the zone is deficient in both N and P₂O₅. During 2021-22, the deficit in N declined to 1.924 million MT from 2.294 million MT in 2020-21 due to fall in consumption as against increase in production of N.

The deficit in P₂O₅ also declined from 0.933 million MT during 2020-21 to 0.738 million MT during 2021-22. This was due to higher decline in consumption compared to decline in production.

7.5 West Zone

The west zone is surplus in N but deficient in P₂O₅. West zone has the largest number of nitrogenous and phosphatic fertilizer plants. There are 13 urea and 9 DAP/NP/NPK plants located in the zone. In addition, there are 68 SSP plants and 4 ammonium sulphate plants in the zone. The share of the west zone in all India production of N and P₂O₅ was 46% and 43%, respectively, during 2021-22. The surplus of N in the west zone increased from 59 thousand MT in 2020-21 to 302 thousand MT in 2021-22 due to higher fall in consumption compared to production.

In case of P₂O₅, the deficit reduced from 1.30 million MT in 2020-21 to 0.894 million MT during 2021-22. This was due to proportionately higher decline in consumption against the production.

Thus, only west zone is surplus in nitrogen and only east zone is surplus in phosphate. North and South zones are deficit both in nitrogen and phosphate. This is also reflected in substantial deficit in both N and P₂O₅ at national level.

8.0 PRODUCTION OF FOOD GRAINS AND COMMERCIAL CROPS

As per the 4th Advance Estimates of crop production for 2021-22, total production of food grains is estimated to increase from 310.7 million MT in 2020-21 to 315.7 million MT in 2021-22 representing an increase of 1.6%.

Among food grain crops, production of rice is estimated to increase by 4.8% and pulses by 8.8% during 2021-22 over 2020-21. However, production of wheat and coarse cereals are estimated to decline by 2.5% and 0.8%, respectively, during the period. Production of oilseeds, sugarcane and jute & mesta is estimated to increase by 4.9%, 6.5% and 10.3%,

respectively, during 2021-22 over 2020-21. However, production of cotton is estimated to decline by 11.5% during the same period (Table 18).

9.0 AGRICULTURAL DEVELOPMENT PROGRAMMES

Agriculture plays a vital role in India's economy. It accounts for 18.6% of country's gross value added (GVA) with 54.6% of the total workforce engaged in agriculture and allied sector activities. Given the importance of agriculture sector, the Government of India has recently undertaken several initiatives for its sustainable development. Steps have been undertaken to improve soil fertility through the Soil Health Card Scheme, provide improved access to irrigation and enhanced water efficiency through the Pradhan Mantri Krishi Sinchai Yojana (PMKSY), support organic farming through Paramparagat Krishi Vikas Yojana (PKVY), create a unified national agriculture market to boost the income of farmers, and mitigate risk in the agriculture sector through Pradhan Mantri Fasal Bima Yojana (PMFBY).

Increase in crop yields depends on a number of factors which include *inter-alia* weather, improved technology, and use of quality inputs. Ministry of Agriculture and Farmers Welfare has initiated a number of programmes/schemes to ensure the adequate availability of good quality agro- inputs (seed, fertilizer, agrochemicals etc.) and to conserve natural resources, in particular land and water.

9.1 Seed Production

Seed is the most important and vital input for

agricultural production. Indian seeds programme recognizes three classes of seeds, namely, breeder seeds, foundation seeds and certified seeds. There has been a continuous increase in the production of certified/ quality seeds. The annual production of certified/ quality seeds is estimated to be higher at 4,988,286 tonnes (t) in 2021-22 compared to 4,836,632 tonnes in 2020-21 (Table 19).

9.2 National Mission for Sustainable Agriculture

National Mission for Sustainable Agriculture (NMSA) is one of the eight missions outlined under National Action Plan on Climate Change (NAPCC). NMSA aims at making agriculture more productive, sustainable, remunerative, and climate-resilient by promoting location-specific integrated/composite farming systems; soil and moisture conservation measures; comprehensive soil health management; and efficient water management practices and mainstreaming rainfed technologies. Major components of NMSA are: Soil Health Management; Rainfed Area Development (RAD); Climate Change and Sustainable Agriculture Monitoring, Modeling, and Networking (CCSAMN); Integrated Nutrient Management (INM); Pradhan Mantri Krishi Sinchayee Yojana (PMKSY); and Paramparagat Krishi Vikas Yojana (PKVY).

9.3 Soil Health Management

Soil Health Management (SHM) is one of the most important interventions under the National Mission for Sustainable Agriculture (NMSA). The components under Soil Health Management include trainings for fertilizer dealers, foreign nationals, fertilizer inspectors and fertilizer laboratory staff, setting up

Table 18 - Production of foodgrains and cash crops from 2019-20 to 2021-22

Crop/Season	(Million tonnes)					
	2019-20		2020-21		2021-22	
	Target	Final Estimate	Target	Final Estimate	Target	4 th Advance Estimate
1. Rice	116.0	118.9	119.6	124.4	121.1	130.3
2. Wheat	100.5	107.9	108.0	109.6	110.0	106.8
3. Coarse cereals	48.3	47.8	47.8	51.3	51.2	50.9
4. Total pulses	26.3	23.0	25.6	25.5	25.0	27.7
Total Foodgrains	291.1	297.5	301.0	310.7	307.3	315.7
(i) Kharif	147.9	143.8	149.4	150.6	151.4	156.0
(ii) Rabi	143.2	153.7	151.7	160.2	155.9	159.7
5. Sugarcane	385.5	370.5	390.0	405.4	397.0	431.8
6. Oilseeds	36.1	33.2	37.0	35.9	38.4	37.7
-Out of which						
(i) Groundnut	9.2	10.0	9.1	10.2	9.9	10.1
(ii) Soyabean	15.0	11.2	14.7	12.6	14.8	13.0
(iii) Rapeseed & Mustard	8.2	9.1	9.4	10.2	10.2	11.7
7. Cotton @	35.8	36.1	36.0	35.2	37.0	31.2
8. Jute & Mesta \$	11.2	9.9	10.5	9.4	10.6	10.3

@ = Million bales of 170 kg each \$ = Million bales of 180 kg each

Type of seeds	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22
Breeder seed production	12.34	11.02	8.23	8.62	9.04	11.07	10.51	10.43	9.27	9.12	8.45*
Foundation seed	222.68	161.70	174.31	157.62	149.54	220.91	195.42	180.10	222.50	241.21	213.97
Certified / quality seed production / availability	3536.20	3285.80	3473.13	3517.66	3435.25	3802.90	4194.11	3988.77	4310.10	4836.63	4988.29
* = Target											
Source : Annual Report 2021-22, Department of Agriculture & Farmers Welfare, Ministry of Agriculture & Farmers Welfare, Government of India.											

of new static Soil Testing Laboratories (STLs), setting up of new Mobile STLs, strengthening of existing STLs, setting up of new Fertilizer Quality Control Laboratories (FQCLs), and strengthening of existing FQCLs etc. The components under INM and Organic Farming/Management include setting up of fruit/vegetable/agro waste compost production units, setting up of bio-fertilizer production units, setting up of bio-fertilizer and organic fertilizer quality control laboratories etc.

Under the scheme, setting up of 69 new static STLs, 5 new mobile STLs, 59 new mini STLs, strengthening of 116 STLs, setting up of 1 FQCL, strengthening of 6 FQCLs, setting up of 2 new bio-fertilizer units, strengthening of existing 19 bio-fertilizer units, setting up of 1 new Bio Fertiliser Quality Control Centre (BOQCC), strengthening of 1 BOQCC, and promotion of micronutrients in 2,33,943 ha have been sanctioned under SHM component. Sixty one STLs and 29 FQCLs were sanctioned for strengthening. Funds amounting to Rs. 57.96 crore was released for the year 2020-21 under Soil Health Management.

9.4 Rainfed Area Development

Integrated Farming System (IFS) is being promoted under Rainfed Area Development (RAD) in which activities like horticulture, livestock, fishery, agroforestry, agriculture are taken up along with crops/cropping systems. The total area of 6.26 lakh ha was covered under NMSA-RAD upto 31.3.2021. During 2021-22, a sum of Rs.37.91 crore was released upto 31st December, 2021 to the states for implementation of the programme during current year. Amount of Rs.1472.64 crore has been released to the states under RAD.

9.5 Drought Management

Spatial distribution and quantum of rainfall during Southwest Monsoon period (June- September) mainly determines the incidence of drought in the country as Southwest Monsoon accounts for more than 70% of annual rainfall. During the year 2020-21, the State

Government of Madhya Pradesh submitted a memorandum seeking financial assistance from the National Disaster Response Fund (NDRF). Central Research Institute for Dryland Agriculture (CRIDA) has developed detailed district-wise contingency plans to provide a broad advisory to farmers at the district level, prescribing alternate strategies in the event of climate variability by factoring in crops / livestock/aquaculture practices / soil characteristics, infrastructural facilities, etc. Department of Agriculture and Farmers Welfare (DA&FW) is also in the process of preparing "Drought Proofing Plan" for 24 identified districts in association with CRIDA under ICAR.

9.6 Micro Irrigation Fund

Union Finance Minister in the Union Budget 2017-18 announced the setting up of a dedicated Micro Irrigation Fund (MIF) to be instituted by NABARD with an initial corpus of Rs. 5000 crores. The objective of the fund is to facilitate the States in mobilizing resources for expanding coverage of micro irrigation by taking up special and innovative projects and also for incentivizing micro irrigation beyond the provisions available under Pradhan Mantri Krishi Sinchayee Yojana- Per Drop More Crop (PMKSY – PDMC) to encourage farmers to install micro irrigation systems. The Steering Committee of MIF and NABARD has approved Grant of Loan of Rs. 3970.17 crore to the Governments of Andhra Pradesh, Tamil Nadu, Haryana, Gujarat, West Bengal, Punjab, and Uttarakhand during 2020-21. NABARD has released an amount of Rs. 2039.23 crores to the States of Tamil Nadu, Andhra Pradesh, Haryana, Gujarat, and Punjab. Interest subvention by the Government of India under MIF of Rs. 43.87 crore has been released to NABARD till quarter ending December, 2021. MIF has been augmented by additional amount of Rs. 5000 crore.

9.7 Mission for Integrated Development of Horticulture

Mission for Integrated Development of Horticulture

(MIDH) is a centrally sponsored scheme for the holistic growth of the horticulture sector covering fruits, vegetables, root & tuber crops, mushrooms, spices, flowers, aromatic plants, coconut, cashew, and cocoa. MIDH consists of 5 schemes on Horticulture viz. (i) National Horticulture Mission (NHM), (ii) Horticulture Mission for North East and Himalayan States (HMNEH), (iii) National Horticulture Board (NHB), (iv) Coconut Development Board (CDB), and (v) Central Institute of Horticulture (CIH), Nagaland. Under MIDH, Government of India (GOI) contributes 60% of the total outlay for developmental programmes in all the States with contribution of states being rest of 40% contributed by State Governments; exceptions are the North-Eastern and Himalayan States where the GOI contributes 90%. In case of National Horticulture Board (NHB), Coconut Development Board (CDB), Central Institute for Horticulture (CIH), Nagaland and the National Level Agencies (NLA), GOI contributes 100%. The budget allocation of Rs. 2249.72 crore was earmarked for MIDH during 2021-22. As on 31st December, 2021, funds to the tune of Rs. 525.59 crore have been released for implementation of the activities of MIDH.

9.8 Rashtriya Krishi Vikas Yojana

Rashtriya Krishi Vikas Yojana (RKVY) has enabled the launch of new schemes / programmes by keeping the states flexibility and authority intact. The Scheme was revamped as the Rashtriya Krishi Vikas Yojana - Remunerative Approaches for Agriculture and Allied Sector Rejuvenation (RKVY-RAFTAAR) for implementation from 2017-18 with a major focus on pre and post-harvest infrastructure, besides promoting agri-entrepreneurship, innovations and value addition. Following 6 special programmes/schemes are being implemented under RKVY-RAFTAAR.

- *Crop Diversification Programme (CDP)*. The allocation for the programme for 2021-22 was Rs.120 crores.
- *Reclamation of Problem Soils*. The allocation for reclamation of problem soils in 2021-22 was Rs.30 crores.
- *Swachh Bharat*. The allocation for 2021-22 was Rs. 40 crores.
- *Animal Health and Disease Control*. The allocation for this programme for 2021-22 was Rs.20.01 crores.
- *Area Expansion of Cashew*. The allocation for the programme in 2021-22 was Rs. 30 crores.
- *Pilot Intervention for Most Vulnerable Drought Prone Districts*. The allocation for the programme in 2021-22 was Rs.6.98 crores.

9.9 Pradhan Mantri Fasal Bima Yojana

Pradhan Mantri Fasal Bima Yojana (PMFBY) has been implemented in various States/Union Territories of the country since *kharif* 2016 through 18 General Insurance Companies. Under PMFBY, a uniform maximum premium of only 2% of the sum insured is paid by farmers for all *kharif* crops and 1.5% for all *rabi* crops. In case of annual commercial and horticulture crops, the maximum premium to be paid by farmers is only 5%. Efforts are being made to make the scheme technology-driven with the primary objective to reduce the delays in claim payment to farmers. Capturing of Crop Cutting Experiments (CCEs) data on smartphones/CCE Agri App and its real time transfer on National Crop Insurance Portal has been made mandatory from *kharif* 2017 onwards and the states have to provide an evidence of having conducted CCEs before Government of India share in subsidy is released. During 2019-20, Rs. 615 lakh farmers were insured despite the withdrawal of Bihar State from the scheme from *kharif* 2018 season and West Bengal state from *kharif* 2019.

9.10 Pradhan Mantri Kisan Samman Nidhi

With a view to augment the income of small and marginal farmers, Government of India launched a central sector scheme namely, "**Pradhan Mantri Kisan Samman Nidhi (PM-KISAN)**". The scheme took effect from 1st December, 2018 for transfer of benefits to eligible beneficiaries. The scheme aims to provide a payment of Rs. 6000/- per year to be transferred in three equal installments of Rs. 2000/- every four months into the bank accounts of eligible landholding farmer's families. As on 30.11.2021, an amount of around Rs. 1.6 lakh crore has been disbursed and around Rs. 11.60 crore farmers have been granted benefits under the scheme.

9.11 Paramparagat Krishi Vikas Yojana

Paramparagat Krishi Vikas Yojana (PKVY) is a centrally sponsored scheme with the funding pattern of 100% central share for Hilly States & Union Territories (UTs). For the remaining states, Central and State Governments share is in a ratio of 60:40. States had been advised to earmark 30% budget allocation for women farmer's/beneficiaries. Total fund released under PKVY Scheme was Rs. 1608.78 crores during the period 2015-16 to 2021-22 (as on 15.01. 2022). Under PKVY Scheme 30,934 clusters (20 ha each) have been formed since 2015-16 covering 6.19 lakh ha. It has benefitted 15.47 lakh farmers.

9.12 Bhartiya Prakritik Krishi Paddhati

Bhartiya Prakritik Krishi Paddhati (BPKP) scheme, a sub-scheme of PKVY is aimed at promoting traditional indigenous practices which gives freedom to farmers from externally purchased inputs and largely based on on-farm biomass recycling with major stress on biomass mulching, use of cow dung-urine

formulations, plant-based preparations time to time, working for soil aeration and exclusion of all synthetic chemical inputs directly or indirectly. Under BPKP the financial assistances provided for 3 years is Rs. 12,200/ha.

Under BPKP (natural farming) a fund of Rs. 4,980.99 lakh has been released for an area of 4.09 lakh ha to 8 states namely Andhra Pradesh, Chhattisgarh, Kerala, Himachal Pradesh, Jharkhand, Odisha, Madhya Pradesh, and Tamil Nadu. In-principle approval has been given to Uttar Pradesh for area of 38,670 ha.

9.13 Agriculture Credit

Many policy initiatives have been undertaken for strengthening of farm credit delivery system for providing credit at lower rates of interest to support the resource requirement of the agriculture sector. Government is providing interest subvention to make short-term crop loans upto Rs.3 lakh for a period of one year available to farmers at the interest rate of 7% per annum and in case of timely repayment, the same gets reduced to 4%. Presently there are about 6.76 crore active Kisan Credit Cards (KCCs) holders and 2.70 crore new KCCs have been sanctioned since February, 2020. With a view to bring more farmers under the institutional credit fold, Government of India has reviewed existing KCC scheme and simplified the procedure to facilitate the farmers avail institutional credit through KCC. Agriculture credit flow has increased consistently over the years. The agriculture credit flow target for the year 2021-22 was fixed at Rs. 16,50,000 crore and against this target the disbursement upto 30th September 2021 has been Rs. 7,36,589 crore.

9.14 Doubling of Farmers' Income

The Government has adopted several developmental programmes, schemes, reforms and policies that focus on higher incomes for farmers. All these policies and programmes are being supported by higher budgetary allocations (from Rs. 21,933.50 crores during Budget Estimates (BE) 2013-14 to Rs. 1,23,017.57 crores during BE 2021-22), non-budgetary financial resources by way of creating Corpus Funds and supplementary income transfers under PM-KISAN. Government has increased MSPs for all mandated *khari*, *rabi* and other commercial crops with a return of at least 50% over all India weighted average cost of production. The latest major interventions include the 'At Atmanirbhar Bharat – Agriculture' which includes creation of 'Agricultural Infrastructure Fund (AIF)' worth Rs. 1 lakh crores including Rs 500 crores for the Bee-Keeping initiative.

9.15 Aatmanirbhar Bharat Abhiyaan

The vision of new India was announced by the Hon'ble Prime Minister Shri Narendra Modi on May 12, 2020.

In agriculture, Aatmanirbhar Bharat Abhiyan (ABA) aims to strengthen infrastructure, logistics, capacity building etc. The components of the ABA for DA&FW are as follows –

a. Agriculture Infrastructure Fund (AIF)

Central Sector Scheme of financing facility under Agri. Infrastructure Fund is operational from the year 2020-21 to 2032-33. The aim is creation of infrastructure at the farm gate. The scheme shall provide a medium - long term debt financing facility for investment in viable projects for post-harvest management infrastructure and community farming assets through interest subvention and financial support. Under the scheme, Rs. 1 lakh crore will be provided by banks and financial institutions as loans to Primary Agricultural Credit Societies (PACS), Marketing Cooperative Societies, Farmer Producers Organizations (FPOs), Self Help Groups (SHGs), Farmers, Joint Liability Groups (JLGs), Multipurpose Cooperative Societies, Agri Entrepreneurs, Startups and Central/State agencies or Local Body sponsored Public Private Partnership Projects, Agriculture Produce Market Committees (APMCs), State Agencies, National and State level Federations of Cooperatives, Federations of FPOs and Federations of Self Help Groups (SHGs), etc.

b. The National Beekeeping and Honey Mission (NBHM)

Govt. of India has approved a Central Sector Scheme with total budget outlay of Rs. 500 crores for 3 years (2020-21 to 2022-23) under Atmanirbhar Bharat Announcement for overall promotion and development of scientific beekeeping and to achieve the goal of "Sweet Revolution" in the country.

9.16 India Digital Ecosystem on Agriculture

IDEA has been envisaged with a Vision to build a National Digital Agriculture Ecosystem, to elevate Indian Agriculture Sector to higher levels of efficiency and productivity, and to improve the welfare and income of farmers. The important objectives of National Digital Agriculture Ecosystem include:

- To enable the farmers to realize higher income and better profitability through access to right information at the right time, and from innovative solutions.
- To enable better planning and execution of policies, programmes, and schemes of the Central and State Governments, and, also of the Private Sector and Farmers Producer Organizations (FPOs).
- To enhance efficiencies in the usage of resources including land, water, seeds, fertilizers, pesticides, and farm machines by providing easier access to information and optimization solutions.

9.17 MKisan-Use of Basic Mobile Telephony

The DA&FW has developed a portal – mKisan (mkian.gov.in), where around 5.2 crore farmers are registered and experts / scientists of different departments like IMD, ICAR, State Governments, State Agriculture Universities send information to farmers in 12 local languages on a regular basis.

Information related to the weather such as likelihood of rainfall, temperature, etc. enables farmers to make informed decisions in choice of seed varieties and decide on timing of sowing and harvesting. With market information, farmers are better informed to sell produce, prevailing market prices and quality demanded in the market. Thus, they can make informed decisions to sell produce at the right price and at the right time. This helps in reducing distress sales by farmers due to market supply fluctuations. More than 2462 crore SMSs have been sent through mKisan since its inception in 2013.

9.18 Farmers' Portal (www.farmer.gov.in)

Farmers' Portal is a one stop shop where a farmer can get relevant information on a range of topics including seeds, fertilizer, pesticides, credit, good practices, dealer network availability of inputs, Agromet advisory etc. This centralized repository is the back bone of all mobile apps and SMS advisories. This portal provides information across all stages of crop management right from sowing of seeds till post-harvesting. An important feature of this web-based portal is that one can drill down to the block level and get information of the particular block.

9.19 Development of Mobile Apps

Spreading agriculture-related information to farmers in the poorest communities has been made easier by proliferation of mobile phones. Mobile apps help to fulfil the larger objective of farmers' empowerment and facilitates in dissemination of extension services to address food security issues. Various mobile apps have been developed for farmers. Kisan Suvidha, an omnibus mobile app, helps farmers by providing relevant information on critical parameters – weather, input dealers, market price, plant protection, expert advisories, Soil Health Card, cold storages and godowns, crop insurance. An additional tab directly connects the farmer with the Kisan Call Centre where agriculture experts answer their queries. Unique features like extreme weather alerts and market prices of commodities in the nearest area and the maximum price in the State as well as in India have been added to empower farmers in the best possible manner. With the click of a button, farmers can obtain all this information in hand provided they have a smart phone and decent internet connectivity. Total downloads were 13,55,884 up to November 2020.

9.20 Development of Real Time Crop Forecasting

Real Time Crop forecasting system has been initiated.

Under the project, an integrated portal is proposed to be developed by integrating the diversity of data sets and methodologies or harmonizing various divisions/ organizations with the use of advance digital technology. Monthly Crop Forecasts are proposed to be released from the data collected through the portal. A Task Force has been constituted under the Co-chairmanship of ADG (Statistics), DA&FW and Sr. Economic & Statistical Advisor, Directorate of Economics & Statistics for development of the system in a time-bound manner.

9.21 FAI Initiatives

The Fertiliser Association of India (FAI) with the help of its member companies has been playing a catalytic role in transfer of improved technology with special emphasis on balanced and efficient use of fertilizers. It has initiated various activities for the rapid dissemination of best management practices among the farmers. Some of the important activities undertaken during 2021-22 are given below:

9.21.1 Special Issue of IJF on Specialty Fertilizers

Low and declining use efficiency of bulk fertilizers has underlined the use of more efficient innovative / specialty fertilizers. Consumer demand is also witnessing a paradigm shift from traditional to specialty fertilizers, particularly in the high value crops. The use of specialty fertilizers, particularly WSFs, is increasing rapidly in our country but its share is still very low vis-a-vis the global market. FAI devoted April 2021 issue of the Indian Journal of Fertilisers (IJF) on Specialty Fertilizers. The main objective of the special issue was to present the current status and highlight the increasing need for specialty fertilizers in Indian agriculture. The special issue included eight articles covering latest information on various aspects of specialty fertilizers.

9.21.2 Special Issue of IJF on Agri Innovations to Combat Food and Nutrition Challenges

The Indian Society of Agronomy in collaboration with Professor Jayashankar Telangana State Agricultural University (PJTSAU), Hyderabad organized the Fifth International Agronomy Congress "Agri Innovations to Combat Food and Nutrition Challenges" at PJTSAU, Hyderabad, Telangana during November 23–27, 2021. To commemorate this occasion, the FAI brought out the November 2021 issue of Indian Journal of Fertilisers (IJF) on the theme of the Congress. Eight papers covering the whole canvass of the Congress were published in the November issue of IJF.

9.21.3 Webinar on Recent Developments in Fertiliser (Control) Order

The Fertiliser Association of India (FAI) organized a Webinar "Recent Developments in Fertiliser (Control)

Order” on 10th June, 2021. Over 200 delegates representing Fertilizer Industry, Indian Council of Agricultural Research (ICAR), and Ministry of Agriculture and Farmer’s Welfare participated in the Webinar. Dr. S.K. Chaudhari, Deputy Director General (NRM), ICAR gave the introductory remarks. Dr. S.K. Malhotra, Agriculture Commissioner and Chairman, Central Fertilizer Committee (CFC), Government of India delivered the opening address. In all six presentations were made in the two technical sessions.

9.21.4 Brainstorming Session on Safe Use of Fertilizers and Other Agrochemicals

A Brainstorming Session on Safe Use of Fertilizers and Other Agrochemicals was organized by NRM Division of ICAR on 19th July, 2021 under the Chairmanship of DG, ICAR. DDG (NRM) apprised the delegates about the concerns voiced by Hon’ble Prime Minister on use of chemical fertilizers and their impact on human health and environment. Over forty participants from ICAR/SAUs/DOAC and various other line departments attended the session. From FAI, Director (Agricultural Sciences) attended the Brainstorming Session. Recommendations of the brainstorming session were circulated to the FAI Board Members on 24th August, 2021.

9.21.5 FAI Annual Seminar 2021

FAI Annual Seminar 2021 was devoted to theme of “Challenges in Fertilizer and Agriculture”. The session II “Meeting Challenges in Agriculture” was chaired by Dr. S.K. Malhotra, Agriculture Commissioner, Ministry of Agriculture and Farmers Welfare, Government of India, New Delhi. Four papers presented in the session included: i) Climate Smart Agriculture by Dr Himanshu Pathak, Director, ICAR- National Institute of Abiotic Stress Management (NIASM), Baramati, Maharashtra; ii) Innovations in Nutrient Management by Dr Kaushik Majumdar, Director General, African Plant Nutrition Institute (APNI), Morocco; iii) Water Management: Issues and Strategies by Dr Atmaram Mishra, Director, ICAR – Indian Institute of Water Management (IIWM), Bhubaneswar; and iv) Developments in Fertiliser (Control) Order by Dr Amit Rastogi, Executive Vice President - Technology, Coromandel International Limited, Secunderabad, Telangana. All the presentations made in Agriculture Session were well received and highly appreciated.

9.22 International Relations

FAI, with its professional services and valuable contributions to the industry over the years, has emerged as an important organisation in the field of agriculture and fertilizers. Its views on concerned issues are widely acclaimed and solicited both nationally and internationally. Apart from its representation and participation in national level research and decision-making forums including

Government, FAI maintains cordial relations and exchanges information with number of reputed international organisations. Some of these organisations include Food and Agriculture Organization (FAO), Rome; The International Fertilizer Association (IFA), Paris; The Sulphur Institute (TSI), Washington DC; The International Potash Institute (IPI), Switzerland; International Crops Research Institute for the Semi-Arid Tropics (ICRISAT), Hyderabad, India; International Fertilizer Development Centre (IFDC), Muscle Shoals, USA; International Rice Research Institute (IRRI), Los Banos, Philippines; International Maize and Wheat Improvement Center (CIMMYT), Mexico; International Zinc Association (IZA), Belgium; and many others. This helps in promoting better understanding of the global developments and their impact on the Indian fertilizer and agriculture sectors.

10.0 EXCHANGE RATE

The cost of production and import of fertilizers is impacted by changes in international prices of raw materials and finished products as well as changes in exchange rates. The average value of rupee against US\$ depreciated during 2021-22 over 2020-21. The average exchange rate of rupee per US\$ was 74.51 in 2021-22 compared to 74.23 during 2020-21. At the beginning of the year *i.e.* April 2021, the value of rupee against US\$ was 74.47 which depreciated during the subsequent months and touched at 76.24 during March 2022. **Figure 2** shows monthly trend in the exchange rate of rupee vis-à-vis US\$ during 2021-22.

11.0 INTERNATIONAL PRICES

11.1 Raw Material/Intermediaries

India is heavily dependent on imports of both raw materials and finished fertilizers. During 2021-22, out of the total estimated production of 15.69 million MT of ammonia in the country, about 98% was based on natural gas and 2% on naphtha. Although all naphtha based ammonia-urea plants have converted their feedstock to natural gas but one plant at Tuticorin is still using naphtha partially as feedstock due to non-availability of gas required by the plant. About 13.62 billion SM³ (37.33 million SM³ per day) of LNG was imported during the year to supplement the supply of domestic gas. In addition, about 2.31 million MT of ammonia was also imported during 2021-22 to supplement the requirement of ammonia for production of DAP/ NP/NPK complex fertilizers in the country.

With regard to phosphates, bulk of the requirement of raw materials/intermediates is fulfilled through imports. During 2021-22, about 9.66 million MT of rock phosphate and 1.90 million MT of sulphur were imported by India. The availability of rock phosphate from domestic sources was nearly 1 million MT. Domestic availabilities of sulphur is about 2.0 million MT from various sources. A major portion of these

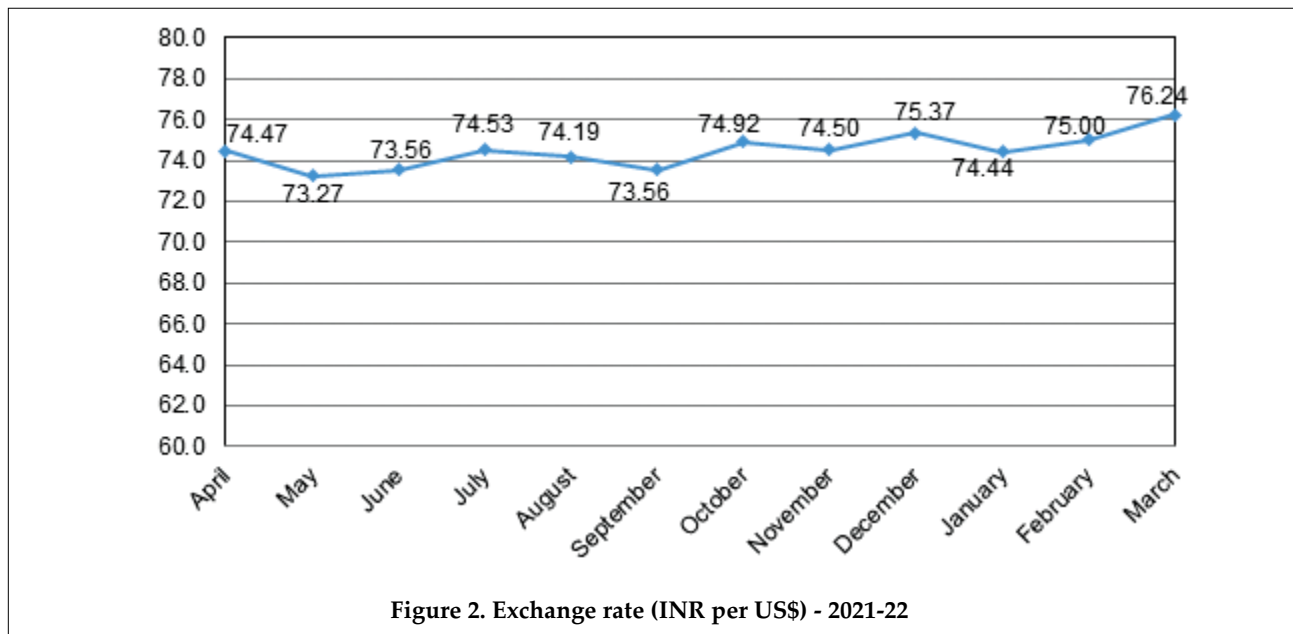


Figure 2. Exchange rate (INR per US\$) - 2021-22

raw materials is used by the fertilizer industry. About 60-65% requirement of phosphoric acid is met through imports. During 2021-22, about 2.40 million MT of phosphoric acid (as P_2O_5) was imported. International prices of these intermediates / raw materials play an important role in the cost of production of phosphatic fertilizers. There had been considerable increase in prices of raw materials/intermediates during 2021-22. In spite of several challenges, Indian fertilizer industry had maintained the production level and imports during the year. The details of trends in international prices are presented in the following paragraphs.

11.1.1 Rock Phosphate

India imported 9.66 million MT of rock phosphate in 2021-22 as against 7.73 million MT during the previous year. Major exporters of rock phosphate to India include Jordan, Morocco, Egypt, Togo, Algeria and UAE. Small quantities are also imported by India from a few other countries.

FOB (Morocco) prices of rock phosphate (68%-72% BPL) ranged between US\$ 85-190 per MT during April-September, 2021. It increased to US\$ 118-300 per MT during October 2021 to March 2022.

Simple averages of maximum and minimum prices from the same source for 1st and 2nd half of 2021-22 were US\$ 138 per MT and US\$ 209 per MT, respectively. Similar trends in FOB prices of rock phosphate were observed from other sources, such as, Jordan, Egypt and a few other countries. FOB prices of rock phosphate from different sources on quarterly basis are presented in Table 20.

11.1.2 Sulphur

During 2021-22, import of sulphur increased to 1.90 million MT from 1.46 million MT in the previous year.

Major suppliers of sulphur to India are Qatar, UAE, Oman, Kuwait and Saudi Arabia. Other suppliers include Bahrain, Iraq, Japan and Singapore. Small quantities of sulphur are also imported by India from Namibia and a few other countries. Sulphur is mostly recovered from petroleum refineries.

Sulphur prices also went up successively during 2021-22. The range of FOB (Middle East) spot prices of sulphur was US\$ 162-195 per MT during 1st half of 2021-22 which increased to US\$ 190-440 per MT during 2nd half of 2021-22.

Simple averages of minimum and maximum FOB (Middle East) prices of sulphur during 1st and 2nd half of 2021-22 were US\$ 179 and US\$ 315 per MT, respectively. FOB prices from other source, such as, Vancouver (Canada) also showed similar trend. FOB prices of sulphur from different sources on quarterly basis are presented in Table 20.

11.1.3 Ammonia

India imported 2.31 million MT of ammonia in 2021-22 as against 2.42 million MT during the previous year. India imports ammonia from various countries. Major suppliers of ammonia to India are Saudi Arabia, Qatar, Ukraine, Bahrain, Egypt, Indonesia, Oman, etc. Other countries which supply ammonia to India include Bangladesh, Iran, Libya, UAE and a few other countries.

During April-June 2021, CFR (India) price of ammonia was in the range of US\$ 465-648 per MT. It went up at US\$ 600-690 per MT during second quarter (July-September 2021), further moved to US\$ 580-900 per MT in the third quarter (October-December 2021) and US\$ 835-1055 per MT during the fourth quarter (January-March 2022). Simple average of minimum and maximum CFR prices for 1st quarter of 2021-22

was US\$ 557 per MT, 2nd quarter US \$ 645 per MT, 3rd quarter US \$ 740 per MT and 4th quarter US\$ 945 per MT (Table 21).

11.1.4 Phosphoric Acid

India imported about 2.44 million MT of phosphoric acid in 2021-22 as against 2.51 million MT during the previous year. Major suppliers of phosphoric acid to India are Morocco, Senegal, Jordan, Tunisia and USA. Small quantities are also imported from South Africa, Vietnam and a few other countries.

CFR (India) prices of phosphoric acid also went up successively during 2021-22. During April-June 2021, CFR (India) price of phosphoric acid was US\$ 998 per MT. It went up at US\$ 1160 per MT during second quarter, US\$ 1330 per MT in the third quarter and US \$ 1530 per MT during the fourth quarter (Table 21).

11.2 Finished Fertilizers

Like raw materials, prices of most of the finished fertilizers also moved up during 2021-22. Table 22 shows the source-wise range of FOB prices and Table 23 gives average CFR (India) prices of Urea, DAP and MOP.

11.2.1 Urea

During 2021-22, consumption of urea was 34.18 million MT as against domestic production of 25.08 million MT. Higher demand of urea was fulfilled through imports. Import of urea was 9.14 million MT during 2021-22 compared to a high of 9.83 million MT in the previous year. India imports urea mainly from China, Oman, Egypt, Ukraine, UAE, Indonesia, Finland, Saudi Arabia, and Bahrain. A few other countries which supply urea to India include Russia, Qatar, Malaysia, etc.

Range of FOB spot prices of urea from Middle East was US\$ 330-465 per MT during 1st quarter of 2021-22. It increased to US\$ 420-620 per MT during 2nd quarter. Prices again went up to US\$ 650-960 per MT in the 3rd quarter. During the 4th quarter, the prices further moved up at US\$ 560-1000 per MT (Table 22). Simple average of minimum and maximum FOB (M. East) prices for 1st quarter of 2021-22 was US\$ 398 per MT, 2nd quarter US \$ 520 per MT, 3rd quarter US \$ 805 per MT and 4th quarter US\$ 780 per MT.

The weighted average CFR price of urea for the quantities imported by India for the full year 2021-22

		(US\$/tonne)					
Year	Quarter	Phosphate Rock Bulk FOB				Sulphur Bulk FOB	
		Morocco (68-72% BPL) Contract	Egypt (60-68% BPL) Spot/Contract	Jordan (66-72% BPL) Contract	Jordan (73-75% BPL) Contract	Middle East Spot	Vancouver Spot
		Min. - Max.	Min. - Max.	Min. - Max.	Min. - Max.	Min. - Max.	Min. - Max.
2015	Jan./March	110 - 120	62 - 75	105 - 118	128 - 137	150 - 187	140 - 175
	April/June	110 - 120	59 - 75	105 - 124	128 - 137	139 - 165	125 - 175
	July/Sept.	110 - 130	59 - 79	105 - 124	130 - 137	115 - 156	110 - 155
	Oct./Dec.	115 - 130	59 - 79	105 - 124	130 - 137	103 - 135	105 - 127
2016	Jan./March	90 - 140	59 - 79	90 - 124	120 - 137	80 - 128	75 - 127
	April/June	90 - 140	55 - 72	90 - 115	120 - 125	75 - 85	70 - 85
	July/Sept.	90 - 140	45 - 72	85 - 110	110 - 120	64 - 80	65 - 80
	Oct./Dec.	90 - 130	40 - 64	82 - 105	108 - 120	75 - 94	70 - 90
2017	Jan./March	80 - 115	40 - 64	82 - 105	106 - 120	80 - 92	78 - 90
	April/June	80 - 115	45 - 70	84 - 90	106 - 115	72 - 85	72 - 84
	July/Sept.	70 - 100	36 - 65	80 - 95	105 - 115	83 - 117	84 - 105
	Oct./Dec.	70 - 90	36 - 55	70 - 95	95 - 112	116 - 205	100 - 185
2018	Jan./March	70 - 98	36 - 50	70 - 100	95 - 110	110 - 150	110 - 140
	April/June	73 - 103	40 - 54	78 - 105	103 - 115	110 - 138	110 - 130
	July/Sept.	83 - 108	40 - 56	83 - 110	108 - 120	130 - 168	125 - 160
	Oct./Dec.	78 - 115	40 - 56	85 - 110	112 - 120	123 - 175	125 - 165
2019	Jan./March	78 - 120	40 - 56	85 - 110	112 - 120	98 - 120	98 - 130
	April/June	80 - 120	40 - 56	85 - 110	112 - 120	98 - 108	95 - 103
	July/Sept.	75 - 110	40 - 55	52 - 110	105 - 120	45 - 100	50 - 100
	Oct./Dec.	72 - 110	35 - 55	52 - 100	103 - 110	38 - 50	38 - 50
2020	Jan./March	70 - 105	35 - 55	52 - 95	100 - 105	38 - 67	38 - 65
	April/June	70 - 105	35 - 55	52 - 95	100 - 105	50 - 67	53 - 65
	July/Sept.	75 - 107	35 - 55	55 - 100	100 - 110	50 - 70	50 - 70
	Oct./Dec.	78 - 112	35 - 57	65 - 102	105 - 110	67 - 103	60 - 100
2021	Jan./March	78 - 125	37 - 60	68 - 110	105 - 120	98 - 200	95 - 170
	April/June	85 - 155	38 - 62	73 - 135	115 - 150	180 - 190	160 - 185
	July/Sept.	105 - 190	47 - 67	88 - 150	140 - 170	162 - 195	165 - 195
	Oct./Dec.	118 - 225	52 - 90	94 - 165	160 - 190	190 - 300	185 - 275
2022	Jan./March	140 - 300	52 - 98	115 - 220	170 - 260	295 - 440	265 - 410
	April/June	220 - 365	62 - 160	130 - 250	230 - 300	420 - 485	390 - 480

Table 21. Average CFR (India) prices of ammonia and phosphoric acid from 2015 to 2022

Table 21. Average CFR (India) prices of ammonia and phosphoric acid from 2015 to 2022							
Year	Quarter	(US \$/tonne)					
		Ammonia			Phosphoric acid		
		Min.	-	Max.	Min.	-	Max.
2015	Jan./March	430	-	600	765	-	805
	April/June	410	-	480	805	-	810
	July/Sept.	420	-	530	810	-	810
	Oct./Dec.	400	-	505	810	-	810
2016	Jan./March	330	-	400	715	-	715
	April/June	340	-	400	605	-	605
	July/Sept.	180	-	360	605	-	610
	Oct./Dec.	173	-	250	580	-	580
2017	Jan./March	219	-	394	545	-	550
	April/June	215	-	390	570	-	590
	July/Sept.	210	-	300	567	-	572
	Oct./Dec.	255	-	375	567	-	572
2018	Jan./March	280	-	380	678	-	678
	April/June	280	-	314	730	-	730
	July/Sept.	300	-	408	758	-	758
	Oct./Dec.	340	-	390	758	-	768
2019	Jan./March	270	-	350	750	-	750
	April/June	235	-	317	728	-	728
	July/Sept.	225	-	275	655	-	655
	Oct./Dec.	250	-	295	625	-	625
2020	Jan./March	250	-	305	590	-	590
	April/June	195	-	270	607	-	607
	July/Sept.	220	-	295	625	-	625
	Oct./Dec.	265	-	305	689	-	689
2021	Jan./March	265	-	545	795	-	795
	April/June	465	-	648	998	-	998
	July/Sept.	600	-	690	1160	-	1160
	Oct./Dec.	580	-	900	1330	-	1330
2022	Jan./March	835	-	1055	1530	-	1530
	April/June	950	-	1100	1530	-	1530

was US\$ 661 per MT compared to US\$ 263 per MT in 2020-21 (Table 23). The buyback arrangement of Government of India with JV OMIFCO for urea was ended in July 2020. Henceforth, India had imported urea from OMIFCO at international prices. In February 2022, India had signed a 3-year deal with OMIFCO to import 1 million MT of urea a year.

11.2.2 DAP

Although consumption of DAP declined but production and import increased during 2021-22. Consumption of DAP declined from 11.91 million MT during 2020-21 to 9.27 million MT during 2021-22. Conversely, production of DAP increased from 3.77 million MT to 4.22 million MT during the period. Similarly, import of DAP increased from 4.88 million MT to 5.46 million MT during the same period. Major suppliers of DAP to India are China, Saudi Arabia, Morocco, Jordan, Russia, Egypt, USA and Turkey.

FOB price of DAP from Saudi Arabia was US\$ 535-585 per MT during April-June 2021. It increased to US\$ 580-662 per MT during July-September 2021 and US\$ 660-910 per MT in the third quarter (October-December 2021). The prices further increased to US\$

894-1175 per MT in the last quarter (January-March 2022). Trend in FOB prices was similar from other sources (Table 22). Simple average prices of minimum and maximum from Saudi Arabia for 1st, 2nd, 3rd and 4th quarters of 2021-22 were in the order of US\$ 560 per MT, US \$ 621 per MT, US \$ 785 per MT and US\$ 1035 per MT, respectively.

During the full year 2021-22, average CFR (India) price of DAP was US\$ 741 per MT as against US\$ 369 per MT in the previous year (Table 23).

11.2.3 MOP

Consumption of MOP (for direct application) reduced from 3.42 million MT during 2020-21 to 2.46 million MT during 2021-22. Requirement of entire quantity of MOP is being imported. During 2021-22, total import of MOP was 2.46 million MT. Major suppliers of MOP to India are Canada, Russia, Israel, Jordan, Lithuania and Germany.

The range of FOB spot prices of MOP from CIS (Baltic Sea) was US\$ 178-252 per MT during April-June 2021 which increased to US\$ 167-482 per MT during July-September 2021. It further increased to US\$ 170-538 per MT during October-December 2021 and US\$ 186-836 per MT during January-March 2022. Simple

Table 22. FOB prices of Urea, DAP and MOP from 2015 to 2022
(US\$/tonne product)

Year	Quarter	Urea			DAP			MOP					
		CIS	M. East	China	US Gulf	CIS	Morocco	Jordan	Saudi Arabia	China	Vancouver	Jordan	CIS
		Min. - Max.	Min. - Max.	Min. - Max.	Min. - Max.	Min. - Max.	Min. - Max.	Min. - Max.	Min. - Max.	Min. - Max.	Min. - Max.	Min. - Max.	Min. - Max.
2015	Jan./March	258 - 325	265 - 325	268 - 293	465 - 487	458 - 520	460 - 490	470 - 490	460 - 480	281 - 330	271 - 333	287 - 333	
	April/June	245 - 296	250 - 308	263 - 307	456 - 475	450 - 500	467 - 480	473 - 485	460 - 475	293 - 320	290 - 310	278 - 300	
	July/Sept.	240 - 287	258 - 290	258 - 303	450 - 475	440 - 500	440 - 482	450 - 475	440 - 470	290 - 319	284 - 316	272 - 300	
2016	Oct./Dec.	230 - 285	238 - 263	232 - 262	390 - 450	385 - 480	430 - 460	398 - 470	390 - 450	280 - 310	275 - 315	263 - 306	
	Jan./March	178 - 232	193 - 230	196 - 227	350 - 400	320 - 435	355 - 450	350 - 403	335 - 400	236 - 318	233 - 323	223 - 311	
	April/June	183 - 208	190 - 218	200 - 227	345 - 360	320 - 370	332 - 350	340 - 365	331 - 343	195 - 315	185 - 321	190 - 307	
2017	July/Sept.	170 - 193	180 - 197	188 - 203	337 - 345	320 - 345	328 - 338	322 - 342	310 - 334	190 - 305	185 - 305	180 - 295	
	Oct./Dec.	185 - 226	192 - 235	193 - 238	315 - 340	318 - 343	310 - 335	308 - 328	295 - 315	190 - 240	185 - 240	180 - 235	
	Jan./March	198 - 255	210 - 265	223 - 260	315 - 375	318 - 383	310 - 368	315 - 392	315 - 375	190 - 240	185 - 240	180 - 230	
2018	April/June	173 - 216	190 - 220	208 - 233	345 - 370	330 - 390	345 - 368	350 - 392	340 - 370	195 - 239	192 - 237	182 - 232	
	July/Sept.	178 - 258	190 - 260	222 - 285	333 - 345	330 - 360	340 - 355	343 - 363	336 - 358	195 - 239	191 - 236	184 - 230	
	Oct./Dec.	205 - 275	220 - 288	265 - 285	340 - 385	350 - 390	350 - 390	360 - 420	355 - 405	207 - 238	204 - 233	190 - 229	
2019	Jan./March	215 - 242	235 - 268	280 - 315	395 - 415	380 - 425	385 - 415	390 - 422	405 - 418	209 - 249	204 - 242	190 - 239	
	April/June	211 - 262	228 - 275	290 - 308	407 - 420	395 - 425	410 - 420	412 - 422	406 - 417	207 - 265	205 - 254	192 - 254	
	July/Sept.	236 - 279	265 - 310	278 - 320	420 - 439	410 - 445	410 - 420	415 - 430	412 - 418	207 - 270	204 - 270	187 - 259	
2020	Oct./Dec.	280 - 316	275 - 349	290 - 338	417 - 437	410 - 450	395 - 420	407 - 435	403 - 415	247 - 290	239 - 278	234 - 276	
	Jan./March	218 - 275	250 - 285	280 - 295	383 - 420	360 - 435	385 - 400	390 - 425	380 - 405	257 - 294	251 - 286	249 - 288	
	April/June	225 - 269	245 - 288	283 - 305	345 - 383	335 - 420	345 - 385	340 - 420	335 - 385	258 - 289	260 - 289	250 - 280	
2021	July/Sept.	228 - 267	255 - 285	253 - 285	305 - 345	292 - 363	315 - 345	320 - 358	312 - 338	246 - 283	241 - 283	232 - 275	
	Oct./Dec.	205 - 236	233 - 261	235 - 263	280 - 308	240 - 330	281 - 320	290 - 325	285 - 312	227 - 272	220 - 270	214 - 257	
	Jan./March	208 - 237	233 - 262	239 - 265	265 - 315	250 - 315	280 - 305	285 - 310	285 - 312	209 - 273	204 - 272	189 - 263	
2022	April/June	194 - 227	210 - 249	225 - 248	290 - 310	280 - 310	295 - 305	306 - 311	304 - 312	202 - 277	196 - 276	187 - 264	
	July/Sept.	208 - 255	225 - 280	225 - 276	309 - 345	295 - 348	303 - 365	309 - 355	306 - 355	200 - 227	191 - 219	178 - 218	
	Oct./Dec.	225 - 255	255 - 273	255 - 285	345 - 390	335 - 395	350 - 385	355 - 385	352 - 372	196 - 222	195 - 215	181 - 206	
2021	Jan./March	250 - 362	275 - 365	285 - 365	405 - 590	390 - 580	380 - 530	380 - 561	390 - 570	193 - 226	173 - 224	175 - 209	
	April/June	310 - 445	330 - 465	320 - 470	580 - 675	550 - 695	530 - 610	535 - 685	533 - 670	196 - 262	189 - 251	178 - 252	
	July/Sept.	395 - 580	420 - 620	395 - 550	660 - 690	590 - 705	610 - 660	580 - 662	560 - 634	200 - 506	174 - 479	167 - 482	
2022	Oct./Dec.	650 - 925	650 - 960	620 - 750	810 - 810	660 - 890	645 - 930	660 - 910	630 - 760	199 - 571	173 - 547	170 - 538	
	Jan./March	500 - 890	560 - 1000	550 - 900	810 - 1250	860 - 1240	740 - 1140	894 - 1175	-	207 - 833	198 - 827	186 - 836	
	April/June	390 - 820	540 - 950	500 - 850	1000 - 1240	835 - 1240	980 - 1140	900 - 1210	960 - 980	509 - 907	532 - 909	522 - 918	

average prices of minimum and maximum from the same source for 1st, 2nd, 3rd and 4th quarters of 2021-22 were in the order of US\$ 215 per MT, US \$ 325 per MT, US \$ 354 per MT and US\$ 511 per MT, respectively (Table 22). Similar trend in FOB prices was noticed from other source countries.

Average CFR (India) price of MOP for the full year 2021-22 was US\$ 359 per MT against US\$ 239 per MT in 2020-21 (Table 23).

12.0 DOMESTIC PRICES

12.1 Prices of Natural Gas

Figure 3 represents the month-wise trends in the pool prices of gas for urea sector during 2020-21 and 2021-22. During 2020-21, the average pool price of gas on gross calorific value (GCV) was Rs. 654.90 per MMBTU during April 2020 which increased considerably during the year and touched at Rs. 689.15 per MMBTU during March 2021. Similarly, during 2021-22, the average pool price of gas on GCV increased from Rs. 718.33 per MMBTU to Rs. 1459.03 per MMBTU during the period. The annual average pool price of gas on GCV during 2020-21 was Rs. 589.92 per MMBTU which increased to Rs. 1056 per MMBTU during 2021-22. During the current year, the average pool price of gas increased substantially. It increased from Rs.1668.34 per MMTBU during April 2022 to Rs. 1785.56 per MMBTU (provisional) during June 2022.

12.2 Retail Prices of Fertilizers

12.2.1 Urea

The retail basic price of urea remained unchanged at Rs.5360 per MT since November 2012. W.e.f. 25th May, 2015, Government of India made it mandatory for all indigenous urea manufacturers to produce 100% *neem*

coated urea of their total urea production. The same policy is applied for imported urea at the port. Government of India allowed the manufacturers/importers to charge 5% extra on the MRP of urea. Therefore, the retail price of urea (i.e. *neem* coated urea) works out to Rs. 5628 per MT w.e.f. 25th May, 2015 exclusive of state taxes and GST.

12.2.1.1 Rationalizing the Size of Urea Bag

Government made it mandatory to resize urea bag from 50 kg to 45 kg. In this context, DoF issued a notification on 4th September 2017 conveying approval of the Government to introduce 45 kg bag of urea replacing the existing 50 kg bag. A period of six months was given as lead time to implement the introduction of 45 kg bag of urea. Subsequently, Department of Agriculture, Cooperation and Farmers Welfare notified price per bag of urea of 45 kg at Rs. 242/- w.e.f. 1st March 2018 from Rs. 268/- per bag of 50 kg earlier. A further period of two months' extension from the date of notification of MRP of 45 kg bag of urea was given as lead time to implement the introduction of 45 kg bag of urea.

12.2.2 P & K Fertilizers

The retail prices of P & K fertilizers covered under NBS are market driven and announced by the companies from time to time.

13.0 SUBSIDY ON DECONTROLLED PHOSPHATIC AND POTASSIC FERTILIZERS UNDER NBS

Chapter 1 section 1.2.1 of the review covered the NBS rates per kg for 2021-22 in respect of P & K fertilizers. On 9th April, 2021, Department of Fertilizers (DoF) extended the NBS rates of the year 2020-21, for the

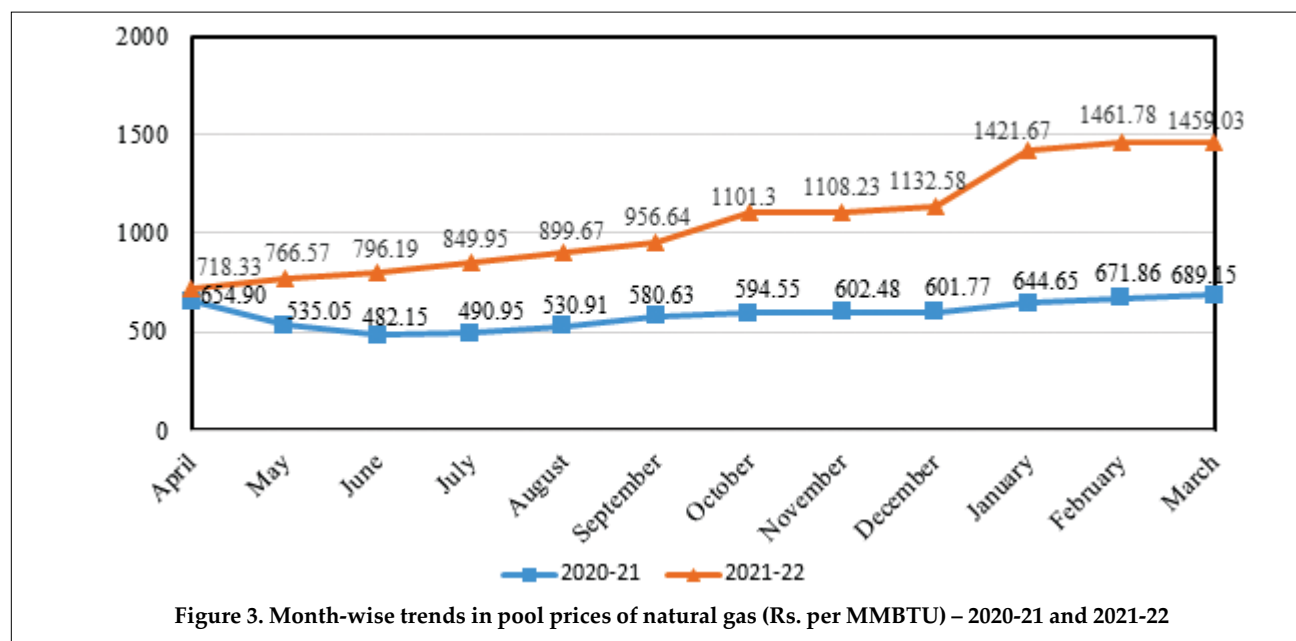


Figure 3. Month-wise trends in pool prices of natural gas (Rs. per MMBTU) – 2020-21 and 2021-22

Table 23. Average CFR (India) prices of Urea, DAP and MOP from 2010-11 to 2021-22			
(US\$/tonne)			
Year	Urea ¹	DAP	MOP
2010-11	JV - 167	593 ²	370
	Direct - 327.38		
2011-12	JV - 215.19	650 ²	478
	Direct - 481.74		
2012-13	JV - 227.63	580 ²	492
	Direct - 417.40		
2013-14	JV - 172.41	475 ²	375-424
	Direct - 322.66		
2014-15	JV - 179.66	465 ²	322
	Direct - 303.94		
2015-16	JV - 145.83	459 ²	332
	Direct - 279.02		
2016-17	JV - 157.50	366 ²	235
	Direct - 210.42		
2017-18	Direct - 241.33	379 ³	240 ¹
	JV - 180.03		
2018-19	Direct - 305.44	459 ³	275 ³
	JV - 180.44		
2019-20 (P)	Direct - 271.46	334 ³	286 ³
	JV - 180.44		
2020-21 (P)	Direct - 262.64	369 ³	239 ³
2021-22 (P)	Direct - 661.30	741 ³	359 ³

(P) = Provisional.CFR = Cost & Freight
 1 = Weighted average price.
 2 = Average FOB price + Ocean freight from published documents.
 3 = Average of monthly CFR.

year 2021-22 till further orders. Thereafter, on 20th May, 2021 DoF notified the NBS rates of the year 2021-22 applicable from 20th May, 2021 to 31st October, 2021. As per the notification, DoF revised the per kg subsidy on phosphate (P) from Rs.14.888 per kg for 2020-21 to Rs. 45.323 per kg for 2021-22. However, NBS rates per kg for N, K and S remained unchanged at the previous year's level.

Accordingly, NBS rates of fertilizers containing P nutrient increased significantly. NBS rate per MT of DAP and SSP increased from Rs. 10,231 and Rs. 2,643 for 2020-21 to Rs. 24,231 and Rs. 7,513 for 2021-22, respectively. NBS rates for NP/NPK grades of fertilizers were in the range of Rs. 11,134 per MT to Rs. 19,910 per MT. However, NBS rates for MOP and ammonium sulphate remained unchanged at Rs. 6,070 and Rs. 4,398 per MT, respectively, for 2021-22. In addition, two new NPK complex fertilizers (8-21-21 and 9-24-24) were included in the NBS scheme.

Further, on 13th October, 2021, DoF again notified NBS rates applicable from 1st October, 2021 to 31st March, 2022. NBS rates for N, P, K and S were kept at the level of earlier notified rates of 20th May, 2021. In addition, DoF announced special onetime package with an additional subsidy for DAP at Rs. 8769 per MT and

three most consumed NPK grades (20-20-0-13, 10-26-26 and 12-32-16) at Rs. 2000 per MT each, applicable from 1st October, 2021 to 31st March, 2022. DoF has also included Potash Derived from Molasses (PDM) (0:0:14.5:0) under the NBS scheme. However, per MT additional subsidy for fortified fertilizers with Boron and Zinc continued and remained unchanged at Rs. 300 and Rs. 500, respectively.

Part A of Table 24 gives the per kg nutrient based subsidy for N, P, K and S for 2021-22. **Part B** of Table 24 presents the per MT subsidy on various P & K fertilizer

Table 24. Nutrient based subsidy for P & K fertilizers - 2021-22	
A. NBS for nutrient N, P, K and S (Rs. per kg.)	
Nutrient	w.e.f. 20.5.2021
N	18.789
P	45.323
K	10.116
S	2.374
B. NBS for different P & K fertilizers (Rs. per tonne)	
Fertilizers	w.e.f. 20.5.2021
DAP (18-46-0)	24,231 ^a
MAP (11-52-0-0)	25,635
TSP (0-46-0-0)	20,849
SSP (0-16-0-11)	7,513
MOP (0-0-60-0)	6,070
16-20-0-13	12,379
20-20-0-13	13,131 ^b
20-20-0-0	12,822
28-28-0-0	17,951
16-16-16-0	11,876
17-17-17-0	12,619
19-19-19-0	14,103
10-26-26-0	16,293 ^b
12-32-16-0	18,377 ^b
14-28-14-0	16,737
14-28-0-0	15,321
14-35-14-0	19,910
15-15-15-0	11,134
15-15-15-09	11,348
24-24-0-0	15,387
24-24-0-8*	15,387
8-21-21	13,145
9-24-24	14,996
PDM:0-0-14.5-0 (w.e.f. 1.10.2021)	1,467
Ammonium Sulphate (20.5-0-0-23)	4,398
PDM = Potash Derived from Molasses * = Subsidy on Sulphur not included. a = Special onetime package with an additional subsidy of Rs. 8769 per tonne over and above the NBS rates, applicable from 1.10.2021 to 31.3.2022. b = Special onetime package with an additional subsidy of Rs. 2000 per tonne over and above the NBS rates, applicable from 1.10.2021 to 31.3.2022.	
C. Per tonne additional subsidy for fortified fertilizers with secondary and micro-nutrients (as per FCO)	
Nutrients for fortification (as per FCO)	Additional subsidy per tonne of fortified fertilizers (Rs.)
Boron 'Bn'	300
Zinc 'Zn'	500

Table 25. Economics of application of N, P₂O₅ & K₂O on paddy and wheat from 1971-72 to 2021-22

Particulars	1971-72	1981-82	1991-92	1992-93	1995-96	2001-02	2002-03	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22			
			Effective	Effective	(Kharif)	(Rabi)	w.e.f.	Feb. 28	2002	2002	2002												
A. FERTILIZER & FOODGRAINS PRICES (Rs./kg)																							
Nutrient prices (Rs./kg)																							
1. N based on Urea	2.01	5.11	6.65	6.00	7.22	7.22	10.00	10.50	10.50	11.54	11.54	11.65	11.65	12.23 *	12.23 *	12.23 *	12.23 *	12.23 *	12.23 *	12.23 *	12.23 *		
2. P ₂ O ₅ based on:																							
DAP	1.86	5.83	7.57	11.78	16.96	18.11	15.43	16.22	16.22	17.11	18.85	47.62	44.35	46.96	48.70	43.27	43.54	54.14	47.61	47.61	47.61	47.61	
				to	to	to				to	to												
				12.43	18.48	19.45				18.85	39.61												
3. K ₂ O based on MOP	0.89	2.17	2.83	7.50	6.03	7.00	7.09	7.43	7.43	7.43	10.00	28.33	26.67	27.50	26.67	18.33	19.97	26.67	31.67	28.17	32.50	32.50	
				to	to	to				to	to												
				7.57	8.00					8.43	20.13												
Output prices (Rs./kg) (Crop/Year)																							
4. Procurement prices of paddy	0.53	1.15	2.30	2.70	3.60	3.60	5.30	5.30	10.00	10.00	10.80	12.50	13.10	13.60	14.10	14.70	15.50	17.50	18.15	18.68	19.40	19.40	
5. Procurement prices of wheat	0.76	1.30	2.50	3.30	3.80	3.80	6.20	6.20	11.00	11.70	12.85	13.50	14.00	14.50	15.25	16.25	17.35	18.40	19.25	19.75	20.15	20.15	
B. PHYSICAL RATIOS																							
PADDY																							
6. Kg. of paddy required to buy 1 kg. N	3.79	4.44	2.89	2.22	2.01	2.01	1.89	1.98	1.05	1.15	1.07	0.93	0.89	0.86	0.87	0.83	0.79	0.70	0.67	0.65	0.63	0.63	
7. Kg. of paddy required to buy 1 kg. P ₂ O ₅	3.51	5.07	3.29	4.36	4.71	5.03	2.91	3.06	3.06	1.62	1.71	3.81	3.39	3.45	3.45	2.94	2.81	3.09	2.62	2.55	2.45	2.45	
- as DAP				to	to	to				to	to												
				4.60	5.13	5.40				1.89	3.67												
8. Kg. of paddy required to buy 1 kg. K ₂ O	1.68	1.89	1.23	2.78	1.68	1.94	1.34	1.40	1.40	0.74	0.93	2.27	2.04	2.02	1.89	1.25	1.29	1.52	1.74	1.56	1.68	1.68	
				to	to	to				to	to												
				2.10	2.22					0.84	1.86												
WHEAT																							
9. Kg. of wheat required to buy 1 kg. N	2.64	3.93	2.66	1.82	1.90	1.90	1.61	1.69	1.69	0.95	0.99	0.86	0.83	0.80	0.80	0.75	0.70	0.66	0.64	0.62	0.61	0.61	
10. Kg. of wheat required to buy 1 kg. P ₂ O ₅	2.45	4.48	3.03	3.57	4.46	4.77	2.49	2.62	2.62	1.47	1.46	3.53	3.17	3.24	3.19	2.66	2.51	2.94	2.47	2.41	2.36	2.36	
- as DAP				to	to	to				to	to												
				3.77	4.86	5.12				1.61	3.08												
11. Kg. of wheat required to buy 1 kg. K ₂ O	1.17	1.67	1.13	2.27	1.59	1.84	1.14	1.20	1.20	0.68	0.64	0.78	2.10	1.91	1.90	1.75	1.13	1.45	1.65	1.48	1.61	1.61	
				to	to	to				to	to												
				1.99	2.11					0.72	1.57												
* = Price of <i>Neem</i> Coated Urea. Includes 5% extra on basic MRP of urea.																							
W.e.f. 25 th May, 2015. Govt has made it mandatory for all indigenous producers of urea to produce 100% of their production of subsidised urea as <i>Neem</i> Coated Urea. The rule is applicable for imported urea also.																							
The government allowed to produce <i>neem</i> coated urea upto a maximum limit as listed below.																							
W.e.f.	% of the company's total production																						
1 st June, 2008	20																						
11 th January, 2011	35																						
7 th January, 2015	Cap/ restriction removed																						
1 st April, 2015	75 (Mandatory)																						
25 th May, 2015	100 (Mandatory)																						

products. **Part C** of **Table 24** shows per MT additional subsidy for fertilizers fortified with secondary and micro nutrients.

14.0 ECONOMICS OF FERTILIZER USE

The cost benefit ratio of fertilizer to food grain depends upon the selling prices of fertilizers and procurement/support prices of grains. **Table 25** shows physical ratios of N, P₂O₅ and K₂O on paddy and wheat during the period 1971-72 to 2021-22. The table shows the changes in physical ratios, *i.e.*, kg of paddy and wheat required to buy a kg of nutrient. It may be observed that the physical ratios improved consistently from 2002-03 to 2009-10 due to stagnant retail prices of fertilizers and continued increase in procurement prices. During 2010-11, the physical ratios marginally changed due to nominal increase in retail prices of fertilizers. From 2011-12 to 2015-16, the physical ratios for P & K became considerably unfavourable due to more proportionate increase in MRP of DAP and MOP compared to increase in procurement prices of paddy and wheat. During 2016-17 and 2017-18, the physical ratios improved due to reduction in retail prices of DAP and MOP and increase in MSP of paddy and wheat. However, during 2018-19, it became unfavourable due to proportionately higher increase in retail prices of P & K fertilizers against increase in MSP of paddy and wheat. During 2019-20 to 2021-22, the physical ratios of P improved due to stagnant retail price of DAP. However, in case of K, the physical ratios turned unfavourable due to higher increase in the retail price of MOP compared to increase in the procurement prices of paddy and wheat.

In case of urea, the physical ratios turned little unfavourable during 2010-11 due to increase in MRP of urea by about 10% as against nominal increase in MSP of rice and wheat. From 2011-12 and onwards, the physical ratios continued to improve. This was due to increase in MSP for paddy and wheat as against almost stagnant price of urea.

15.0 ECONOMICS OF SULPHUR USE

Sulphur is an essential plant nutrient, besides nitrogen, phosphate, and potash. The results from experimental stations and farmers' fields indicate that the application of 20-40 kg S per hectare in addition to recommended dose of NPK is highly economical. The latest available average price per kg of bentonite sulphur was about Rs.56.5. As against this, the price of N (as urea) was Rs.12.23 per kg, for P (as DAP) it was Rs.47.61 per kg and for K (as MOP) it was Rs.32.50 per kg during 2021-22. As per the experimental results, the extra yield by application of one kg of sulphur is about 28 kg for paddy, 24 kg for wheat, 26 kg for maize, 20 kg each for sorghum and mustard and 12 kg for soyabean. **Table 26** shows the crop response to sulphur application and value cost ratio

of sulphur for different crops. The value cost ratio of sulphur for various crops ranged from 8.4 to 17.9 showing that economic returns on sulphur application are quite good.

16.0 RECENT DEVELOPMENTS AND OUTLOOK FOR 2022-23

16.1 NBS for P & K Fertilizers

Chapter 1 section 1.2.2 of the review covered the NBS rates per kg in respect of phosphatic and potassic fertilizers. DoF, Ministry of Chemicals & Fertilizers issued a notification on 27th April, 2022 regarding nutrient based subsidy rates for P&K fertilizers for *kharif* 2022 (from 1st April, 2022 upto 30th September, 2022). In view of considerable increase in international prices of finished fertilizers, raw materials and the intermediates used for manufacture of P & K fertilizers, DoF revised the per kg NBS rates of N, P, K and S from Rs.18.789, Rs. 45.323, Rs. 10.116 and Rs. 2.374 during *rabi* 2021-22 to Rs. 91.96, Rs. 72.74, Rs. 25.31 and Rs. 6.94, respectively, for *kharif* 2022 (**Table 27**).

Accordingly, NBS rates per MT of DAP and MOP increased from Rs. 33,000 and Rs. 6,070 per MT during *rabi* 2021-22 to Rs. 50,013 and Rs. 15,186 per MT, respectively, for *kharif* 2022. NBS rates for NP/NPK grades of fertilizers are now in the range of Rs. 27,947 per MT to Rs. 41,877 per MT. However, NBS rates for SSP remained unchanged at Rs. 7,513 per MT for *kharif* 2022. The notification stated that the guidelines for inclusion of SSP in freight subsidy regime and fertilizer movement/supply plan on pilot basis for *kharif* 2022 will be issued separately. Per MT additional subsidy for fortified fertilizers with boron and zinc continued and remained unchanged at Rs. 300 and Rs. 500, respectively. **Table 27** presents per MT subsidy applicable for the above products.

Based on the higher nutrient subsidy rates for P&K fertilizers for *kharif* 2022 (from 1st April to 30th September, 2022), Government approved Rs. 60,939 crore subsidy for P&K fertilizers for *kharif* 2022.

Further, in a tweet on 21st May, 2022, Hon'ble Finance Minister mentioned that "Despite rising fertilizer prices globally, we have protected our farmers from such price hikes. In addition to the fertilizer subsidy of Rs. 1.05 lakh crore in the budget, an additional amount of Rs. 1.10 lakh crore is being provided to further cushion our farmers." Thus, the total fertilizer subsidy would be Rs. 2.15 lakh crore for the year 2022-23.

16.2 Weather

Onset of Southwest monsoon 2022 was advanced by 3 days. However, rainfall during June 2022 was 8% below LPA but in July and August, it was 17% and 3% above LPA. IMD predicted normal rainfall during Southwest monsoon 2022. The cumulative rainfall

Crop	Price (2021-22) Rs./kg	Yield increase * kg grain/kg S	Value of grain Rs./kg S	Value: Cost ratio
Paddy	19.40	28	543.2	9.6
Wheat	20.15	24	483.6	8.6
Maize	18.70	26	486.2	8.6
Sorghum	27.38	20	547.6	9.7
Soyabean	39.50	12	474.0	8.4
Mustard	50.50	20	1010.0	17.9
Groundnut	55.50	9	499.5	8.8

* = Data presented in the TSI/FAI/IFA Symposium on 'Sulphur in Balanced Fertilization' held during October 4-5, 2006 at New Delhi.

Latest available average price of 1 kg S = Rs. 56.53

during 1st June to 31st August, 2022 was 6% above the LPA. The country received 743.8 mm rains as against 700.7 mm of normal rains during the period. Out of a total of 36 meteorological sub-divisions, 30 constituting 83% of the total area of the country received normal to excess rains. Out of 703 reported districts, 68% districts received normal to excess rains during the period.

Total live storage available in 143 reservoirs was 144.97 BCM as on 25th August, 2022 as against 112.69 BCM on the same date in the previous year. Current year's storage is 129% of the last year's storage and 125% of the normal storage.

16.3 Crop Situation

Monsoon became active over most parts of India during July 2022. However, uneven distribution of rains during the period has created concerns over adverse impact on *kharif* crops. As per the available information, total area sown under all *kharif* crops was 104.51 million hectares (million ha) as on 26th August, 2022 compared to 106.19 million ha during the corresponding period in the previous year. This was 1.6% lower than the corresponding period in the previous year.

16.4 Fertilizer Sales

Uneven distribution of monsoon rains and decline in sown area affected demand of some products during April/July 2022 over April/July 2021. Sale of urea at 10.42 million MT and DAP at 3.13 million MT during April/July 2022 registered increase of 2.2% and 15.1%, respectively, over April/July 2021. However, sale of NP/NPKs at 2.49 million MT, SSP at 1.82 million MT and MOP (for direct application) at 0.40 million MT witnessed decline of 32.4%, 4.0% and 55.5%, respectively, during the period.

A. NBS for nutrient N, P, K and S (Rs. per kg.)	
Nutrient	w.e.f. 1.4.2022 [#]
N	91.96
P	72.74
K	25.31
S	6.94
B. NBS for different P & K fertilizers (Rs. per tonne)	
Fertilizers	w.e.f. 1.4.2022 [#]
DAP (18-46-0)	50,013
MAP (11-52-0-0)	47,940
TSP (0-46-0-0)	33,460
SSP (0-16-0-11)	7,513
MOP (0-0-60-0)	15,186
16-20-0-13	30,164
20-20-0-13	33,842
20-20-0-0	32,940
28-28-0-0	46,116
16-16-16-0	30,402
17-17-17-0	32,302
19-19-19-0	36,102
10-26-26-0	34,689
12-32-16-0	38,362
14-28-14-0	36,785
14-28-0-0	33,242
14-35-14-0	41,877
15-15-15-0	28,502
15-15-15-09	29,126
24-24-0-0	39,528
24-24-0-8*	39,528
8-21-21	27,947
9-24-24	31,808
PDM:0-0-14.5-0 (w.e.f. 1.10.2021)	1,467
Ammonium Sulphate (20.5-0-0-23)	20,448

PDM = Potash Derived from Molasses.
 * = Subsidy on Sulphur not included.
 # = Till 30th September, 2022

C. Per tonne additional subsidy for fortified fertilizers with secondary and micro-nutrients (as per FCO)	
Nutrients for fortification (as per FCO)	Additional subsidy per tonne of fortified fertilizers (Rs.)
Boron 'Bn'	300
Zinc 'Zn'	500

16.5 Prospects of Fertilizer Consumption

Overall Southwest monsoon (June-September) 2022 has been uneven but overall normal so far. There may be uneven growth in consumption of different fertilizers due to lower cropped area for some crops for *kharif* 2022. Normal Southwest monsoon is likely to leave good moisture contents in the soil for ensuing *rabi* crop season. Water availability in the reservoirs at the end of *kharif* season is also likely to be comfortable. Continuing increase in international prices of fertilizers and raw materials remains the challenge for availability of fertilizers at reasonable prices. Overall growth in consumption of fertilizers for the full year 2022-23 is expected to remain a fairly good over the previous year. ■