

## ANNUAL REVIEW OF FERTILIZER PRODUCTION AND CONSUMPTION 2023-24 HIGHLIGHTS

### Mixed Growth in Production

- **Fertilizer nutrients:** Production in 2023-24: N: 17.11 million MT (+8.7%), P<sub>2</sub>O<sub>5</sub>: 4.88 million MT (-2.6%), N+P<sub>2</sub>O<sub>5</sub>: 21.99 million MT (+6.0%).
- **Fertilizer products:** Production during 2023-24: Urea: 31.41 million MT (+10.2%); DAP: 4.29 million MT (-1.2%); SSP: 4.43 million MT (-21.5%); NP/NPKs: 9.55 million MT (+2.7%), Total products: 50.50 million MT (+3.7%).

### Decline in Import of Major Fertilizers

- **Imports of fertilizer products in 2023-24:** Urea: 7.04 million MT (-7.1%); DAP: 5.57 million MT (-15.4%); NP/NPKs: 2.22 million MT (-19.4%); MOP: 2.87 million MT (+53.8%), Total products: 18.15 million MT (-7.0%).

### Retail Prices of Fertilizers

- Basic retail price (MRP) of urea remained unchanged at Rs.5360/- per MT. Price per bag of urea of 45 kg was fixed at Rs. 242/- w.e.f. 1<sup>st</sup> March 2018. 5% for coating of urea with *neem* oil and 5% GST are additional.
- MRP of P&K fertilizers are market driven under NBS policy. However, Department of Fertilizers has been earmarking indicative MRPs of DAP and NP/NPK complex fertilizers to be made available to the farmers at reasonable prices.

### Positive Growth in Fertilizer Consumption

- **Consumption of nutrients in 2023-24:** N: 20.46 million MT (+1.2%); P<sub>2</sub>O<sub>5</sub>: 8.31 million MT (+4.9%); K<sub>2</sub>O: 1.88 million MT (+9.5%); Total (N+P<sub>2</sub>O<sub>5</sub>+K<sub>2</sub>O): 30.64 million MT (+2.7%).
- **Consumption of fertilizer products in 2023-24:** Urea: 35.78 million MT (+0.2%); DAP: 10.81 million MT (+3.8%); MOP: 1.64 million MT (+0.8%); NP/NPK complex fertilizers: 11.07 million MT (+9.9%); SSP: 4.54 million MT (-9.4%); Total products: 64.84 million MT (+1.6%).

### Change in NPK Use Ratio

- All-India NPK use ratio changed from 11.8:4.6:1 during 2022-23 to 10.9:4.4:1 during 2023-24.

### Increase in Per Hectare Use

- Per hectare use of total fertilizer nutrients (N+P<sub>2</sub>O<sub>5</sub>+K<sub>2</sub>O) increased from 136.2 kg in 2022-23 to 139.8 kg in 2023-24.

### Share in Consumption of Fertilizers in 13 States: 92%

- Uttar Pradesh had the largest share (17.4%), followed by Madhya Pradesh (10%), Maharashtra (9.5%), Punjab (6.4%), Karnataka (6.3%), Rajasthan (6.2%), Gujarat (6.1%), Bihar & Telangana (5.8% each), Andhra Pradesh (5.6%), West Bengal & Haryana (4.7% each) and Tamil Nadu (3.5%).

### Normal Monsoon at the Country Level

- Rainfall was 94% of the LPA during southwest monsoon 2023.
- Out of 36 meteorological sub-divisions, 29 received excess/normal rainfall and remaining 7 sub-divisions received deficient rainfall.

### Decline in Production of Major Crops

- **Production of major crops in 2023-24:** Food grains: 328.9 million MT (-0.2%); oilseeds: 39.6 million MT (-4.3%), sugarcane: 442.5 million MT (-9.8%); cotton: 32.5 million bales (-3.4%) and jute & mesta: 9.7 million bales (+3.4%).

### Fertilizer Policies

#### Budget Allocation for Fertilizer Aubsidy

<b>2023-24</b>	Budget allocation:	Rs.1,75,103 crore
	Revised Estimate:	Rs. 1,88,902 crore
	Urea:	Rs. 1,28,594 crore
	P&K:	Rs. 60,300 crore
<b>2024-25</b>	Budget allocation:	Rs.1,64,103 crore
	Budget for Urea:	Rs. 1,19,000 crore
	Budget for P&K:	Rs. 45,000 crore

### Urea

- Continuation of representations with the DoF on the issues of fixed cost, production beyond reassessed capacity, target energy norms, recognition of investment in energy improvement projects, incentives for mixed fuel used by urea units, freight subsidy, etc.

### P&K Fertilizers

- Representations with the DoF on the issues of P&K fertilizers, such as, reasonableness of MRPs, NBS rates, freight subsidy, GST rates and customs duty, etc. are continuing.
- Reduction in NBS rates on P&K fertilizers for 2023-24. ■

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# ANNUAL REVIEW OF FERTILIZER PRODUCTION AND CONSUMPTION 2023-24

## EXECUTIVE SUMMARY

The inventory of fertilizers at the beginning of the year was adequate in different distribution channels to meet the demand. Weather was normal during monsoon period. However, dry spell during August was witnessed. Sown area under *kharif* and *rabi* crops was marginally up. Volatile international prices of raw materials and finished fertilizers resulted fall in imports of major fertilizers. Domestic production and sale of fertilizers showed an increase over the previous year. Production from newly commissioned urea plants contributed more secure availability of urea during 2023-24. However, a few urea plants suffered equipment problems during the year. Some DAP/NP/NPK fertilizers also suffered due to raw material limitations.

### SOUTHWEST MONSOON

There had been delay in onset of southwest monsoon in 2023 and reached Kerala on 8<sup>th</sup> June, 2023. Rainfall during June was 9% below the long period average (LPA). July saw a surplus of 13% rainfall, while August was notably dry, with 36% below LPA. September rainfall was 13% above LPA. Overall monsoon was 94% of the LPA. Out of 36 meteorological sub-divisions, 29 received normal to excess rains. However, uneven distribution raised concerns for *kharif* crops, particularly in regions like Bihar, East Uttar Pradesh, and Kerala. The monsoon withdrew on 19<sup>th</sup> October, 2023.

Total live storage capacity in 150 reservoirs in the country was 178.78 billion cubic meter (BCM). Live storage available in these reservoirs was 129.67 BCM as on 29<sup>th</sup> September, 2023 as against 158.74 BCM on the same date in the previous year. Live storage during the period was 82% of the last year and 92% of the normal storage.

### FERTILIZER CONSUMPTION

Consumption of fertilizer nutrients (N+P<sub>2</sub>O<sub>5</sub>+K<sub>2</sub>O) estimated at 30.64 million MT during 2023-24, registered a growth of 2.7% over 2022-23. Consumption of N, P<sub>2</sub>O<sub>5</sub> and K<sub>2</sub>O at 20.46 million MT, 8.31 million MT and 1.88 million MT during 2023-24 showed increase of 1.2%, 4.9% and 9.5%, respectively, over 2022-23.

In terms of product, All-India estimated consumption (based on DBT sale) of urea at 35.78 million MT, DAP at 10.81 million MT, MOP at 1.64 million MT and NP/NPK complex fertilizers at 11.07 million MT during 2023-24 recorded increase of 0.2%, 3.8%, 0.8% and 9.9%, respectively, over 2022-23. There had been 9.4% decline in consumption of SSP during the period. In 2023-24, consumption of SSP was 4.54 million MT. Total consumption of all fertilizer products at 64.84 million MT during 2023-24 registered an increase of 1.6% over 2022-23.

All-India NPK use ratio changed to 10.9:4.4:1 during 2023-24 from 11.8:4.6:1 during 2022-23. Per hectare use of total nutrients (N+P<sub>2</sub>O<sub>5</sub>+K<sub>2</sub>O) improved from 136.2 kg in 2022-23 to 139.8 kg in 2023-24.

### FERTILIZER INVENTORY

There was comfortable availability of fertilizers from opening inventory during 2023-24. Inventory of urea at various points was about 5.72 million MT at the beginning of 2023-24. Inventory of DAP was about 2.54 million MT, NP/NPKs 3.05 million MT, SSP 1.97 million MT and MOP 0.32 million MT.

### PRODUCTION OF FERTILIZERS

Fertilizer production at 21.99 million MT (N+P<sub>2</sub>O<sub>5</sub>) during 2023-24 recorded an increase of 6% over 2022-23. Production of nitrogen (N) increased by 8.7% to 17.11 million MT whereas phosphate

(P<sub>2</sub>O<sub>5</sub>) declined by 2.6% to 4.88 million MT in 2023-24.

In terms of products, production of urea at 31.41 million MT and NP/NPK complex fertilizers at 9.55 million MT during 2023-24 recorded increase of 10.2% and 2.7%, respectively, over 2022-23. However, production of DAP at 4.29 million MT and SSP at 4.43 million MT registered decline of 1.2% and 21.5%, respectively, during the period.

### GAS AVAILABILITY

Supply of domestic gas to fertilizer plants has fallen gradually over the years. This has made fertilizer plants more and more dependent on imported LNG. However, domestic gas share showed an increase during 2023-24 to 20.2% for urea sector compared to 14.2% in 2022-23 due to supply of gas from high pressure and high temperature (HP-HT) gas from KG-D6 fields during the year.

### IMPORT OF FERTILIZERS

Despite increase in domestic fertilizer production, India still relies on imports to meet about 30% of its demand. In 2023-24, the gap between consumption and production was 3.35 million MT for N and 3.43 million MT for P<sub>2</sub>O<sub>5</sub>. Entire demand of K<sub>2</sub>O is met through import. Urea imports decreased by 7.1% to 7.04 million MT due to contribution from new plants, while import of DAP and NP/NPK fertilizers fell by 15.4% and 19.4% due to high international prices. However, there had been increase in import of MOP by 53.8% to 2.87 million MT during the period.

### RETAIL PRICES OF FERTILIZERS

The basic retail price of urea remained unchanged at Rs.5360 per MT since November 2012. Effective from 25<sup>th</sup> May, 2015, Government of India (GoI) made it mandatory for all indigenous urea manufacturers to produce 100% *neem* coated urea. The same policy was applied for imported urea at the port. GoI allowed the manufacturers / importers to charge 5% extra on the MRP of urea for the same. Government has made it mandatory to resize urea bag from 50 kg to 45 kg. The maximum retail price (MRP) per bag of urea of 45 kg was fixed at Rs. 242/- *w.e.f.* 1<sup>st</sup>

March 2018 from Rs. 268/- per bag of 50 kg earlier. In addition, GoI notified MRP of sulphur coated urea with the name of 'Urea Gold' on 5<sup>th</sup> January, 2024. The MRP of 40 kg bag of sulphur coated urea has been fixed at the same level as that of 45 kg bag of *neem* coated urea *i.e.* Rs 266.50 (inclusive of GST).

The retail prices of P & K fertilizers covered under NBS scheme were market driven. In view of volatile international prices of P&K fertilizers and raw materials used for production of phosphatic fertilizers, Government insulate the farmers from hike in such prices by providing additional subsidy. However, DoF has been earmarking indicative the MRPs of DAP and NP/NPK complex fertilizers to be made available to the farmers at reasonable prices.

### PRODUCTION OF MAJOR CROPS

Total production of food grains is estimated to be 328.9 million MT during 2023-24 compared to 329.7 million MT in 2022-23. Among food grain crops, production of rice and wheat is expected to increase by 0.7% and 2.1%, respectively, during 2023-24 over 2022-23. However, production of pulses and coarse cereals is estimated to decline by 6.0% and 4.5%, respectively, during the period. Similarly, production of oilseeds, sugarcane and cotton are expected to decline by 4.3%, 9.8% and 3.4%, respectively. However, production of jute & mesta is estimated to increase by 3.4%.

### POLICY AND PAYMENT ISSUES

Representations to the DoF on the issues of fixed cost, production beyond reassessed capacity, target energy norms, recognition of investment in energy improvement projects, incentives for mixed fuel used by urea units, etc. are continuing. Representations to the DoF on the issues of P&K fertilizers, such as, reasonableness of MRPs, reduction in NBS rates, non-revision of freight subsidy, GST and customs related issues, etc. for P&K sector are also continuing.

Government had budgeted Rs.1,75,103 crore for fertilizer subsidy for the year 2023-24, which was revised to Rs. 1,88,902 crore. However, the NBS rates on P&K fertilizers during 2023-24 were reduced.

## OUTLOOK FOR 2024-25

### POLICY AND PAYMENT ISSUES

DoF notified per kg subsidy rates for *kharif* 2024 under NBS policy. There has been increase in NBS rate on P over *rabi* 2023-24 but there is no change in NBS rates on N, K and S and kept at the level of *rabi* 2023-24. Three new grades of fertilizers *viz.*, 11-30-14 fortified with magnesium, zinc, boron and sulphur; Urea-SSP-complex (5-15-10-0) and SSP (0-16-0-11) fortified with magnesium, zinc and boron have been included in NBS policy *w.e.f.* 1<sup>st</sup> April, 2024.

Budget allocation for 2024-25 has been fixed at Rs. 1,64,103 crore. Budget for urea and P&K is Rs. 1,19,000 crore and Rs. 45,000 crore, respectively. Adequacy of allocation will depend on international prices of energy, fertilizers and raw materials during the year.

### SOUTH-WEST MONSOON

Southwest monsoon 2024 set in over Kerala 2 days advance of the normal date and reached most parts of northeast India on 30<sup>th</sup> May 2024. It had covered the entire country by 2<sup>nd</sup> July, 2024. Rainfall during June 2024 was 11% below LPA but 9% above LPA during July 2024. IMD predicted normal rains during August 2024. Cumulative rains during 1<sup>st</sup> June to 26<sup>th</sup> August, 2024 was normal at 6% above LPA. Out of 36 meteorological sub-divisions, 32 received normal to excess rains while 4 received deficient rains during the period. Out of 724 reported districts, 73% received normal to excess rains during the period.

Total live storage capacity in 155 reservoirs is 180.85 BCM at full reservoir level. Live storage available in these reservoirs was 130.80 BCM as on 22<sup>nd</sup> August, 2024 compared to 114.66 BCM on

the same date in the previous year. Current year's storage accounts 114% of the last year's storage and 112% of the normal storage.

### CROP SITUATION

Monsoon became active over most parts of India during July 2024. As per the latest available information, total sown area under all *kharif* 2024 crops was 103.16 million ha compared to 101.05 million ha during the corresponding period in the previous year.

### FERTILIZER SALE

Sale of urea at 10.89 million MT, NP/NPKs at 3.93 million MT and MOP at 0.49 million MT during April-July 2024 recorded increase of 1.6%, 42.4% and 36.3%, respectively, over April-July 2023. However, sale of DAP at 2.94 million MT and SSP at 1.55 million MT witnessed decline of 14.1% and 8.4%, respectively, during the same period.

### PROSPECTS OF FERTILIZER CONSUMPTION

Overall Southwest monsoon 2024 is anticipated to be above normal. This is likely to increase cropped area during the remaining period of *kharif* 2024. 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. Overall growth in consumption of fertilizers for the full year 2024-25 is expected to register an increase over the previous year. ■

## Annual Review of Fertilizer Production and Consumption 2023-24

### 1.0 POLICIES RELATED TO FERTILIZER SECTOR

#### 1.1 Issues of Urea Industry

FAI has been putting up its sincere efforts for amicable solutions by the Department of Fertilizers (DoF) of the problems of the urea sector. The issues *inter-alia* comprise of existing urea policy framework, encircling concerns such as revision of minimum fixed cost, linking of fixed cost with appropriate cost index, production beyond reassessed capacity, target energy norms, recognition of investment in energy improvement projects, incentives for mixed fuel using units, etc. These issues along with measures for increasing indigenous production were submitted to the DoF.

##### 1.1.1 Revision of Fixed Cost of Urea Manufacturing Units

As a result of the various representations made by FAI to the DoF on the issue of revision in minimum fixed cost of urea manufacturing units, the Department sent a mail to FAI on 27<sup>th</sup> February, 2024 stating that O/o Chief Adviser Cost (CAC) had desired information from urea manufacturing units in a specific format and questionnaire on revision of fixed cost. A meeting was convened under the Chairmanship of Director (UPP) by DoF on the 5<sup>th</sup> March, 2024 for discussion of the doubts/objections/suggestions of urea manufacturing units with the officials of CAC and FICC. Representatives of urea manufacturing companies attended the meeting. Meetings were also held subsequently to discuss the format for computation of fixed cost. The format is under finalization.

##### 1.1.2 Production of Urea Beyond Reassessed Capacity

Industry has been highlighting concerns about the production of urea beyond reassessed capacity (RAC), particularly due to falling international urea prices and high gas costs tied to crude prices. Such factors are threatening the financial viability of urea units, potentially leading to plant shutdowns, penalties under gas supply contracts, and increased reliance on imports, which could drive up global urea prices. Industry has been requesting for equitable comparison of urea production and removal of the IPP cap and additional compensation for production of urea beyond RAC. Lot of representations to DoF were made by FAI on the issue and also discussion with the Department. The matter has now been referred to the Expert Committee of NITI Aayog to recommend the policy for production of urea beyond reassessed capacity along with target energy norms beyond 2025.

##### 1.1.3 Energy Consumption Norms Beyond 2025

An Expert Group has been constituted at NITI Aayog

to recommend the target energy norms for urea plants beyond 2025. Two meetings of the Expert Group have been held. In the second meeting held in May, 2024, urea industry was invited to present their views. Industry representatives highlighted that policies prior to NPS Stage-II had been recognizing capital investment as a part of capital related charges. During 2003 and later in the policy for debottlenecking in 2004, Government promulgated that there shall neither be any reimbursement of the investment made by a unit for improvement in operations nor any mopping up of gains of the units as a result of operational efficiency. Contrary to policy, energy norms were revised during NPS-III and New Urea Policy (NUP) 2015. Under NUP 2015, energy norms of 25 gas-based urea plants were revised for the period 2015-16 to 2017-18 and further from 2018-19 onwards. Industry made huge investments in energy saving schemes, debottlenecking and modernization of plants. Further, fixed cost has not been revised proportionately. It was requested that since the industry has already achieved a high level of efficiency, there should not be further tightening of energy consumption norms. Special dispensation needs to be provided to the plants using mixed energy. Chairman, Expert Committee sought feedstock on the potential of energy savings in each urea unit, investment required, payback period, etc. from PDIL and BEE.

##### 1.1.4 Policy Relating to Surplus Ammonia from Urea Units

DoF issued a notification on policy relating to surplus ammonia from urea units on 6<sup>th</sup> August, 2024 by referring its earlier notification dated the 19<sup>th</sup> August, 2008 on the subject matter. DoF advised urea manufacturing units to take the following actions:

- a. The units producing surplus ammonia, but do not have carbon dioxide recovery (CDR) plant, are advised to install CDR plants to optimize their urea production from the surplus ammonia produced by such units; and
- b. Priority for selling of surplus ammonia may be given to the P&K manufacturers, if demand for procurement of surplus ammonia comes from P&K manufacturing units.

##### 1.1.5 Procurement of Natural Gas from IGX Platform

DoF issued an OM dated 22<sup>nd</sup> January, 2024 allowing procurement of natural gas through IGX portal by urea manufacturing units. Procurement of 0.5 MMSCMD domestic gas was permitted on trial basis for 3 months from March to May, 2024. During the trial period, there would not be any transaction

charges. M/s GAIL has been nominated as aggregator. However, urea units can also procure gas directly.

### 1.1.6 Continuation of Ongoing Urea Subsidy Scheme

DoF issued a notification as approved by the Cabinet Committee on Economic Affairs (CCEA) on 13<sup>th</sup> July, 2023 regarding continuation of existing urea subsidy scheme upto 31<sup>st</sup> March, 2025 from 2022-23 to 2024-25 at a total estimated outlay of Rs. 3,68,676.70 crore. The actual expenditure may vary based on the prices of natural gas and other inputs for the production of urea.

### 1.1.7 MRP of Sulphur Coated Urea

The CCEA in its meeting held on 28<sup>th</sup> June, 2023 approved launching of sulphur coated urea (SCU) (Urea Gold). Subsequently, DoF vide notification dated 5<sup>th</sup> January, 2024 fixed MRP of SCU in 40 kg bag at Rs. 266.50, identical to 45 kg bag of *neem* coated urea, inclusive of GST.

### 1.1.8 Optimizing Indigenous Production of Urea

DoF issued a notification on 15<sup>th</sup> January, 2024 which stated that in view of ongoing peak season, urea manufacturing units may take urgent steps to maximize urea production and not to plan any shutdown during the financial year 2023-24 so that the Government could meet the demand and ensure timely availability of urea in the country.

### 1.1.9 Revision of Freight Rates

In view of the non-revision of freight rates since 2020-21, FAI wrote a letter to the Secretary (Fertilizers) in April, 2024 requesting therein for the revision in freight rates of fertilizers and related issues. Since 2020-21, there have been significant increases in diesel prices and other costs associated with the freight, but the urea industry continues to be reimbursed the freight based on 2020-21 rates.

It was mentioned that freight is an important component of supply chain to ensure smooth movement of urea across the country. It was requested to expedite the notification of freight rates for 2021-22 to 2023-24. The future revisions in freight rates were requested to be notified in a time-bound manner after close of the relevant financial year to provide clarity and stability for the industry.

It was also highlighted that for P&K manufacturers/importers, primary freight rates have not been revised since April 2012, despite three revisions in railway freight rates. There is also a provision for special compensation for secondary movement of P&K fertilizers to difficult areas/regions, but the rates are yet to be revised.

## 1.2 Policies Related to P&K Fertilizers

### 1.2.1 NBS Policy for Kharif 2023

Department of Fertilizers vide O.M. dated 18<sup>th</sup> May, 2023 notified NBS rates for P&K fertilizers for *kharif* 2023 effective from 1<sup>st</sup> April to 30<sup>th</sup> September, 2023. Per kg NBS rates of N, P, K and S were fixed at Rs. 76.49, Rs. 41.03, Rs. 15.91 and Rs. 2.80, respectively. There had been considerable reductions in NBS rates for N, P and K compared to January-March, 2023. Accordingly, subsidy per MT of DAP, MOP and SSP was fixed at Rs. 32,641, Rs. 9,547 and Rs. 6,872, respectively, for the said period. Subsidy on NP/NPK grades of fertilizers ranged between Rs. 18,077 per MT and Rs. 32,906 per MT. Subsidy on potash derived from molasses was increased to Rs. 2,307 per MT. However, per MT additional subsidy for fortified fertilizers with boron and zinc continued at the same level of Rs. 300 and Rs. 500, respectively.

### 1.2.2 NBS Policy for Rabi 2023-24

In its various representations, FAI requested DoF for continuation of *kharif* 2023 subsidy rates for the *rabi* 2023-24 season, citing high costs and international raw material prices. FAI urged stable subsidies and highlighted the adverse effects of frequent changes in NBS rates. Association also sought guidance from member of NITI Aayog, Prof. Ramesh Chand, emphasizing challenges due to deviations from NBS guidelines, which have led to financial losses for the industry amidst global price volatility and informal MRP directives.

Further, FAI urged the government to promote SSP by revising the subsidy mechanism to reduce reliance on DAP imports. It was suggested to include products like DAP lite and MAP lite under the subsidy scheme. FAI highlighted that with DAP imports expected in September 2023 for the *rabi* 2023-24 season, the industry anticipates a loss of Rs. 11,000 per MT due to the current subsidy structure. FAI requested the DoF to reassess DAP demand and imports for the *rabi* season to ensure financial viability.

However, DoF notified the NBS rates for P&K fertilizers for *rabi* 2023-24 effective from 1<sup>st</sup> October, 2023 to 31<sup>st</sup> March, 2024 on 26<sup>th</sup> October, 2023. Per kg NBS rates of N, P, K and S were reduced significantly and fixed at Rs. 47.02, Rs. 20.82, Rs. 2.38 and Rs. 1.89, respectively, for *rabi* 2023-24. In case of DAP, Rs. 4,500 per MT was given as special package for *rabi* 2023-24. Accordingly, subsidy per MT on DAP, MOP and SSP got reduced from Rs. 32,641, Rs. 9,547 and Rs. 6,872 per MT during *kharif* 2023 to Rs. 22,541, Rs. 1,427 and Rs. 3,540 per MT, respectively, for the *rabi* 2023-24. Subsidy on NP/NPK grades of fertilizers ranged between Rs. 8,634 per MT and Rs. 18,995 per MT during the period. Subsidy on potash derived from molasses



was reduced to Rs. 345 per MT. However, per MT additional subsidy for fortified fertilizers with boron and zinc continued and remained unchanged at Rs. 300 and Rs. 500, respectively.

In this context, FAI convened a virtual meeting with P&K fertilizer manufacturers to address the challenges posed by the NBS rates on business sustainability and fertilizer availability during the *rabi* season. Industry raised concerns about rising international prices for DAP, phosphoric acid, and ammonia, alongside reduced subsidies, leading to significant financial losses from pipeline inventories procured at higher costs. In a letter to the Secretary (Fertilizers) in October 2023, FAI requested for a revision of NBS rates from January 2024, emphasizing the need for a level playing field for importers and manufacturers and the impact on soil health. Further, FAI also urged that it is essential to consider the prices of raw materials and other fixed cost by excluding GST from MRP to arrive at accurate subsidy component. Subsequently, key industry leaders met the Secretary (Fertilizers) and discussed the critical issues with him.

### 1.2.3 NBS Policy for Kharif 2024

Department of Fertilizers notified NBS rates for P&K fertilizers for *kharif* 2024 on 1<sup>st</sup> March, 2024. DoF revised the per kg NBS rate on P from Rs. 20.82 for *rabi* 2023-24 to Rs. 28.72 for *kharif* 2024. However, NBS rates per kg for N, K and S remained unchanged at the *rabi* 2023-24 level. Accordingly, per MT subsidy on DAP has been reduced from Rs. 22,541 for *rabi* 2023-24 to Rs. 21,676 for *kharif* 2024 as the special package of Rs. 4,500 per MT on DAP, notified for *rabi* 2023-24, has been withdrawn. However, as per the statement given by the Minister of State for Chemicals and Fertilizers in the Lok Sabha on 9<sup>th</sup> August, 2024 that due to the recent geo-political situation which is adversely affecting the viability of DAP for the producers/importers, the Government has approved the special package @Rs. 3500 per MT on DAP over and above the NBS subsidy rates on actual PoS sale for the period 1<sup>st</sup> April, 2024 till 31<sup>st</sup> December 2024. Subsequently, DoF has asked the manufacturers/ importers of DAP to submit the supplementary claim on account of special package (interim) from 1<sup>st</sup> April to 15<sup>th</sup> August, 2024 @ Rs.1750 per MT as per the proforma. The submission of claims beyond 15<sup>th</sup> August, 2024 would be informed by the DoF in due course.

Subsidy per MT on SSP increased to Rs.4804 for *kharif* 2024. However, subsidy on MOP remain unchanged at Rs.1427 per MT. Subsidy on NP/NPK grades of fertilizers ranged between Rs.6849 and Rs.21208 per MT during *kharif* 2024.

Per MT additional subsidy for fortified fertilizers with boron and zinc continued to be the same. Three new grades of fertilizers *viz.*, 11-30-14 fortified with magnesium, zinc, boron and sulphur; Urea-SSP-complex (5-15-10-0) and SSP (0-16-0-11) fortified with magnesium, zinc and boron have been included in NBS policy *w.e.f.* 1<sup>st</sup> April, 2024.

In this context, Chairman, FAI wrote a letter to the Secretary (Fertilizers) in March 2024, appreciating the early announcement of NBS rates for *kharif* 2024 and inclusion of three new fertilizer grades. However, the letter highlighted the challenges faced by the industry, such as volatile international prices, indicative MRP, and half-yearly changes in subsidy rates which are affecting stock availability and pricing dynamics. The industry requested flexibility in MRP to recover increased procurement costs, inclusion of fortified fertilizers with magnesium in NBS policy and implementation of reasonableness guidelines from prospective annual year dates. It also sought additional subsidy provision for April-June 2024 due to inadequate funds from the interim budget. The industry emphasized its commitment to working with the government to ensure efficient fertilizer supply for the upcoming crop season.

### 1.2.4 Reasonableness of MRP of P&K Fertilizers

Department of Fertilizers constituted a committee on 28<sup>th</sup> April, 2023 to review the reasonable profit and indigenous investment in the P&K sector. The committee had preliminary review meeting on 1<sup>st</sup> May, 2023 and suggested to have the views of the industry on the reasonableness of MRP/profit. The views of the industry were summarized and presented to the committee on 8<sup>th</sup> May, 2023 and suggested exclusion of GST for determining reasonableness margin. The reasonableness criteria should be prospective and not retrospective and need to be applied at business level and not at product level. Reasonableness of margin needs to be evaluated once in a year based on the cost audit statements furnished by the companies and differential rates can be considered for domestic players vs. importers. FAI also brought out the facts on rationale of discounts, limitations in creation of profit pool, etc. It was suggested to the committee to modify the cost data format for both indigenous and imported one.

Further, DoF invited all P&K fertilizer manufacturers and importers on 9<sup>th</sup> June, 2023 and made a presentation followed by discussion and requested the companies to furnish their views on each point to FAI to submit a consolidated report

on the same. Based on the inputs received from different companies, FAI submitted summarized views to the Joint Secretary, DoF on 15<sup>th</sup> June, 2023. Several key considerations were highlighted. These included proposed reasonableness criteria for integrated manufacturers, minimum threshold of 75% capacity utilization for integrated players, rebates on dealer's margins and discounts, emphasizing the need for a balanced approach to enhance capacities with a 3 to 5-year investment cycle, and evaluation of reasonableness criteria on a portfolio basis for domestic and imported products.

### **1.2.5 Guidelines Regarding Evaluation of Reasonableness of MRPs of P&K Fertilizers**

Department of Fertilizers issued guidelines on evaluation of reasonableness of MRPs of P&K fertilizers under NBS policy on 18<sup>th</sup> January, 2024. The guidelines were made effective from 1<sup>st</sup> April, 2023. In this connection, Chairman, FAI conducted a virtual meeting on 22<sup>nd</sup> January, 2024 with P&K manufacturers/importers. The members discussed the pros and cons of the guidelines. Based on the meeting, a letter from Chairman, FAI was sent to the Secretary (Fertilizers) on 1<sup>st</sup> February, 2024 requesting therein some clarifications and changes in the guidelines.

FAI also arranged a meeting of some of the representatives from the SSP industry with the Secretary (Fertilizers) on 2<sup>nd</sup> February, 2024 and submitted a representation. It was requested that to reduce import dependence on P&K fertilizers and save subsidy, SSP production in the country must be encouraged.

### **1.2.6 Constitution of a Committee to Recommend Format for Cost Data for P & K Fertilizers**

As per the Office Memorandum dated 9<sup>th</sup> February, 2024, DoF constituted a committee under the Chairmanship of Special Secretary, DoF to recommend an updated format for cost data along with cost auditor report format for P & K fertilizers. The members of the committee comprised of Joint Director, FICC; industry representative from FAI; Director, RCF; and Deputy Director, NIC.

DoF requested FAI to nominate an industry representative to attend a meeting scheduled on 15<sup>th</sup> February, 2024 to recommend an updated format for cost data along with cost auditor report format under reasonability guidelines dated the 18<sup>th</sup> January, 2024. Accordingly, FAI nominated Director (CRS), IFFCO, New Delhi as an industry representative.

FAI was asked to submit the suggestions to be considered while designing the cost data format.

DoF initiated the process to finalize the cost data format for P&K fertilizers, involving industry feedback through FAI. After a series of meeting, the final cost data format and audit reports were discussed in May 2024. FAI requested the Committee members that there is a need on changes required in the provisions relating to separate segment reporting, interest expenses and allowing discount in calculation of the reasonable MRPs, etc. Chairperson of the Committee stated that these points are related to policy which are out of the purview of the Committee. However, she assured that these points would be discussed when the policy would be reviewed. Subsequently, based on the suggestions of the members, correspondences were sent to DoF. FAI remains active in seeking clarifications and advocating for industry issues, particularly, regarding cost audit processes and the calculation of MRP reasonableness, which are crucial for the sector's viability. The matter is still under consideration of the DoF.

### **1.2.7 Potash Derived from Molasses**

Secretary (Food and Public Distribution) and the Secretary (Fertilizers) chaired a meeting with FAI and industry representatives in November, 2023 on production and promotion of potash derived from molasses (PDM). It was informed that PDM was notified under FCO in 2009 with a minimum 14.5% K<sub>2</sub>O content and included in the NBS scheme in *rabi* 2021-22 to reduce MOP import dependency. Around 0.5 million MT of potash ash, including PDM, was sold in 2022-23, with 94 distilleries capable of producing 1.2 million MT annually. PDM has the potential to replace 0.3 million MT of MOP. The government established a Joint Working Group (JWG) to promote PDM quality production, involving long-term offtake agreements, quality control, and costing. Meetings among JWG members led to an agreed price of Rs. 4263 per MT. DoF issued SOPs on 7<sup>th</sup> March, 2024, detailing production requirements, including equipment, raw material restrictions, and product specifications. The LTOA process between distilleries and fertilizer companies is ongoing with the goal of ensuring consistent quality PDM production.

### **1.2.8 SSP Industry**

#### **1.2.8.1 Fortified SSP with Zn, Mg and B**

FAI persuaded the issue with the DoF to include SSP fortified with Zn, Mg and B under NBS scheme. After seeking the information on production plan, impact on freight cost, estimated MRP, additional capacity required and indigenous content of the product, etc. from FAI, DoF vide OM dated 1<sup>st</sup> March, 2024 notified two new grades of SSP *viz.* SSP fortified with Zn, Mg and B along with Urea-SSP Complex (5-15-0-10) in NBS scheme *w.e.f.* 1<sup>st</sup> April, 2024.

### 1.2.8.2 PMKSK for SSP Industry

In view of having small working capital being in MSME category, other limitations and high operational cost of Pradhan Mantri Krishi Samridhi Kendras (PMKSKs), a request made by FAI to the Additional Secretary, DoF in May 2023 that for participation of the SSP industry in the PMKSK, it should be considered on the basis of sale quantity on nutrient rather on product and SSP unit producing less than 50,000 MT annually should not be considered for participation in the scheme. It was also mentioned that keeping in view the limitation of the Industry, the allotment of PMKSK for SSP Industry should be done at village level only.

### 1.2.8.3 Freight Subsidy Policy for SSP Industry

In September 2022, DoF extended the freight subsidy policy for the SSP industry, aligning it with P&K fertilizers. The policy included a railway freight subsidy on an actual basis for distances of 200-500 km, and for *rabi* 2023-24, Rs. 360 crore was allocated, based on a sale estimate of 3 million MT. However, concerns arose regarding the subsidy mechanism. On 1<sup>st</sup> November, 2023, FAI represented the issue to DoF to reconsider existing freight subsidy mechanism for the SSP industry. In view of involvement of inward freight for raw materials and outward freight for finished fertilizers, it was proposed that a lump sum freight subsidy of Rs.1200/- per MT may be allowed to SSP manufacturers for a level playing field to all manufacturers. A request was also made to DoF to expedite the payment of freight to the SSP industry.

### 1.2.8.4 Mini SSP

Due to limited availability of indigenous rock phosphate, scarcity of rock phosphate containing 30% P<sub>2</sub>O<sub>5</sub> and price volatility in the international market, FAI suggested DoF in September 2023 to allow the use of rock phosphate containing 26% P<sub>2</sub>O<sub>5</sub> which is readily available in the market for production of a new grade of SSP (15% available P<sub>2</sub>O<sub>5</sub>, out of which 13% to be water soluble P<sub>2</sub>O<sub>5</sub>) and inclusion in FCO, 1985 as mini SSP.

### 1.2.8.5 Rationalization/ Consolidation of Guidelines Pertaining to SSP Industry

On 21<sup>st</sup> September 2022, DoF issued guidelines to rationalize and consolidate policies for the SSP industry, ensuring the availability of quality raw materials and adherence to FCO specifications. Key guidelines covered eligibility criteria for new and existing SSP units under the NBS, technical audits, sourcing and testing of raw materials, blending grades of rock phosphate, import/purchase of rock phosphate, and provisions for freight subsidy and export of SSP. A significant provision was that no filler should be added when producing SSP from rock phosphate. In the subsequent discussions, FAI requested DoF to

allow the use of fillers for manufacturing GSSP and to permit the use of rock phosphate containing 29% P<sub>2</sub>O<sub>5</sub> for SSP production, provided specific conditions were met. After consulting PDIL, FAI was advised to approach ICAR for its opinion on these issues. In August 2023, ICAR tentatively supported the use of fillers, provided FCO standards were maintained.

Additionally, FAI requested exemptions from testing for indigenous rock phosphate sourced from RSMM, which was granted by DoF in May 2023. FAI further sought similar exemptions for other suppliers and requested that BRP units be allowed to self-certify quality before dispatching to SSP manufacturers. Regarding production criteria for subsidy eligibility of SSP with a minimum annual production of 50,000 MT to be effective from 1<sup>st</sup> April, 2024, the DoF as per the request of FAI extended the effective date of this requirement to 1<sup>st</sup> April 2025, subject to Cabinet approval.

## 1.3 Other Policy Related Issues

### 1.3.1 Quality Control Order for Ortho-Phosphoric Acid and Others

Bureau of Indian Standards (BIS) vide a notification issued in December 2023 had withdrawn the exemption provided to captive phosphoric acid used for manufacture of fertilizers from its standard. As the ortho-phosphoric acid was covered under Quality Control Order (QCO) since 2021, it resulted in hurdles in clearing of cargos of ortho-phosphoric acid. FAI intervened in the matter and requested the DoF and the Department of Chemicals and Petrochemicals (DCPC) to exclude ortho-phosphoric acid from the mandatory QCO. On 13<sup>th</sup> April, 2024, DCPC issued a notification exempting ortho-phosphoric acid used for fertilizer production from the QCO for 90 days and requested that during this period exporter may complete the registration process under QCO. FAI strongly represented that due to technical limitations, it will not be possible to adhere to the BIS standard for production of phosphoric acid and requested a permanent exemption from QCO. A series of discussion were held with DoF and DCPC and technical justification were submitted. On 26<sup>th</sup> July, 2024, DCPC issued a Gazette Notification exempting ortho-phosphoric acid used for production of fertilizers from the preview of QCO. Further, FAI is also representing to the DoF and DCPC to exempt ammonia, sulphuric acid and technical grade urea from the preview of QCO as India is heavily dependent on import of these materials for production of fertilizers.

### 1.3.2 Green Ammonia for DAP/NPK Complex Fertilizer Plants

Ministry of New and Renewable Energy (MNRE) issued Guidelines for Mode-2A of the Strategic

Intervention for Green Hydrogen Transition (SIGHT) for procurement of green ammonia on 16<sup>th</sup> January, 2024. MNRE discussed the draft RfS (request for selection) of bidders for purchase of green hydrogen based on Guidelines with stakeholders. After considering the suggestions, final RfS was issued, wherein some concerns of the stakeholders were addressed.

Solar Energy Corporation of India Limited had issued a tender for procuring green ammonia in Trance I for 5.39 lakh MT for green ammonia on 7<sup>th</sup> June 2024 which was later increased to 7.50 lakh MT per annum.

### 1.3.3 Developments Related to Fertiliser Control Order

Four meetings of Central Fertilizer Committee (CFC) were held under the Chairmanship of Agriculture Commissioner, Ministry of Agriculture and Farmers Welfare during the year 2023-24. A number of proposals of member companies for inclusion of new fertilizer products in FCO, addition/renewal of grades of customized fertilizers, amendments in specifications of fertilizers and method of analysis of fertilizers came up for discussion in the meetings. After detailed examination, CFC recommended the inclusion of following in the FCO:

#### Inclusion of New Fertilizer Products

Following fertilizer grades were notified in Gazette of India, Government of India, Ministry of Agriculture and Farmers Welfare as per CFC recommendation in 2023-24.

- Chelated Calcium as Ca-EDTA having 9% Ca
- Chelated Magnesium as Mg-EDTA containing 5% Mg
- Chelated Manganese as Mn-EDTA having 10% Mn
- Chelated Copper as Cu-EDTA containing 12% Cu
- SSP fortified with Zinc, Boron and Iron (16% P<sub>2</sub>O<sub>5</sub>, 0.5% Zn, 0.2% B, 0.25% Fe)
- Zinc Gluconate containing 12% Zn in liquid fertilizer category
- Nano Urea
- Nano DAP
- Nano Phosphorus
- NPS 10-0-75 (10% N, 75% elemental S) for 1 year effective from 29<sup>th</sup> November, 2023 under Clause 20
- Phospho Gypsum (Granular) having 13% S under Clause 20A for 3 years effective from 23<sup>rd</sup> September, 2023
- Customized Fertilizers: Clause 20 B
- N:P<sub>2</sub>O<sub>5</sub>:K<sub>2</sub>O:S:Zn:B (14:22:12:5:0.5:0.05) – for maize as basal
- N:P<sub>2</sub>O<sub>5</sub>:K<sub>2</sub>O:S:Zn (12:22:18:5:0.5) – for paddy as basal

- N:P<sub>2</sub>O<sub>5</sub>:K<sub>2</sub>O:S:Zn:B (12:16:18:6:0.6:0.1) – for potato as basal

#### Inclusion of Methods of Analysis of Fertilizer Products

- Zinc content in Chelated Zinc as Zinc Glycine by AAS
- Calcium content in Chelated Calcium as Calcium Glycine by AAS
- Chelated Manganese as Mn- EDTA
- Chelated Calcium as Ca-EDTA
- Chelated Magnesium as Mg-EDTA
- Chelated Copper as Cu-EDTA
- Orthosilicic Acid

#### Other Amendments

The particle size of sulphur coated urea should be that minimum 90% of the material shall be retained between 8 mm and 1.5 mm IS sieve.

For fermented organic manure (FOM) and liquid fermented organic manure (LFOM), C:N ratio should be upto 30 and pH from 6.5 to 8.4. . Moisture is notified as 30-70% in FOM. In both these fertilizers, a note should be indicated on the container that these fertilizers are to be used 15-25 days prior to sowing of crop in the field.

In Clause 20C, provisional registration under sub-clause (4) is granted to any person to continue to manufacture or import for sale, sell, offer for sale, stock or exhibit such bio-stimulants for a period of four years from the date of publication of this order issued vide S.O. 795 (E) dated 20<sup>th</sup> February, 2024. In Form G-3, certificate of provisional registration was extended upto 22<sup>nd</sup> February, 2025.

Omitting nitrogen concentration (%), viscosity in cps and pH in specification of Nano Nitrogen vide S.O. 5051 (E) dated 23<sup>rd</sup> November, 2023, only particle size in nm and zeta potential in mv were retained in Schedule VII. Company-wise specifications for Nano DAP, Nano-urea and Nano phosphorus were issued by order dated 29<sup>th</sup> November, 2023 under clause 20D.

Central Government of India authorized 27 manufacturers of FOM and LFOM to sell in bulk directly to farmers for a further period of three years from the date of 14<sup>th</sup> November, 2023.

In addition to above, amendments in clauses, specifications of fertilizer products, forms, etc. have also been made.

## 1.4 Budget Allocation and Payment Related Issues

### 1.4.1 Pre-Budget Memorandum

FAI submitted fertilizer industry pre-budget memorandum for Union Budget 2024-25 containing industry suggestions regarding taxation issues

facing the industry covering indirect & direct taxes.

Chairman, FAI wrote a letter to Adviser, Department of Economic Affairs, Ministry of Finance on 18<sup>th</sup> June, 2024 in a reply to his letter dated 14<sup>th</sup> June, 2024 for the suggestions to the Pre-Budget Memorandum 2024-25. The letter highlighted the need for reforms in fertilizer policies to boost domestic production, promote balanced nutrient use, and ensure long-term supply security. It also suggested for tax incentives for cooperatives, reduced customs duties on raw materials, and specific GST rate adjustments to support the fertilizer sector's growth and sustainability. Additionally, it emphasized on the importance of innovative fertilizers, integrated nutrient approaches, and improved financial support for farmers.

#### 1.4.2 Budget Allocation for Fertilizers

Hon'ble Finance Minister Smt. Nirmala Sitharaman presented the Union Budget 2024-25 in the parliament on 23<sup>rd</sup> July, 2024. The budget focused on provisioning for the agricultural sector, introduction of schemes related to employment, loan schemes, announcements for financial support to the MSME sector, infrastructural development, etc. With regard to fertilizers, budget allocation for urea and P&K fertilizers was maintained at the interim budget levels announced in February, 2024.

##### 1.4.2.1 Budget Allocation for 2023-24

Government has been providing sufficient funds for fertilizer subsidy for last couple of years. During the year 2023-24, the Government had budgeted Rs.1,75,103 crore for fertilizer subsidy which was revised to Rs. 1,88,902 crore due to price volatility of fertilizers and raw materials in the international

market during the year.

##### 1.4.2.2 Budget Allocation for 2024-25

The budget allocation for fertilizer subsidy has been kept at Rs.1,64,103 crore for the year 2024-25. Budget for urea subsidy is Rs. 1,19,000 crore which is lower by Rs. 9,594 crore than the revised estimates for 2023-24. Similarly, subsidy for P&K fertilizers has also been reduced by Rs. 15,300 crore. Adequacy of allocation will depend on the international prices of energy, fertilizers and raw materials during the year. The **Table** on budget allocation depicts subsidy outgo for 2022-23; budget estimate (BE) and revised estimate (RE) for 2023-24 and BE for 2024-25.

##### 1.4.3 Payment Related Issues

FAI has consistently pursued compensation for losses incurred on imported and manufactured DAP during the period from 25<sup>th</sup> October 2021 to 31<sup>st</sup> March 2022 and 2022-23, due to rising international prices, raw material costs, MRP caps, and rupee depreciation. In letters dated 6<sup>th</sup> July and 16<sup>th</sup> August 2023, FAI requested a meeting with the Secretary (Fertilizers) to address these issues. Chairman, FAI reiterated this request on 29<sup>th</sup> December 2023, highlighting total losses of Rs. 1,139 crore for importers and Rs. 396 crore for manufacturers, seeking compensation on a No Profit No Loss basis.

Further, in response to the government's plan to import DAP from August to November 2023, FAI highlighted concerns about rising DAP prices, availability issues due to China's restrictions, and increased demand from Brazil. FAI, in a letter to the Additional Secretary, DoF on 22<sup>nd</sup> August 2023, suggested promoting alternatives like SSP through subsidy adjustments and urged the DoF to reassess

Fertilizer Subsidy – Budget provision and actual (Source: Union Budget – 2024-25)				
Item	(Rs. Crore)			
	2022-23 (Actual)	2023-24 (BE)	2023-24 (RE)	2024-25 (BE)
<b>Urea Subsidy</b>				
- Payment for Indigenous Urea	1,25,270.09	1,04,063.18	1,02,121.00	1,00,340.00
- Payment for Import of Urea	43,406.61	31,000.00	30,000.00	22,634.00
- Direct Benefit Transfer(DBT) in Fertilizer Subsidy	3.96	16.94	5.00	6.00
- Recovery	-3,463.53	-3,980.00	-3,532.00	-3,980.00
Net	<b>1,65,217.13</b>	<b>1,31,100.12</b>	<b>1,28,594.00</b>	<b>1,19,000.00</b>
<b>Nutrient Based Subsidy</b>				
- Payment for Indigenous P and K Fertilizers	50,089.67	25,500.00	32,370.00	26,500.00
- Payment for Imported P and K Fertilizers	36,032.56	18,500.00	27,930.00	18,500.00
<b>Total- Nutrient Based Subsidy</b>	<b>86,122.23</b>	<b>44,000.00</b>	<b>60,300.00</b>	<b>45,000.00</b>
<b>Scheme for Promotion of Flagging of Merchant Ships in India</b>	1.12	3.25	1.50	2.50
<b>Policy on Promotion of Organic Fertilizers</b>	-	-	6.00	100.00
<b>Total Subsidy</b>	<b>2,51,340.48</b>	<b>1,75,103.37</b>	<b>1,88,901.50</b>	<b>1,64,102.50</b>

DAP demand for the *rabi* season. FAI also requested a policy allowing differential subsidy for pipeline inventory when NBS rates are revised downwards, noting that reduced rates could lead to significant losses on unsold stock. This issue, previously seen in 2022-23 and early 2023-24, had severely impacted the industry's profitability due to the disparity between manufacturing costs and lower subsidies at the point of sale.

## 1.5 Other Taxation Issues

### 1.5.1 GST Issues

On 23<sup>rd</sup> June, 2023, FAI representatives met Mr. Shashank Priya, Member GST, CBIC, to discuss GST-related issues affecting the fertilizer industry. The delegation, including top officials from IPL, CFCL, IFFCO and FAI, highlighted challenges in computing refunds under the inverted duty structure for P&K fertilizers. The Member acknowledged the issues and mentioned that the department was working towards resolving the issues.

Following the meeting, FAI wrote a letter to Chairman, CBIC on 25<sup>th</sup> September, 2023, emphasizing key issues under GST law. The letter pointed out that P&K fertilizers are taxed at 5% GST under Schedule I of notification no. 1/2017-Central Tax (Rate), while inputs like ammonia are taxed at 18%, leading to a significant accumulation of input tax credit due to the lower output GST and exclusion of subsidies from taxable supply. This situation has resulted in non-refund of unutilized input tax credits, severely affecting the fertilizer industry's financial health. Other issues raised included the rejection of refund applications, the need to reduce GST rates on micronutrients, and complications from technical glitches on the GST portal.

In response, DoF asked FAI to submit a detailed note with specific examples on major GST issues. In consultation with the member companies, FAI sent a comprehensive list of GST-related issues to DoF. The submission highlighted the imbalance between GST rates for P&K fertilizers and their inputs, leading to unutilized credits, refund challenges, and legal disputes. FAI proposed several solutions, including reducing GST rates on ammonia and micronutrients, providing exemptions for transportation services, and addressing input tax credits for CSR expenses.

### 1.5.2 Pending Service Tax/IGST Claims on Ocean Freight and Unutilized IGST Credits in Respect of Imported Urea

On 28<sup>th</sup> June, 2024, FAI requested the Special Secretary, DoF to resolve the IGST and service tax claims related to ocean freight and unutilized IGST credits for imported urea pending since 2017. The letter highlighted that the longstanding pendency in the release of IGST/service tax on ocean freight and

unutilized IGST credits under the imported urea handling and marketing agreement, dating back to 2017, had caused significant financial strain on fertilizer marketing entities (FMEs). Despite claims being submitted in the required formats since 2019, no payments have been disbursed, affecting FMEs' operational efficiencies and financial stability. The pending claims include approximately Rs.5 crore for service tax on ocean freight (April 2017 - June 2017), Rs.250 crore for IGST on ocean freight (July 2017 - 2022), and Rs.130 crore for urea unutilized IGST (July 2017 - July 2018). Immediate intervention was requested to review and approve these claims, regularize IGST adjustments for certain shipments, facilitate prompt disbursement, and establish a streamlined process for future settlements. Prompt action is essential for the financial health of FMEs and the uninterrupted supply of fertilizers crucial for national food security.

### 1.5.3 Request for Tariff Concession on Import of Phosphoric Acid

As per the General Exemption No. 76 on concessional rate of duty on imports under agreement on the Global System of Trade Preferences among Developing Countries under Belgrade Agreement, 1988, the import of phosphoric acid from the various countries like, Morocco, Egypt, Tunisia, Vietnam, etc. comes under the extent of tariff concession of 20% of the standard rate *i.e.* the basic customs duty (BCD) of 5%. India imports significant quantity of phosphoric acid from Jordan. However, concession of 20% on BCD is not applicable for import of phosphoric acid from Jordan. In this context, FAI wrote a letter to the Secretary (Commerce), on 27<sup>th</sup> July, 2023 requesting therein to extend the tariff concession of 20% on BCD to Jordan in line with other countries as stipulated on import of phosphoric acid for a level playing field to all the manufacturers of DAP and NP/NPK complexes.

### 1.5.4 Financing Fertilizer Subsidy Receivables

Fertilizer Industry came to know through press reports on 13<sup>th</sup> March, 2024 that Centre is in talks with banks to discontinue fertilizer subsidy funding. In this regard, Chairman, FAI consulted some senior executives of the industry and shared a note on the subject with the Special Secretary, DoF on 18<sup>th</sup> March, 2024. The note described that the current practice by banks to finance for a period of 60 days against subsidy receivables should not be discontinued because despite the best efforts of Government of India to release weekly DBT claims, subsidy payments are not being released as per the declared policy. It was requested to continue with the present system of financing fertilizer subsidy receivables to the fertilizer industry for mutual benefit of all concerned.

Based on the note, Joint Secretary, DoF requested FAI to send a comprehensive proposal along with the details on i) process details followed by the fertilizer

companies to obtain the working capital finance from banks; ii) rate of interest on such finance; iii) period of finance; and iv) quantum of finance. FAI circulated the said message to its member companies. Most of the companies responded and the same was sent to the Department.

### 1.5.5 Policy on Promotion of Organic Fertilizers

DoF vide O.M. dated 18<sup>th</sup> July, 2023 conveyed the approval of the Government of India regarding provision of market development assistant (MDA) @ Rs. 1500 per MT to promote organic fertilizers and will be given for the manure produced at plants under umbrella Galvanizing Organic Bio-Agro Resources Dhan (GOBARdhan) initiative covering different Biogas/CBG support scheme/programme of stakeholder Ministries/Departments. These *inter-alia* include Sustainable Alternative Towards Affordable Transportation Scheme of Ministry of Petroleum & Natural Gas; Waste to Energy Programme of Ministry of New & Renewable Energy; Swachh Bharat Mission (Grameen) of Department of Drinking Water & Sanitation; etc.

All manufacturing-cum-marketing entities inclusive of fertilizer companies shall be eligible for MDA for promotion of organic fertilizers, subject to their conforming to specifications as per FCO, 1985, as amended from time to time.

### 1.5.6 Discussion Points for Chintan Shivir

Department of Fertilizers requested FAI to provide inputs for issues to be discussed in *Chintan Shivir* relating to fertilizer sector which was proposed to be organized by DoF. In this regard, FAI sent the major discussion points to the Department on 12<sup>th</sup> February, 2024 after consultation with the industry.

## 2.0 FERTILIZER PRODUCTION

### 2.1 General

Production of fertilizers was 50.504 million metric tonnes (million MT) during 2023-24 which was higher

by 3.7% than the previous year of 2022-23. Production in terms of nutrients (N+P<sub>2</sub>O<sub>5</sub>) increased to 21.986 million MT in 2023-24 from 20.747 million MT in 2022-23. Production of urea was 10.2% higher at 31.408 million MT in 2023-24 compared to 28.495 million MT in 2022-23. Higher production of urea during 2023-24 was due to contribution from 3 new urea plants commissioned during 2022-23. However, production of DAP declined by 1.2% to 4.293 million MT in 2023-24 from 4.347 million MT in 2022-23. This was compensated by higher production of complex fertilizers which showed an increase of 2.7% at 9.548 million MT during 2023-24 from 9.293 million MT in 2022-23. Production of SSP declined sharply by 21.5% from 5.646 million MT to 4.433 million MT during the same period. In terms of nutrient, compared with the previous year, production of N increased by 8.7% to 17.108 million MT but production of P<sub>2</sub>O<sub>5</sub> declined by 2.6% to 4.878 million MT.

A few urea units suffered loss of production due to equipment problems and longer turnaround days. Natural calamity also affected the production of plants located in some coastal areas. DAP & other NP/NPK complex fertilizer as well as SSP production was affected by higher raw material prices. Sharp reduction in NBS rates, for both *kharif* and *rabi* season of 2023-24, were also responsible for the decline in production. Higher production of complex fertilizers (other than DAP) was indicative of the fact that due to higher imported raw material prices, there was an obvious shift to NP/NPK complexes containing low P content compared to DAP.

### 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 175 thousand MT from a total of 17.285 million MT during 2022-23 to 17.460 million MT at the end of the

Table 1. Zone-wise capacity, production and capacity utilization of nitrogenous and phosphatic plants in 2022-23 and 2023-24 (April-March)																
(Capacity and production in '000 MT)																
Zone	Nitrogen (N)								Phosphate (P <sub>2</sub> O <sub>5</sub> )							
	2022-23				2023-24(P)				2022-23				2023-24(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	12	2652.3	1472.6	74.7	12	2759.3	2542.0	93.9	11	1623.9	1514.9	93.3	11	1804.9	1588.9	92.7
North	12	4743.9	4970.8	104.8	12	4743.9	5178.6	109.2	7	129.0	58.0	53.7	7	129.0	40.0	37.0
South	14	3179.4	2648.1	83.6	14	3234.6	2793.1	86.4	25	1972.7	1254.8	64.2	25	2082.8	1318.8	63.5
West	22	6709.0	6646.3	99.9	22	6722.4	6594.1	98.1	79	3588.7	2181.8	63.7	79	3613.3	1930.5	54.7
<b>All India</b>	<b>60</b>	<b>17284.6</b>	<b>15737.8</b>	<b>95.2</b>	<b>60</b>	<b>17460.2</b>	<b>17107.8</b>	<b>98.3</b>	<b>122</b>	<b>7314.4</b>	<b>5009.5</b>	<b>70.4</b>	<b>122</b>	<b>7630.1</b>	<b>4878.3</b>	<b>65.7</b>
		(16537.2)				(17406.7)				(7114.6)				(7427.9)		

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

Zone	2022-23			2023-24 (P)		
	Capacity	Production	Capacity utilization (%)	Capacity	Production	Capacity utilization (%)
East	967.8	581.6	60.1	967.8	497.9	51.5
North	806.5	362.4	53.7	806.5	249.8	37.0
South	1,376.9	439.6	34.6	1,426.9	350.3	25.4
West	9,197.5	4,262.6	50.0	9,575.0	3,334.5	36.8
<b>All India</b>	<b>12,348.7</b>	<b>5,646.2</b>	<b>49.3</b>	<b>12,776.2</b>	<b>4,432.5</b>	<b>36.7</b>
	<b>(11,443.9)</b>			<b>(12,077.8)</b>		

(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.

year 2023-24. Production capacity of P<sub>2</sub>O<sub>5</sub> also increased by 316 thousand MT from a total of 7.314 million MT during 2022-23 to 7.630 million MT during 2023-24.

The increase in capacity was due to expansion in existing NP/NPK complex fertilizer plants contributed to increase in capacity of both N & P<sub>2</sub>O<sub>5</sub>. Installation of new SSP plants further contributed to P<sub>2</sub>O<sub>5</sub> capacity. After excluding capacity of the idle/closed SSP plants, total operating (effective) capacity of P<sub>2</sub>O<sub>5</sub> was 7.428 million MT as on 31st March, 2024 compared to 7.115 million MT a year before.

### 2.3 Capacity Utilization

Capacity utilization of nitrogen increased to 98.3% in 2023-24 from 95.2% in 2022-23. However, capacity utilization of phosphate declined to 65.7% from 70.4% during the same period although there was an increase in installed capacity of the DAP and SSP plants. The decline was due to lower production from SSP plants during 2023-24 compared to previous year. Capacity utilization of SSP plants declined sharply to 36.7% in 2023-24 from 49.3% in 2022-23 for the reason cited previously.

Capacity utilization of nitrogen remained the highest in north zone. Capacity utilization in north zone saw an increase to 109.2% in 2023-24 compared to 104.8% in 2022-23. Capacity utilization of nitrogen in west zone decreased to 98.1% in 2023-24 from 99.9% in 2022-23. South zone nitrogenous plants registered a marginal increase in capacity utilization to 86.4% from 83.6% during the same period. East zone plants showed a healthy improvement in capacity utilization to 93.9% in 2023-24 from 74.7% in 2022-23 on account of better contribution in capacity utilization by new urea plants in the region. All the four zones continued to decline in P<sub>2</sub>O<sub>5</sub> which is reflected in overall production. Capacity utilization of phosphate plants in east zone declined to 92.7% in 2023-24 from 93.3% in 2022-23. Phosphate plants production in

north zone registered a decline to 37.0% from 53.7% and in south zone, it declined to 63.5% from 64.2% while west zone showed a decline to 54.7% from 63.7% during the same period. Same has been the position of SSP plants.

**Table 3** shows the number of nitrogen and phosphate plants achieving various levels of capacity utilization. Number of N plants operating at more than 90% capacity utilization increased to 35 in 2023-24 from 31 in 2022-23. Ten N plants achieved capacity utilization between 80-90% during 2023-24 which was 11 during 2022-23. In the category of phosphate, number of plants achieving capacity utilization higher than 100% declined to 5 from 7 in the previous year. The plants achieving capacity utilization between 90-100% reduced to 2 in 2023-24 from 3 in the previous year. Number of plants in the range of 80-90% capacity utilization also decreased to 3 from 7 during the same period. Plants operated between 60-80% were remained at 21 during both years. Majority of the

**Table 3. Number of plants in various ranges of capacity utilization - N & P<sub>2</sub>O<sub>5</sub> in 2022-23 and 2023-24 (April-March)**

Capacity utilization range (%)	N		P <sub>2</sub> O <sub>5</sub>	
	2022-23	2023-24	2022-23 <sup>@</sup>	2023-24 <sup>@</sup>
Above 100	24	25	7 (1)	5 (-)
> 90 to 100	7	10	3 (2)	2 (1)
> 80 to 90	11	10	7 (5)	3 (2)
> 70 to 80	2	4	11 (10)	7 (4)
> 60 to 70	5	2	10 (10)	14 (9)
> 50 to 60	-	-	22 (19)	11 (9)
> 40 to 50	3	6	16 (14)	18 (17)
Upto 40	6	1	37 (32)	54 (53)
Nil/ Not Available	2	2	9 (9)	8 (7)
<b>Total number of plants</b>	<b>60</b>	<b>60</b>	<b>122 (102)</b>	<b>122 (102)</b>

( ) = Figures in parentheses are for SSP plants.

@ = Include DAP/NP/NPK plants.

Note: Figures for 2023-24 are provisional.



Table 4. Percentage share of fertilizer products to total nutrient production in 2022-23 and 2023-24 (April-March)				
Fertilizer	% share of total nutrient			
	2022-23		2023-24 (P)	
	N	P <sub>2</sub> O <sub>5</sub>	N	P <sub>2</sub> O <sub>5</sub>
<b>I. Straight nitrogenous</b>	84.5	-	85.5	-
1. Urea	83.3	-	84.5	-
2. Others	1.2	-	1.0	-
<b>II. Straight phosphatic</b>	-	18.1	-	14.6
1. Single superphosphate	-	18.0	-	14.5
2. Others	-	0.1	-	0.02
<b>III. Complex fertilizers</b>	15.5	81.9	14.5	85.4
1. DAP	5.0	39.9	4.5	40.5
2. NP/NPKs	10.5	42.0	10.0	44.9
<b>Grand total (I+II+III)</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>

(P) = Provisional.

plants in this category operated at less than 50% capacity utilization.

#### 2.4 Share of Products

Nitrogen production continues to be dominated by urea with a share of 84.5% in total N production. This is marginally higher than 83.3% in 2022-23 (Table 4). Share of complex fertilizers including DAP in N production declined to 14.5% in 2023-24 from 15.5% in 2022-23. Share of DAP and NP/NPKs in nitrogen production also declined during 2023-24 than the previous year. DAP continued to remain a dominant product in phosphate segment accounting for 40.5% of total P<sub>2</sub>O<sub>5</sub> production and all other NP/NPK products together contributed 44.9% to P<sub>2</sub>O<sub>5</sub> production in 2023-24. The relative contribution of DAP and NP/NPK fertilizers to

phosphate production showed an increase to 85.4% in 2023-24 from 81.9% in 2022-23. Both DAP and NP/NPK showed an increase in share in phosphate production to 40.5% from 39.9% and 44.9% from 42.0%, respectively in 2023-24 over corresponding period of previous year. SSP showed a sharp decline in share to 14.5% in 2023-24 compared to 18.0% in 2022-23 which is in line with its production.

#### 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 87.1% in production of N in the country in 2023-24. Naphtha was partially used by one plant as feedstock which has switched to natural gas in February 2024. External ammonia accounted for 12.7% of N production which was used for production of complex fertilizers.

Production of phosphatic fertilizers requires intermediate phosphoric acid. This is produced indigenously as well as imported. Nearly, 90% rock phosphate was imported for production of phosphoric acid and accounted for nearly 50% phosphate production in the country. Imported phosphoric acid and domestic rock phosphate contributed to the balance production of the phosphate.

#### 2.6 Sector-wise Performance

Fertilizer plants in public, private and cooperative sectors contribute to fertilizer production in India. Table 6 gives sector-wise performance and their share of contribution to fertilizer production in the country. Major share of N production capacity (45.5%)

Table 5. Feedstock-wise share in total capacity and production with capacity utilization of Nitrogen (N) in 2022-23 and 2023-24 (April-March)						
Feedstock/ Intermediate	(Per cent)					
	Capacity		Production		Capacity utilization	
	2022-23	2023-24 (P)	2022-23	2023-24 (P)	2022-23	2023-24 (P)
Gas	86.3	85.4	86.3	87.1	95.6	100.0
Naphtha	-	-	-	-	-	-
External ammonia	13.5	14.4	13.5	12.7	93.5	88.5
Others*	0.3	0.2	0.1	0.2	53.3	72.7
<b>Total</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>95.2</b>	<b>98.3</b>

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

Table 6. Sector-wise share of capacity and production with capacity utilization of N and P <sub>2</sub> O <sub>5</sub> in 2022-23 and 2023-24 (April-March)												
Sector	(Per cent)											
	Share of capacity				Share of production				Capacity utilization			
	2022-23		2023-24 (P)		2022-23		2023-24 (P)		2022-23		2023-24 (P)	
	N	P <sub>2</sub> O <sub>5</sub>	N	P <sub>2</sub> O <sub>5</sub>	N	P <sub>2</sub> O <sub>5</sub>	N	P <sub>2</sub> O <sub>5</sub>	N	P <sub>2</sub> O <sub>5</sub>	N	P <sub>2</sub> O <sub>5</sub>
Public	34.1	4.0	33.7	3.8	28.2	5.3	31.9	5.2	75.5	90.7	92.8	86.6
Cooperative	21.0	23.4	20.8	22.4	25.7	36.1	23.3	32.3	111.3	105.6	109.6	91.9
Private	44.9	72.6	45.5	73.7	46.0	58.6	44.8	62.5	103.3	57.5	97.2	56.3
<b>Total</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>95.2</b>	<b>70.4</b>	<b>98.3</b>	<b>65.7</b>

(P) = Provisional.

is in private sector during 2023-24. The balance capacity is tilted towards public sector followed by cooperative sector at 33.7% and 20.8%, respectively, in 2023-24. In production capacity of phosphate, dominance of private sector is more pronounced with share of 73.7% during 2023-24. Cooperative sector and public sector accounted for 22.4% and 3.8% share in capacity, respectively. Capacity utilization of N was the highest at 109.6% in cooperative sector during 2023-24 but showed a decline from 111.3% of the previous year. Public sector plants improved their capacity utilization significantly to 92.8% from 75.5% in the previous year, while in private sector, it declined to 97.2% from 103.3% in the previous year. Phosphate plants in all the three sectors showed decline in capacity utilization in 2023-24 compared to 2022-23. Capacity utilization of public sector phosphate plants was 86.6% but it was 56.3% in private sector. However, cooperative sector plants operated at reasonable level of 91.9% capacity utilization during 2023-24.

Private sector contributed 44.8% to production of N and 62.5% to the production of  $P_2O_5$ . Cooperative sector accounted for 23.3% of N production and 32.3% of  $P_2O_5$  production. Public sector contributed 31.9% and 5.2% to the production of N and  $P_2O_5$ , respectively which is proportionate to its share in capacity of these two nutrients.

## 2.7 Reasons for Loss of Production

Production of urea was higher by almost 50 thousand MT at 31.41 million MT compared to target of 30.87 million MT during the year 2023-24 in spite of the fact that several plants faced production loss due to

variety of equipment problems, faced emergency shutdown due to sudden failure of both rotating and static equipment. A few plants took longer turnaround for implementing energy saving schemes and revamp which affected the production.

DAP and complex fertilizer plants did not achieve production target. There was shortfall both in production of DAP and complex fertilizers. Many complex fertilizer plants in western and southern coast of India faced cyclone calamity which led to ceasing of plant operations for weeks. Production in these plants also suffered due to uncertainty in supply of raw materials due to geopolitical situation and higher raw material prices in addition to plant and equipment problems. Therefore, capacity utilization of these plants remained low.

## 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. Share of domestic gas in total gas utilization in fertilizer sector has dwindled gradually over the years. Domestic gas share showed an increase during 2023-24 to 20.2% for urea sector from 14.2% in 2022-23. In absolute terms, average supply of domestic gas increased to 11.1 MMSCMD in 2023-24 from 7.40 MMSCMD in 2022-23. The increase in share of domestic gas is due to supply of gas from high pressure and high temperature (HP-HT) gas from KG-D6 fields. Balance gas is met by imported RLNG. Consumption of gas in the urea sector was estimated to be about 55 MMSCMD (@8450 Kcal NCV) during 2023-24. **Figure 1** shows the trend in supply of natural gas to fertilizer (urea) sector.

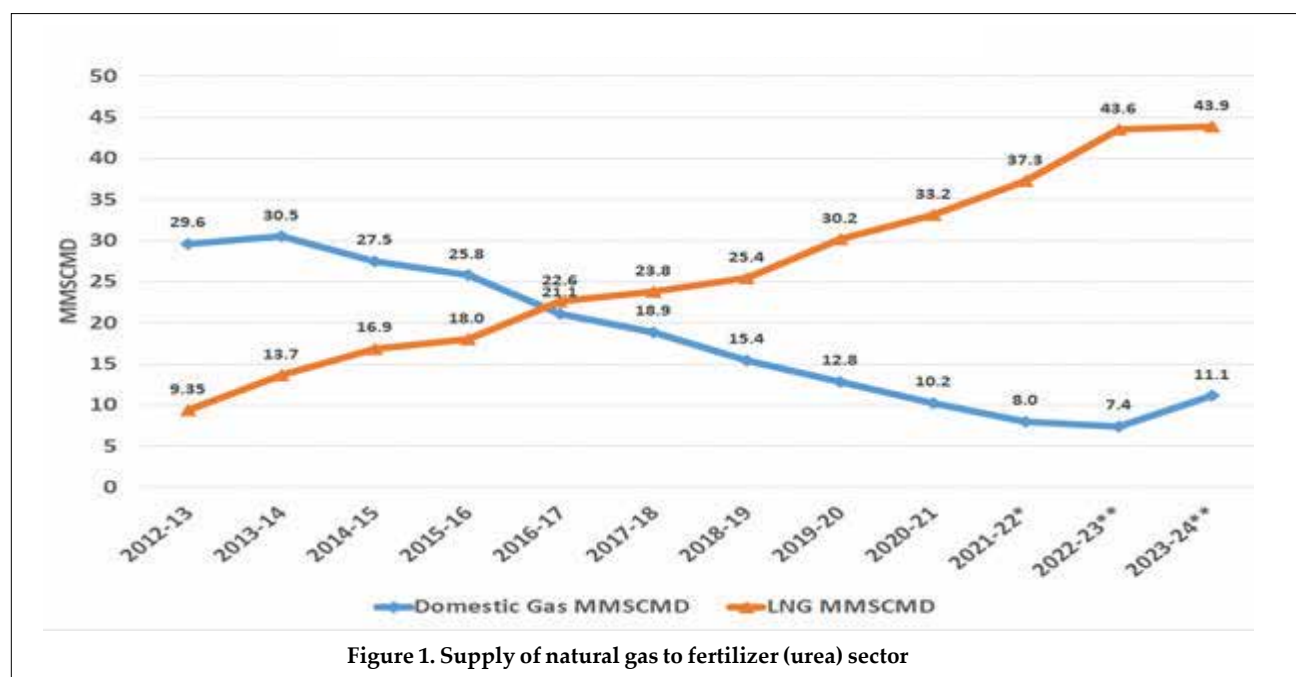


Figure 1. Supply of natural gas to fertilizer (urea) sector

## 2.9 Efforts for Improvement in Efficiency of Fertilizer Plants

Continuous operation of fertilizer plants is vital for efficient operation. Any breakdown results in heavy loss on account of energy and production loss. Reliability and safety of the plant is necessary to remain viable. Therefore, modernization/revamp/retrofit is being carried out by the fertilizer plants to improve their productivity. Some of the measures implemented by the fertilizer plants during the year are illustrated here.

After waiting for several years, a plant in Tuticorin has started receiving full natural gas from February 2024. A plant has changed the primary reformer catalyst to meet the full requirement of natural gas which would also improve its energy efficiency. A plant at Trombay has implemented some energy saving schemes which reduced its energy consumption. A plant at Kota operated for two years continuously without shutdown which reflected in improved efficiency of the plant. Another urea plants at Babrala upgraded the syngas turbine and CO<sub>2</sub> turbine which resulted in reduction in steam consumption and hence improved energy efficiency and production. One of the urea plant at Hazira installed a process air compressor with electric drive. Earlier, they have changed carbon dioxide compressors and other cooling tower and BFW pumps to power drive to save energy. The plant at Mangalore carried out various measures to reduce specific energy consumption which included an add-on converter, change of synthesis gas motor drive to steam and change of reformer tubes. These measures were reflected in higher energy efficiency for 2023-24.

A complex fertilizer plant commissioned a new

sulphuric acid plant to meet its requirement for production of phosphoric acid which was earlier met with import. This has helped in higher production as well as utilization of waste heat for power generation.

Fertilizer industry has made huge investment in improving efficiency of plant and equipment. Further improvement requires large capital investment with longer payback period. The fertilizer policy needs to be conducive so that plants can generate surplus fund for investment for improving efficiency and reliability of the plants.

## 3.0 FERTILIZER IMPORT

### 3.1 Imports

Production of fertilizers from domestic sources has been increasing over the years. However, it is inadequate to fulfil the entire demand for fertilizers in the country. About 30% of the total requirement of fertilizer materials is fulfilled through imports. During 2023-24, gap between consumption and production for nitrogen (N) and phosphate (P<sub>2</sub>O<sub>5</sub>) was 3.35 million MT and 3.43 million MT, respectively (Table 7a). Entire requirement of potash (K<sub>2</sub>O) is fulfilled through imports. During 2023-24, import of N, P<sub>2</sub>O<sub>5</sub> and K<sub>2</sub>O was 4.65, 3.14 and 1.97 million MT, respectively (Table 7b).

In terms of fertilizer products, domestic production from newly commissioned urea plants contributed more secure availability of urea during 2023-24. As a result, import of urea reduced by 7.1% from 7.58 million MT during 2022-23 to 7.04 million MT during 2023-24. On the other hand, high cost of finished fertilizers in the international market had adversely impacted the imports of phosphatic fertilizers. The import of DAP and NP/NPK complex fertilizers

Year	Consumption					Production			Gap		
	N	P <sub>2</sub> O <sub>5</sub>	N+P <sub>2</sub> O <sub>5</sub>	K <sub>2</sub> O	N+P <sub>2</sub> O <sub>5</sub> +K <sub>2</sub> O	N	P <sub>2</sub> O <sub>5</sub>	N+P <sub>2</sub> O <sub>5</sub>	N	P <sub>2</sub> O <sub>5</sub>	N+P <sub>2</sub> O <sub>5</sub>
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	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
2022-23	20,206.3	7,921.5	28,127.9	1,715.8	29,843.6	15,737.8	5,009.5	20,747.3	4,468.5	2,912.0	7,380.5
2023-24 (P)	20,456.4	8,306.6	28,763.0	1,878.6	30,641.6	17,107.8	4,878.3	21,986.1	3,348.5	3,428.4	6,776.9

(P) = Provisional. Note:1. Gap does not take into account stocks available at the beginning of the year.  
2. Entire requirement of K<sub>2</sub>O is met through imports. 3. Totals may not exactly tally due to rounding of figures.

**Table 7 (b). Import of N, P<sub>2</sub>O<sub>5</sub> and K<sub>2</sub>O from 2010-11 to 2023-24 (April-March)**

('000 MT)

Year	N	P <sub>2</sub> O <sub>5</sub>	N+P <sub>2</sub> O <sub>5</sub>	K <sub>2</sub> O	N+P <sub>2</sub> O <sub>5</sub> +K <sub>2</sub> 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	5,384.2	2,781.1	8,165.2	1,658.7	9,823.9
2022-23	5,218.4	3,761.3	8,979.7	1,463.0	10,442.7
2023-24 (P)	4,646.8	3,135.2	7,782.0	1,965.4	9,747.4

(P) = Provisional.  
Note: Totals may not exactly tally due to rounding of figures.

reduced from 6.58 million MT and 2.75 million MT during 2022-23 to 5.57 million MT and 2.22 million MT during 2023-24, represented decline of 15.4% and 19.4%, respectively. However, import of MOP increased by 53.8% from 1.87 million MT to 2.87 million MT during the period. **Table 8** shows production, consumption and import of urea, DAP and MOP from 2010-11 to 2023-24.

#### 4.0 INVENTORY OF FERTILIZERS

Inventory of fertilizers at the beginning of the year was adequate in different distribution channels.

Inventory of urea at various points was about 5.72 million MT at the beginning of 2023-24. Inventory of DAP was about 2.54 million MT, NP/NPKs 3.05 million MT, SSP 1.97 million MT and MOP 0.32 million MT as on 1<sup>st</sup> April, 2023. Availability of fertilizers from domestic source and imports was adequate to meet the demand of fertilizers across the country in every nook and corner during 2023-24.

#### 5.0 WEATHER

The monsoon is very essential for agricultural growth as well as for the Indian economy. In many ways, it 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 periods. The basic factor which influences fertilizer demand is its (rainfall) distribution over time and space.

#### 5.1 Southwest Monsoon

There was a longest delay in onset of southwest monsoon 2023 which reached the coast of Kerala on 8<sup>th</sup> June, 2023. There had been uneven inter-month variations in the distribution of rainfall. The rainfall during June 2023 was 9% below long period average (LPA). Monsoon covered the entire country by 2<sup>nd</sup> July, 2023 and progressed well during the month. Rainfall received during July 2023 was 13% above LPA. However, August 2023 was mostly dry and was 36%

**Table 8. Production, consumption and import of Urea, DAP and MOP from 2010-11 to 2023-24**

('000 MT)

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	9,826.0	11,911.5	3,773.8	4,882.0	3,424.9	4,227.0
2021-22	34,180.1	25,075.7	9,136.0	9,272.0	4,221.9	5,462.0	2,456.5	2,460.0
2022-23	35,725.1	28,495.3	7,582.0	10,417.6	4,346.7	6,583.0	1,631.5	1,866.0
2023-24 (P)	35,780.4	31,408.5	7,042.0	10,811.9	4,292.8	5,567.0	1,644.8	2,869.0

(P) = Provisional. \* = for direct application.  
Note: In the absence of product-wise consumption data, DBT sale figures assumed as consumption for 2023-24.

Item	2015	2016	2017	2018	2019	2020	2021	2022	2023
Excess/Normal	20	27	30	24	31	31	30	30	29
Deficient/Scanty	16	9	6	12	5	5	6	6	7
<b>Total</b>	<b>36</b>	<b>36</b>	<b>36</b>	<b>36</b>	<b>36</b>	<b>36</b>	<b>36</b>	<b>36</b>	<b>36</b>
% of districts with normal to excess rains	51	68	66	62	77	75	77	72	69
% of LPA rainfall	86	97	95	91	110	109	99	106	94
Excess = +20% or more      Normal = +19% to -19%      Scanty = -60% or less      Deficient = -20% to -59%									

below LPA. Rainfall during September 2023 was 13% above LPA. Overall rainfall during the southwest monsoon (June to September) 2023 was 94% of LPA. Quantitatively, all India rainfall was 820 mm as against the LPA of 869 mm during the monsoon period.

Out of 36 meteorological sub-divisions, 29 received normal to excess rains (**Table 9**). Out of 713 reported districts, 69% districts received normal to excess rains during the period. Uneven distribution of rains during the entire period of southwest monsoon had created concerns over adverse impact on *khari* crops. The sub-divisions which received deficient rains include Nagaland, Manipur, Mizoram & Tripura; Gangetic West Bengal; Jharkhand; Bihar; East Uttar Pradesh; South Interior Karnataka and Kerala. Most of these areas are very crucial for Indian agriculture. Southwest monsoon withdrew from the entire country on 19<sup>th</sup> October, 2023.

Total live storage capacity in 150 reservoirs in the country was 178.78 billion cubic meter (BCM). Live storage available in these reservoirs was 129.67 BCM as on 29<sup>th</sup> September, 2023 as against 158.74 BCM on the same date in the previous year. Live storage during the period was 82% of the last year and 92% of the normal storage.

## 5.2 Post-monsoon

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.

Rainfall during the post-monsoon season 2023 was 9% lower than the LPA. Out of 36 meteorological sub-divisions, 25 sub-divisions received normal to excess rains and remaining 11 sub-divisions received deficient rainfall during the season. Performance of the four monsoon seasons is shown in **Table 10**.

## 6.0 FERTILIZER CONSUMPTION

### 6.1 All-India Consumption

#### Growth in 2023-24

Consumption figures for 2023-24 are yet to be finalized by the Government. Therefore, DBT sale figures of fertilizers are assumed as consumption. Based on the sale figures, consumption of

Monsoon - period	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
March-May	34	24	18	19	13	28	32	18	28
June-September	20	27	30	24	31	31	30	30	29
October-December	10	10	19	5	32	20	31	30	25
January-February	6	10	3	16	18	14	28	4	13

<b>Table 11. Sale* of fertilizer products in 2022-23 and 2023-24 (April-March) (Provisional)</b>			
Fertilizers	Grade	('000 MT)	
		Sale	
		2022-23	2023-24
<b>I. Straight nitrogenous</b>			
1. Ammonium sulphate	20.6% N	764.8	732.0
2. Urea	46% N	35,725.1	35,780.4
3. Calcium ammonium nitrate	25% N	-	-
4. Ammonium chloride	25% N	62.1	50.0
<b>II. Straight phosphatic</b>			
1. Single superphosphate	16% P <sub>2</sub> O <sub>5</sub>	5,017.5	4,544.1
2. Triple superphosphate	46% P <sub>2</sub> O <sub>5</sub>	3.7	2.4
3. Rock phosphate	20% P <sub>2</sub> O <sub>5</sub>	39.2	40.0
<b>III. Straight potassic</b>			
1. Muriate of potash	60% K <sub>2</sub> O	1,631.5	1,644.8
2. Sulphate of potash	50% K <sub>2</sub> O	-	-
<b>IV. Complex</b>			
Diammonium phosphate	18-46-0	10,417.6	10,811.9
Mono Ammonium Phosphate	11-52-0	109.80	158.2
NP/NPK Complex fertilizers (other than DAP/MAP)		10,073.6	11,073.0
<b>Total Product</b>		<b>63,844.7</b>	<b>64,836.9</b>
*DBT sale = Sale by retailers through PoS machines to farmers.			

fertilizer nutrients (N+P<sub>2</sub>O<sub>5</sub>+K<sub>2</sub>O) estimated at 30.64 million MT during 2023-24, registered a growth of 2.7% over 2022-23.

Consumption of N, P<sub>2</sub>O<sub>5</sub> and K<sub>2</sub>O at 20.46 million MT, 8.31 million MT and 1.88 million MT during 2023-24 showed increase of 1.2%, 4.9% and 9.5%, respectively, over 2022-23.

In terms of product, All-India estimated consumption (based on DBT sale) of urea at 35.78 million MT, DAP at 10.81 million MT, MOP at 1.64 million MT and NP/NPK complex fertilizers at 11.07 million MT during 2023-24 recorded increase of 0.2%, 3.8%, 0.8% and 9.9%, respectively, over 2022-23. There had been sharp decline of 9.4% in the consumption of SSP as it was 4.54 million MT during the period. Total consumption of all fertilizer products at 64.84 million MT during 2023-24 registered an increase of 1.6% over 2022-23 (Table 11).

### Season-wise Performance

#### Khariif 2023

Consumption of total fertilizer nutrients during khariif 2023 recorded an increase of 14.4% over

khariif 2022. Consumption of N, P<sub>2</sub>O<sub>5</sub> and K<sub>2</sub>O registered increase of 9.4%, 24.3% and 28.4%, respectively, during khariif 2023 over khariif 2022. Consumption of N, P<sub>2</sub>O<sub>5</sub> and K<sub>2</sub>O was in order of 10.71, 4.81 and 0.98 million MT, respectively, during khariif 2023.

#### Rabi 2023-24

As against the positive growth during khariif 2023, consumption of total fertilizer nutrients during rabi 2023-24 registered a decline of 8.3% over rabi 2022-23. Consumption of N, P<sub>2</sub>O<sub>5</sub> and K<sub>2</sub>O declined by 6.5%, 13.7% and 5.7%, respectively, during rabi 2023-24 over rabi 2022-23. Consumption of N, P<sub>2</sub>O<sub>5</sub> and K<sub>2</sub>O was 9.74, 3.49 and 0.90 million MT, respectively, during rabi 2023-24.

### NPK Use Ratio and Per Hectare Consumption

All-India NPK use ratio changed from 11.8:4.6:1 during 2022-23 to 10.9:4.4:1 during 2023-24. Per hectare use of total nutrients (N+P<sub>2</sub>O<sub>5</sub>+K<sub>2</sub>O) improved from 136.2 kg in 2022-23 to 139.8 kg in 2023-24.

### 6.2 Zone-wise Comments

Consumption of total fertilizer nutrients increased in east, north and west zones by 1.3%, 2.6% and 6.1%, respectively, during 2023-24 over 2022-23. However, it declined in south zone by 1.3% during the period (Table 12). Per hectare consumption of fertilizer nutrients (N+P<sub>2</sub>O+K<sub>2</sub>O) in 2023-24 was the highest in north zone (198.1 kg), followed by south (170.7 kg), east (142.1 kg), and west (101.9 kg). There is a wide variation in NPK use ratio among the zones. During 2023-24, NPK use ratio in east zone was 6.2:2.6:1, south 6.5:3.1:1 and west 11.6:5.6:1 as against 30.7:8.9:1 in north zone.

### 6.3 State-wise Comments

Among 21 major fertilizer consuming states, 15 states registered positive growth in fertilizer consumption during 2023-24 over 2022-23. Remaining 6 states witnessed negative growth during the period (Table 13). Out of total nutrient consumption of 30.64 million MT in the country, Uttar Pradesh had the largest share (17.4%), followed by Madhya Pradesh (10%), Maharashtra (9.5%), Punjab (6.4%), Karnataka (6.3%), Rajasthan (6.2%), Gujarat (6.1%), Bihar & Telangana (5.8% each), Andhra Pradesh (5.6%) and West Bengal (4.7%). These 11 states accounted for about 84% of the total consumption in the

Table 12. Season-wise consumption of N, P<sub>2</sub>O<sub>5</sub> & K<sub>2</sub>O from 2021-22 to 2023-24 and

S. No.	Zone/State	Nutrient	Consumption ('000 MT)								
			2021-22			2022-23			2023-24(P)		
			Kharif	Rabi	Total	Kharif	Rabi	Total	Kharif	Rabi	Total
I.	EAST	N	1,229.72	1,420.47	2,650.19	1,241.73	1,493.07	2,734.80	1,334.00	1,424.32	2,758.32
		P <sub>2</sub> O <sub>5</sub>	459.23	619.30	1,078.53	438.95	664.28	1,103.24	583.82	549.78	1,133.60
		K <sub>2</sub> O	229.82	281.88	511.70	161.58	282.03	443.62	206.00	237.58	443.58
		Total	1,918.77	2,321.65	4,240.42	1,842.27	2,439.38	4,281.64	2,123.81	2,211.68	4,335.50
1	Arunachal Pradesh	N	-	-	-	0.13	0.23	0.36	0.13	0.26	0.39
		P <sub>2</sub> O <sub>5</sub>	-	-	-	-	-	-	-	0.04	0.04
		K <sub>2</sub> O	-	-	-	-	-	-	-	0.002	0.002
		Total	-	-	-	0.13	0.23	0.36	0.13	0.30	0.43
2	Assam	N	88.50	89.96	178.46	85.93	92.05	177.98	96.25	91.82	188.07
		P <sub>2</sub> O <sub>5</sub>	22.74	25.51	48.25	19.63	29.68	49.32	24.22	29.23	53.45
		K <sub>2</sub> O	21.08	13.83	34.91	14.32	14.36	28.68	14.46	12.92	27.38
		Total	132.32	129.30	261.62	119.88	136.09	255.97	134.93	133.97	268.91
3	Bihar	N	489.38	669.90	1,159.28	480.16	707.30	1,187.47	506.01	759.75	1,265.76
		P <sub>2</sub> O <sub>5</sub>	122.09	231.85	353.94	121.12	245.22	366.33	145.31	261.62	406.93
		K <sub>2</sub> O	33.18	67.07	100.25	18.20	64.00	82.20	18.34	75.73	94.07
		Total	644.65	968.82	1,613.47	619.48	1,016.52	1,636.00	669.66	1,097.11	1,766.76
4	Jharkhand	N	86.64	55.31	141.95	74.46	63.81	138.27	96.70	65.51	162.21
		P <sub>2</sub> O <sub>5</sub>	36.17	17.04	53.21	25.83	21.46	47.29	37.36	14.82	52.17
		K <sub>2</sub> O	3.25	3.41	6.66	2.15	2.40	4.55	2.49	0.61	3.11
		Total	126.06	75.76	201.82	102.44	87.67	190.11	136.55	80.94	217.49
5	Manipur	N	6.38	3.21	9.59	9.06	6.17	15.23	4.41	7.37	11.78
		P <sub>2</sub> O <sub>5</sub>	1.95	0.70	2.65	2.55	1.56	4.11	1.06	0.66	1.72
		K <sub>2</sub> O	0.04	0.10	0.14	0.75	1.55	2.30	0.75	0.19	0.93
		Total	8.37	4.01	12.38	12.36	9.29	21.64	6.22	8.22	14.43
6	Meghalaya	N	-	-	-	-	-	-	0.82	1.11	1.93
		P <sub>2</sub> O <sub>5</sub>	-	-	-	-	-	-	0.18	0.22	0.40
		K <sub>2</sub> O	-	-	-	-	-	-	-	-	-
		Total	-	-	-	-	-	-	1.00	1.33	2.33
7	Mizoram	N	0.09	1.15	1.24	2.99	1.87	4.86	3.21	2.59	5.80
		P <sub>2</sub> O <sub>5</sub>	0.02	-	0.02	0.59	-	0.59	0.02	0.02	0.04
		K <sub>2</sub> O	-	-	-	-	0.04	0.04	0.02	-	0.02
		Total	0.11	1.15	1.26	3.58	1.91	5.49	3.24	2.61	5.86
8	Nagaland	N	0.07	0.17	0.24	0.14	0.10	0.24	0.26	0.11	0.37
		P <sub>2</sub> O <sub>5</sub>	-	-	-	-	0.001	0.001	0.01	0.01	0.01
		K <sub>2</sub> O	-	-	-	-	-	-	-	0.01	0.01
		Total	0.07	0.17	0.24	0.14	0.10	0.24	0.27	0.12	0.39
9	Odisha	N	241.96	109.73	351.69	245.91	103.70	349.60	275.13	97.78	372.91
		P <sub>2</sub> O <sub>5</sub>	122.20	46.51	168.71	104.85	47.19	152.04	148.28	38.34	186.62
		K <sub>2</sub> O	53.41	13.57	66.98	27.83	12.06	39.88	32.66	10.09	42.74
		Total	417.57	169.81	587.38	378.58	162.94	541.52	456.07	146.20	602.28
10	Sikkim	N	-	-	-	-	-	-	-	-	-
		P <sub>2</sub> O <sub>5</sub>	-	-	-	-	-	-	-	-	-
		K <sub>2</sub> O	-	-	-	-	-	-	-	-	-
		Total	-	-	-	-	-	-	-	-	-

total by states and percentage variation (April-March) (continued)											
± % variation over previous season/year											
2021-22			2022-23			2023-24(P)			Nutrient	Zone / State	S. No.
Kharif	Rabi	Total	Kharif	Rabi	Total	Kharif	Rabi	Total			
-11.2	2.3	-4.4	1.0	5.1	3.2	7.4	-4.6	0.9	N	EAST	I.
-14.0	-16.7	-15.6	-4.4	7.3	2.3	33.0	-17.2	2.8	P <sub>2</sub> O <sub>5</sub>		
-15.8	-38.4	-29.9	-29.7	0.1	-13.3	27.5	-15.8	-0.01	K <sub>2</sub> O		
-12.4	-10.3	-11.3	-4.0	5.1	1.0	15.3	-9.3	1.3	Total		
-	-	-	-	-	-	2.3	9.9	7.2	N	Arunachal Pradesh	1
-	-	-	-	-	-	-	-	-	P <sub>2</sub> O <sub>5</sub>		
-	-	-	-	-	-	-	-	-	K <sub>2</sub> O		
-	-	-	-	-	-	2.3	28.3	19.1	Total		
-2.3	5.7	1.6	-2.9	2.3	-0.3	12.0	-0.2	5.7	N	Assam	2
-6.7	-16.1	-11.9	-13.7	16.4	2.2	23.4	-1.5	8.4	P <sub>2</sub> O <sub>5</sub>		
-2.3	-50.0	-29.1	-32.1	3.8	-17.8	1.0	-10.0	-4.5	K <sub>2</sub> O		
-3.1	-9.7	-6.4	-9.4	5.3	-2.2	12.6	-1.6	5.1	Total		
-13.1	-7.2	-9.8	-1.9	5.6	2.4	5.4	7.4	6.6	N	Bihar	3
-19.5	-24.3	-22.7	-0.8	5.8	3.5	20.0	6.7	11.1	P <sub>2</sub> O <sub>5</sub>		
-24.8	-45.7	-40.2	-45.1	-4.6	-18.0	0.8	18.3	14.4	K <sub>2</sub> O		
-15.1	-15.9	-15.6	-3.9	4.9	1.4	8.1	7.9	8.0	Total		
-15.1	31.4	-1.6	-14.1	15.4	-2.6	29.9	2.7	17.3	N	Jharkhand	4
-7.3	-11.4	-8.6	-28.6	25.9	-11.1	44.6	-30.9	10.3	P <sub>2</sub> O <sub>5</sub>		
-2.7	42.7	16.2	-33.9	-29.6	-31.7	16.1	-74.5	-31.7	K <sub>2</sub> O		
-12.7	18.9	-3.0	-18.7	15.7	-5.8	33.3	-7.7	14.4	Total		
-14.8	-0.6	-10.5	42.0	92.3	58.8	-51.3	19.4	-22.7	N	Manipur	5
82.2	-52.4	4.3	30.8	123.3	55.2	-58.4	-57.8	-58.2	P <sub>2</sub> O <sub>5</sub>		
-92.0	-91.0	-91.3				-0.4	-88.1	-59.5	K <sub>2</sub> O		
-7.6	-31.0	-16.7	47.7	131.5	74.8	-49.7	-11.5	-33.3	Total		
-	-	-	-	-	-	-	-	-	N	Meghalaya	6
-	-	-	-	-	-	-	-	-	P <sub>2</sub> O <sub>5</sub>		
-	-	-	-	-	-	-	-	-	K <sub>2</sub> O		
-	-	-	-	-	-	-	-	-	Total		
-83.3	155.6	25.3		63.0		7.5	38.4	19.4	N	Mizoram	7
-77.8		-84.6				-96.5		-93.6	P <sub>2</sub> O <sub>5</sub>		
-		-				-		-58.3	K <sub>2</sub> O		
-82.5	134.7	12.5		66.1		-9.3	36.7	6.7	Total		
-69.6	142.9	-20.0	102.9	-41.8	0.4	84.5	9.1	53.5	N	Nagaland	8
-	-	-	-	-	-	-	-	-	P <sub>2</sub> O <sub>5</sub>		
-	-	-	-	-	-	-	-	-	K <sub>2</sub> O		
-74.1	142.9	-29.4	102.9	-41.2	0.8	89.4	19.0	60.3	Total		
-4.9	18.3	1.3	1.6	-5.5	-0.6	11.9	-5.7	6.7	N	Odisha	9
-5.7	-5.6	-5.7	-14.2	1.5	-9.9	41.4	-18.8	22.7	P <sub>2</sub> O <sub>5</sub>		
-9.1	-48.4	-21.3	-47.9	-11.1	-40.5	17.4	-16.4	7.2	K <sub>2</sub> O		
-5.7	0.9	-3.9	-9.3	-4.0	-7.8	20.5	-10.3	11.2	Total		
-	-	-	-	-	-	-	-	-	N	Sikkim	10
-	-	-	-	-	-	-	-	-	P <sub>2</sub> O <sub>5</sub>		
-	-	-	-	-	-	-	-	-	K <sub>2</sub> O		
-	-	-	-	-	-	-	-	-	Total		



Table 12. Season-wise consumption of N, P<sub>2</sub>O<sub>5</sub> & K<sub>2</sub>O from 2021-22 to 2023-24 and

S. No.	Zone/State	Nutrient	Consumption ('000 MT)								
			2021-22			2022-23			2023-24(P)		
			Kharif	Rabi	Total	Kharif	Rabi	Total	Kharif	Rabi	Total
11	Tripura	N	5.92	5.39	11.31	5.29	4.29	9.58	3.54	3.65	7.19
		P <sub>2</sub> O <sub>5</sub>	2.79	3.44	6.23	2.37	2.21	4.57	2.70	1.52	4.22
		K <sub>2</sub> O	0.83	0.99	1.82	0.68	0.93	1.60	0.82	0.70	1.52
		Total	9.54	9.82	19.36	8.33	7.42	15.76	7.06	5.87	12.93
12	West Bengal	N	310.78	485.65	796.43	337.66	513.55	851.21	347.55	394.37	741.91
		P <sub>2</sub> O <sub>5</sub>	151.27	294.25	445.52	162.01	316.97	478.98	224.67	203.32	427.99
		K <sub>2</sub> O	118.03	182.91	300.94	97.67	186.70	284.36	136.46	137.33	273.80
		Total	580.08	962.81	1,542.89	597.34	1,017.21	1,614.55	708.68	735.02	1,443.70
<b>II. NORTH</b>		<b>N</b>	<b>3,076.22</b>	<b>3,536.64</b>	<b>6,612.86</b>	<b>3,194.93</b>	<b>3,494.77</b>	<b>6,689.70</b>	<b>3,453.22</b>	<b>3,394.44</b>	<b>6,847.66</b>
		<b>P<sub>2</sub>O<sub>5</sub></b>	<b>610.59</b>	<b>1,315.79</b>	<b>1,926.38</b>	<b>774.77</b>	<b>1,170.00</b>	<b>1,944.77</b>	<b>951.44</b>	<b>1,036.88</b>	<b>1,988.32</b>
		<b>K<sub>2</sub>O</b>	<b>137.62</b>	<b>182.66</b>	<b>320.28</b>	<b>70.47</b>	<b>124.81</b>	<b>195.28</b>	<b>88.49</b>	<b>134.38</b>	<b>222.86</b>
		<b>Total</b>	<b>3,824.43</b>	<b>5,035.09</b>	<b>8,859.52</b>	<b>4,040.17</b>	<b>4,789.58</b>	<b>8,829.74</b>	<b>4,493.15</b>	<b>4,565.70</b>	<b>9,058.85</b>
1	Haryana	N	476.99	575.25	1,052.24	494.69	550.84	1,045.52	561.83	551.40	1,113.23
		P <sub>2</sub> O <sub>5</sub>	108.33	168.12	276.45	144.70	142.80	287.49	183.50	115.40	298.90
		K <sub>2</sub> O	26.14	19.17	45.31	11.93	12.08	24.01	15.41	9.74	25.15
		Total	611.46	762.54	1,374.00	651.31	705.71	1,357.02	760.74	676.54	1,437.28
2	Himachal Pradesh	N	17.42	20.85	38.27	20.60	18.26	38.86	17.81	17.58	35.39
		P <sub>2</sub> O <sub>5</sub>	4.27	4.90	9.17	4.03	6.86	10.89	4.40	5.60	10.00
		K <sub>2</sub> O	3.09	5.45	8.54	2.85	5.25	8.10	2.62	4.38	6.99
		Total	24.78	31.20	55.98	27.48	30.37	57.85	24.83	27.56	52.38
3	Jammu & Kashmir	N	50.53	34.88	85.41	46.53	35.74	82.27	40.90	33.88	74.78
		P <sub>2</sub> O <sub>5</sub>	11.46	10.17	21.63	10.57	11.36	21.93	9.81	10.64	20.44
		K <sub>2</sub> O	8.92	4.12	13.04	3.78	6.55	10.33	3.27	6.25	9.52
		Total	70.91	49.17	120.08	60.88	53.65	114.53	53.98	50.77	104.74
4	Punjab	N	769.45	804.44	1,573.89	737.06	754.76	1,491.81	844.98	707.80	1,552.78
		P <sub>2</sub> O <sub>5</sub>	130.63	225.28	355.91	157.92	210.90	368.82	224.91	146.83	371.74
		K <sub>2</sub> O	33.18	26.79	59.97	12.47	16.88	29.34	19.09	16.48	35.57
		Total	933.26	1,056.51	1,989.77	907.45	982.53	1,889.98	1,088.97	871.11	1,960.08
5	Uttar Pradesh	N	1,701.40	2,044.10	3,745.50	1,833.90	2,078.62	3,912.53	1,917.82	2,022.55	3,940.37
		P <sub>2</sub> O <sub>5</sub>	346.14	890.92	1,237.06	445.07	778.89	1,223.96	516.93	742.99	1,259.91
		K <sub>2</sub> O	62.74	123.77	186.51	38.41	81.19	119.60	45.62	94.41	140.03
		Total	2,110.28	3,058.79	5,169.07	2,317.38	2,938.70	5,256.08	2,480.37	2,859.95	5,340.32
6	Uttarakhand	N	54.96	49.78	104.74	56.30	48.77	105.08	62.37	53.23	115.60
		P <sub>2</sub> O <sub>5</sub>	9.26	15.18	24.44	11.66	17.54	29.20	11.12	14.20	25.33
		K <sub>2</sub> O	3.51	3.24	6.75	1.01	2.76	3.76	2.37	3.09	5.46
		Total	67.73	68.20	135.93	68.97	69.07	138.03	75.86	70.52	146.38
7	Chandigarh	N	-	-	-	-	-	-	-	-	-
		P <sub>2</sub> O <sub>5</sub>	-	-	-	-	-	-	-	-	-
		K <sub>2</sub> O	-	-	-	-	-	-	-	-	-
		Total	-	-	-	-	-	-	-	-	-
8	Delhi	N	5.47	7.34	12.81	5.85	7.79	13.63	7.51	7.99	15.51
		P <sub>2</sub> O <sub>5</sub>	0.50	1.22	1.72	0.82	1.65	2.47	0.78	1.23	2.01
		K <sub>2</sub> O	0.04	0.12	0.16	0.03	0.11	0.14	0.11	0.04	0.14
		Total	6.01	8.68	14.69	6.70	9.55	16.24	8.40	9.26	17.66

total by states and percentage variation (April-March) (continued)											
± % variation over previous season/year											
2021-22			2022-23			2023-24(P)			Nutrient	Zone / State	S. No.
Kharif	Rabi	Total	Kharif	Rabi	Total	Kharif	Rabi	Total			
27.3	104.9	55.4	-10.6	-20.4	-15.3	-33.1	-15.0	-25.0	N	Tripura	11
-14.2	17.4	0.8	-15.2	-35.9	-26.6	14.1	-31.2	-7.8	P <sub>2</sub> O <sub>5</sub>		
-37.6	-21.4	-29.7	-18.4	-6.5	-11.9	21.1	-24.2	-5.1	K <sub>2</sub> O		
3.4	44.0	20.6	-12.6	-24.4	-18.6	-15.3	-20.9	-18.0	Total		
-14.0	10.5	-0.5	8.6	5.7	6.9	2.9	-23.2	-12.8	N	West Bengal	12
-18.0	-11.9	-14.1	7.1	7.7	7.5	38.7	-35.9	-10.6	P <sub>2</sub> O <sub>5</sub>		
-17.7	-33.5	-28.1	-17.3	2.1	-5.5	39.7	-26.4	-3.7	K <sub>2</sub> O		
-15.8	-8.2	-11.2	3.0	5.7	4.6	18.6	-27.7	-10.6	Total		
-6.0	-1.2	-3.4	3.9	-1.2	1.2	8.1	-2.9	2.4	N	NORTH	II.
-19.8	-9.0	-12.7	26.9	-11.1	1.0	22.8	-11.4	2.2	P <sub>2</sub> O <sub>5</sub>		
-16.0	-15.8	-15.9	-48.8	-31.7	-39.0	25.6	7.7	14.1	K <sub>2</sub> O		
-8.9	-3.9	-6.1	5.6	-4.9	-0.3	11.2	-4.7	2.6	Total		
5.2	-12.0	-4.9	3.7	-4.2	-0.6	13.6	0.1	6.5	N	Haryana	1
-4.0	-18.2	-13.2	33.6	-15.1	4.0	26.8	-19.2	4.0	P <sub>2</sub> O <sub>5</sub>		
11.0	22.6	15.6	-54.4	-37.0	-47.0	29.2	-19.4	4.8	K <sub>2</sub> O		
3.7	-12.8	-6.2	6.5	-7.5	-1.2	16.8	-4.1	5.9	Total		
-10.5	14.1	1.4	18.3	-12.4	1.5	-13.5	-3.7	-8.9	N	Himachal Pradesh	2
1.7	-30.6	-18.6	-5.6	40.0	18.8	9.2	-18.4	-8.2	P <sub>2</sub> O <sub>5</sub>		
-6.9	-21.4	-16.7	-7.9	-3.6	-5.1	-8.1	-16.7	-13.7	K <sub>2</sub> O		
-8.2	-3.3	-5.5	10.9	-2.7	3.3	-9.6	-9.3	-9.5	Total		
-38.9	10.9	-25.1	-7.9	2.5	-3.7	-12.1	-5.2	-9.1	N	Jammu & Kashmir	3
-59.7	11.8	-42.4	-7.7	11.7	1.4	-7.3	-6.4	-6.8	P <sub>2</sub> O <sub>5</sub>		
-53.4	-57.5	-54.8	-57.6	58.9	-20.8	-13.5	-4.6	-7.9	K <sub>2</sub> O		
-45.6	-2.1	-33.5	-14.1	9.1	-4.6	-11.3	-5.4	-8.5	Total		
8.3	2.5	5.3	-4.2	-6.2	-5.2	14.6	-6.2	4.1	N	Punjab	4
19.5	-17.6	-7.0	20.9	-6.4	3.6	42.4	-30.4	0.8	P <sub>2</sub> O <sub>5</sub>		
17.9	-1.8	8.2	-62.4	-37.0	-51.1	53.1	-2.3	21.2	K <sub>2</sub> O		
10.1	-2.7	2.9	-2.8	-7.0	-5.0	20.0	-11.3	3.7	Total		
-12.1	0.8	-5.5	7.8	1.7	4.5	4.6	-2.7	0.7	N	Uttar Pradesh	5
-29.9	-4.5	-13.3	28.6	-12.6	-1.1	16.1	-4.6	2.9	P <sub>2</sub> O <sub>5</sub>		
-27.2	-18.7	-21.8	-38.8	-34.4	-35.9	18.8	16.3	17.1	K <sub>2</sub> O		
-16.1	-1.7	-8.2	9.8	-3.9	1.7	7.0	-2.7	1.6	Total		
-16.5	-9.2	-13.2	2.4	-2.0	0.3	10.8	9.1	10.0	N	Uttarakhand	6
-25.4	-8.4	-15.7	25.9	15.5	19.5	-4.6	-19.0	-13.3	P <sub>2</sub> O <sub>5</sub>		
1.7	-34.1	-19.4	-71.3	-14.9	-44.3	135.6	11.9	45.0	K <sub>2</sub> O		
-17.09	-10.7	-14.0	1.8	1.3	1.5	10.0	2.1	6.1	Total		
-	-	-	-	-	-	-	-	-	N	Chandigarh	7
-	-	-	-	-	-	-	-	-	P <sub>2</sub> O <sub>5</sub>		
-	-	-	-	-	-	-	-	-	K <sub>2</sub> O		
-	-	-	-	-	-	-	-	-	Total		
51.9	3.2	19.6	6.9	6.1	6.4	28.5	2.7	13.7	N	Delhi	8
-21.9	15.1	1.2	63.8	35.4	43.7	-5.0	-25.4	-18.7	P <sub>2</sub> O <sub>5</sub>		
-73.3	-20.0	-46.7	-27.5	-7.5	-12.5	269.0	-66.7	2.9	K <sub>2</sub> O		
36.9	4.3	15.6	11.4	10.0	10.6	25.4	-3.0	8.7	Total		

Table 12. Season-wise consumption of N, P<sub>2</sub>O<sub>5</sub> & K<sub>2</sub>O from 2021-22 to 2023-24 and

S. No.	Zone/State	Nutrient	Consumption ('000 MT)									
			2021-22			2022-23			2023-24(P)			
			Kharif	Rabi	Total	Kharif	Rabi	Total	Kharif	Rabi	Total	
<b>III. SOUTH</b>			<b>N</b>	<b>2,187.01</b>	<b>1,927.17</b>	<b>4,114.18</b>	<b>2,094.17</b>	<b>2,145.87</b>	<b>4,240.05</b>	<b>2,250.86</b>	<b>1,848.34</b>	<b>4,099.20</b>
			<b>P<sub>2</sub>O<sub>5</sub></b>	<b>1,067.26</b>	<b>821.02</b>	<b>1,888.28</b>	<b>1,013.62</b>	<b>916.15</b>	<b>1,929.77</b>	<b>1,176.79</b>	<b>756.46</b>	<b>1,933.25</b>
			<b>K<sub>2</sub>O</b>	<b>503.03</b>	<b>330.71</b>	<b>833.74</b>	<b>279.78</b>	<b>304.15</b>	<b>583.93</b>	<b>335.70</b>	<b>295.27</b>	<b>630.97</b>
			<b>Total</b>	<b>3,757.30</b>	<b>3,078.90</b>	<b>6,836.20</b>	<b>3,387.58</b>	<b>3,366.17</b>	<b>6,753.75</b>	<b>3,763.35</b>	<b>2,900.07</b>	<b>6,663.42</b>
1	Andhra Pradesh	N	418.01	590.88	1,008.89	414.26	657.50	1,071.76	433.28	598.93	1,032.21	
		P <sub>2</sub> O <sub>5</sub>	232.69	273.84	506.53	232.80	316.21	549.01	246.15	287.70	533.85	
		K <sub>2</sub> O	89.59	94.57	184.16	57.28	91.00	148.28	61.48	94.50	155.98	
		Total	740.29	959.29	1,699.58	704.34	1,064.71	1,769.05	740.91	981.13	1,722.04	
2	Telangana	N	633.47	471.34	1,104.81	604.20	587.37	1,191.57	690.05	525.61	1,215.66	
		P <sub>2</sub> O <sub>5</sub>	260.92	162.99	423.91	258.92	192.58	451.50	292.28	175.12	467.39	
		K <sub>2</sub> O	66.48	41.21	107.69	29.49	39.97	69.46	38.07	44.84	82.91	
		Total	960.87	675.54	1,636.41	892.61	819.92	1,712.53	1,020.40	745.57	1,765.96	
3	Karnataka	N	775.67	461.83	1,237.50	758.25	482.52	1,240.77	797.02	311.73	1,108.76	
		P <sub>2</sub> O <sub>5</sub>	421.10	228.39	649.49	384.52	239.76	624.28	483.77	134.52	618.29	
		K <sub>2</sub> O	211.76	93.62	305.38	113.24	80.47	193.71	156.20	61.87	218.07	
		Total	1,408.53	783.84	2,192.37	1,256.02	802.74	2,058.76	1,437.00	508.12	1,945.12	
4	Kerala	N	42.03	36.22	78.25	36.81	37.02	73.83	35.08	34.49	69.57	
		P <sub>2</sub> O <sub>5</sub>	17.99	13.72	31.71	15.41	13.75	29.16	17.19	14.15	31.33	
		K <sub>2</sub> O	34.66	21.48	56.14	26.41	25.05	51.46	27.27	23.80	51.07	
		Total	94.68	71.42	166.10	78.64	75.82	154.46	79.53	72.44	151.97	
5	Tamil Nadu	N	313.71	362.26	675.97	276.17	376.52	652.69	292.02	373.42	665.44	
		P <sub>2</sub> O <sub>5</sub>	133.36	140.94	274.30	121.03	152.65	273.69	136.58	143.98	280.56	
		K <sub>2</sub> O	99.88	79.45	179.33	52.98	67.31	120.29	52.49	69.89	122.39	
		Total	546.95	582.65	1,129.60	450.18	596.48	1,046.67	481.10	587.29	1,068.39	
6	Puducherry	N	3.93	4.55	8.48	4.36	4.92	9.28	3.39	4.14	7.53	
		P <sub>2</sub> O <sub>5</sub>	0.97	0.97	1.94	0.79	1.14	1.94	0.80	0.98	1.78	
		K <sub>2</sub> O	0.66	0.38	1.04	0.33	0.31	0.65	0.18	0.35	0.52	
		Total	5.56	5.90	11.46	5.49	6.38	11.87	4.37	5.47	9.84	
7	A & N Islands	N	0.19	0.09	0.28	0.11	0.04	0.15	0.02	0.01	0.03	
		P <sub>2</sub> O <sub>5</sub>	0.23	0.17	0.40	0.14	0.06	0.20	0.02	0.02	0.05	
		K <sub>2</sub> O	-	-	-	0.05	0.03	0.08	0.02	0.03	0.04	
		Total	0.42	0.26	0.68	0.30	0.12	0.43	0.06	0.06	0.12	
			-	-	-	-	-	-	-	-	-	
8	Lakshadweep	N	-	-	-	-	-	-	-	-	-	
		P <sub>2</sub> O <sub>5</sub>	-	-	-	-	-	-	-	-	-	
		K <sub>2</sub> O	-	-	-	-	-	-	-	-	-	
		Total	-	-	-	-	-	-	-	-	-	
<b>IV. WEST</b>			<b>N</b>	<b>2,941.98</b>	<b>3,119.14</b>	<b>6,061.12</b>	<b>3,257.52</b>	<b>3,284.29</b>	<b>6,541.80</b>	<b>3,674.57</b>	<b>3,076.62</b>	<b>6,751.19</b>
			<b>P<sub>2</sub>O<sub>5</sub></b>	<b>1,580.04</b>	<b>1,355.25</b>	<b>2,935.29</b>	<b>1,645.30</b>	<b>1,298.43</b>	<b>2,943.73</b>	<b>2,100.78</b>	<b>1,150.70</b>	<b>3,251.47</b>
			<b>K<sub>2</sub>O</b>	<b>525.00</b>	<b>338.72</b>	<b>863.72</b>	<b>254.07</b>	<b>238.88</b>	<b>492.95</b>	<b>352.87</b>	<b>228.28</b>	<b>581.15</b>
			<b>Total</b>	<b>5,047.02</b>	<b>4,813.11</b>	<b>9,860.13</b>	<b>5,156.89</b>	<b>4,821.60</b>	<b>9,978.48</b>	<b>6,128.21</b>	<b>4,455.60</b>	<b>10,583.81</b>
1	Gujarat	N	519.74	695.55	1,215.29	597.39	743.79	1,341.18	677.15	678.12	1,355.27	
		P <sub>2</sub> O <sub>5</sub>	170.73	211.90	382.63	202.97	192.47	395.43	252.62	188.54	441.17	
		K <sub>2</sub> O	45.61	56.32	101.93	26.05	48.22	74.27	37.46	46.20	83.65	
		Total	736.08	963.77	1,699.85	826.41	984.47	1,810.88	967.23	912.86	1,880.09	

total by states and percentage variation (April-March) (continued)											
± % variation over previous season/year									Nutrient	Zone / State	S. No.
2021-22			2022-23			2023-24(P)					
Kharif	Rabi	Total	Kharif	Rabi	Total	Kharif	Rabi	Total			
-4.9	-0.2	-2.7	-4.2	11.3	3.1	7.5	-13.9	-3.3	N	SOUTH	III.
-7.9	-11.9	-9.7	-5.0	11.6	2.2	16.1	-17.4	0.2	P <sub>2</sub> O <sub>5</sub>		
-4.2	-40.4	-22.8	-44.4	-8.0	-30.0	20.0	-2.9	8.1	K <sub>2</sub> O		
-5.7	-9.9	-7.6	-9.8	9.3	-1.2	11.1	-13.8	-1.3	Total		
-18.2	-6.0	-11.5	-0.9	11.3	6.2	4.6	-8.9	-3.7	N	Andhra Pradesh	1
-16.7	-19.3	-18.1	0.05	15.5	8.4	5.7	-9.0	-2.8	P <sub>2</sub> O <sub>5</sub>		
-16.9	-40.9	-31.2	-36.1	-3.8	-19.5	7.3	3.8	5.2	K <sub>2</sub> O		
-17.6	-14.9	-16.1	-4.9	11.0	4.1	5.2	-7.9	-2.7	Total		
-10.5	2.1	-5.5	-4.6	24.6	7.9	14.2	-10.5	2.0	N	Telangana	2
-12.8	-7.1	-10.7	-0.8	18.2	6.5	12.9	-9.1	3.5	P <sub>2</sub> O <sub>5</sub>		
-21.8	-53.3	-37.8	-55.6	-3.0	-35.5	29.1	12.2	19.4	K <sub>2</sub> O		
-12.0	-6.9	-10.0	-7.1	21.4	4.7	14.3	-9.1	3.1	Total		
2.9	8.5	4.9	-2.2	4.5	0.3	5.1	-35.4	-10.6	N	Karnataka	3
-3.9	-8.6	-5.6	-8.7	5.0	-3.9	25.8	-43.9	-1.0	P <sub>2</sub> O <sub>5</sub>		
4.0	-38.3	-14.0	-46.5	-14.1	-36.6	37.9	-23.1	12.6	K <sub>2</sub> O		
0.9	-5.3	-1.4	-10.8	2.4	-6.1	14.4	-36.7	-5.5	Total		
-5.1	-17.2	-11.1	-12.4	2.2	-5.7	-4.7	-6.8	-5.8	N	Kerala	4
-9.6	-24.0	-16.5	-14.3	0.2	-8.0	11.5	2.9	7.4	P <sub>2</sub> O <sub>5</sub>		
-7.9	-42.7	-25.2	-23.8	16.6	-8.3	3.2	-5.0	-0.8	K <sub>2</sub> O		
-7.0	-28.1	-17.4	-16.9	6.2	-7.0	1.1	-4.5	-1.6	Total		
12.7	-1.1	4.8	-12.0	3.9	-3.4	5.7	-0.8	2.0	N	Tamil Nadu	5
10.0	-4.8	1.8	-9.2	8.3	-0.2	12.8	-5.7	2.5	P <sub>2</sub> O <sub>5</sub>		
10.6	-31.7	-13.2	-47.0	-15.3	-32.9	-0.9	3.8	1.7	K <sub>2</sub> O		
11.6	-7.6	0.8	-17.7	2.4	-7.3	6.9	-1.5	2.1	Total		
-7.3	7.6	0.1	11.0	8.2	9.5	-22.2	-15.8	-18.9	N	Puducherry	6
-3.0	-15.7	-9.8	-18.1	17.7	-0.2	0.5	-13.8	-8.0	P <sub>2</sub> O <sub>5</sub>		
1.5	-57.8	-32.9	-49.5	-17.6	-37.9	-46.8	10.5	-19.0	K <sub>2</sub> O		
-5.6	-6.1	-5.8	-1.3	8.1	3.5	-20.4	-14.2	-17.1	Total		
-	-30.8	115.4	-41.1	-60.0	-47.1	-83.9	-66.7	-79.7	N	A & N Islands	7
-	-	-	-39.6	-65.9	-50.8	-82.7	-63.8	-77.2	P <sub>2</sub> O <sub>5</sub>		
-	-	-	-	-	-	-67.3	-13.8	-48.1	K <sub>2</sub> O		
-	100.0	423.1	-27.9	-52.7	-37.4	-80.5	-52.8	-72.5	Total		
-	-	-	-	-	-	-	-	-	N	Lakshadweep	8
-	-	-	-	-	-	-	-	-	P <sub>2</sub> O <sub>5</sub>		
-	-	-	-	-	-	-	-	-	K <sub>2</sub> O		
-	-	-	-	-	-	-	-	-	Total		
-11.4	-3.5	-7.5	10.7	5.3	7.9	12.8	-6.3	3.2	N	WEST	IV.
-13.8	-13.7	-13.7	4.1	-4.2	0.3	27.7	-11.4	10.5	P <sub>2</sub> O <sub>5</sub>		
-1.0	-21.7	-10.3	-51.6	-29.5	-42.9	38.9	-4.4	17.9	K <sub>2</sub> O		
-11.2	-8.1	-9.7	2.2	0.2	1.2	18.8	-7.6	6.1	Total		
-15.8	-5.0	-10.0	14.9	6.9	10.4	13.4	-8.8	1.1	N	Gujarat	1
-18.1	-19.3	-18.7	18.9	-9.2	3.3	24.5	-2.0	11.6	P <sub>2</sub> O <sub>5</sub>		
-6.2	-36.2	-25.6	-42.9	-14.4	-27.1	43.8	-4.2	12.6	K <sub>2</sub> O		
-15.8	-11.0	-13.2	12.3	2.1	6.5	17.0	-7.3	3.8	Total		

Table 12. Season-wise consumption of N, P<sub>2</sub>O<sub>5</sub> & K<sub>2</sub>O from 2021-22 to 2023-24 and

S. No.	Zone/State	Nutrient	Consumption ('000 MT)								
			2021-22			2022-23			2023-24(P)		
			Kharif	Rabi	Total	Kharif	Rabi	Total	Kharif	Rabi	Total
2	Madhya Pradesh	N	690.89	937.91	1,628.80	815.32	1,002.29	1,817.61	897.53	1,047.86	1,945.39
		P <sub>2</sub> O <sub>5</sub>	410.50	479.71	890.21	452.85	459.51	912.36	553.62	468.65	1,022.27
		K <sub>2</sub> O	60.75	71.97	132.72	32.91	41.73	74.64	42.86	43.58	86.43
		Total	1,162.14	1,489.59	2,651.73	1,301.08	1,503.53	2,804.62	1,494.01	1,560.09	3,054.10
3	Chhattisgarh	N	354.39	100.29	454.68	347.36	116.79	464.15	386.85	130.97	517.82
		P <sub>2</sub> O <sub>5</sub>	190.40	44.31	234.71	159.91	51.53	211.44	211.01	56.49	267.49
		K <sub>2</sub> O	56.20	12.42	68.62	27.12	7.49	34.61	32.10	8.11	40.21
		Total	600.99	157.02	758.01	534.39	175.81	710.20	629.95	195.57	825.52
4	Maharashtra	N	965.63	628.37	1,594.00	905.42	691.61	1,597.03	1,048.60	527.41	1,576.02
		P <sub>2</sub> O <sub>5</sub>	631.14	381.05	1,012.19	541.71	388.37	930.08	713.45	273.21	986.67
		K <sub>2</sub> O	349.64	179.74	529.38	162.21	134.00	296.21	233.63	122.39	356.03
		Total	1,946.41	1,189.16	3,135.57	1,609.35	1,213.98	2,823.32	1,995.69	923.02	2,918.71
5	Rajasthan	N	410.04	756.51	1,166.55	590.92	729.29	1,320.21	663.41	691.73	1,355.14
		P <sub>2</sub> O <sub>5</sub>	176.66	238.03	414.69	287.20	206.22	493.43	369.38	163.60	532.98
		K <sub>2</sub> O	12.11	18.03	30.14	5.37	7.22	12.59	6.37	7.81	14.18
		Total	598.81	1,012.57	1,611.38	883.50	942.73	1,826.23	1,039.16	863.14	1,902.30
6	Goa	N	1.05	0.46	1.51	0.78	0.48	1.26	0.86	0.49	1.34
		P <sub>2</sub> O <sub>5</sub>	0.51	0.22	0.73	0.56	0.32	0.88	0.59	0.20	0.79
		K <sub>2</sub> O	0.69	0.24	0.93	0.40	0.23	0.63	0.46	0.18	0.64
		Total	2.25	0.92	3.17	1.74	1.03	2.77	1.90	0.87	2.77
7	Daman & Diu	N	-	-	-	-	-	-	-	-	-
		P <sub>2</sub> O <sub>5</sub>	-	-	-	-	-	-	-	-	-
		K <sub>2</sub> O	-	-	-	-	-	-	-	-	-
		Total	-	-	-	-	-	-	-	-	-
8	Dadra & Nagar Haveli	N	0.24	0.05	0.29	0.31	0.05	0.36	0.16	0.05	0.21
		P <sub>2</sub> O <sub>5</sub>	0.10	0.03	0.13	0.11	0.01	0.12	0.11	0.01	0.12
		K <sub>2</sub> O	-	-	-	-	-	-	-	-	-
		Total	0.34	0.08	0.42	0.42	0.05	0.48	0.26	0.06	0.32
<b>All India</b>		N	9,434.91	10,003.40	19,438.31	9,788.35	10,417.99	20,206.34	10,712.65	9,743.72	20,456.37
		P <sub>2</sub> O <sub>5</sub>	3,717.13	4,111.37	7,828.50	3,872.65	4,048.86	7,921.51	4,812.82	3,493.83	8,306.65
		K <sub>2</sub> O	1,395.48	1,133.97	2,529.45	765.90	949.87	1,715.77	983.06	895.50	1,878.56
		Total	14,547.52	15,248.74	29,796.26	14,426.89	15,416.71	29,843.61	16,508.53	14,133.05	30,641.58

(P) = Provisional.

Note : 1. Fertilizer 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 &amp; vertical) may not exactly tally.

3. DBT sale assumed as consumption.

total by states and percentage variation (April-March) (concluded)											
± % variation over previous season/year									Nutrient	Zone / State	S. No.
2021-22			2022-23			2023-24(P)					
Kharif	Rabi	Total	Kharif	Rabi	Total	Kharif	Rabi	Total			
-9.9	-2.9	-6.0	18.0	6.9	11.6	10.1	4.5	7.0	N	Madhya Pradesh	2
-14.5	-11.2	-12.8	10.3	-4.2	2.5	22.3	2.0	12.0	P <sub>2</sub> O <sub>5</sub>		
-5.0	-5.6	-5.3	-45.8	-42.0	-43.8	30.2	4.4	15.8	K <sub>2</sub> O		
-11.4	-5.9	-8.4	12.0	0.9	5.8	14.8	3.8	8.9	Total		
-9.7	-24.3	-13.4	-2.0	16.5	2.1	11.4	12.1	11.6	N	Chhattisgarh	3
-8.7	-30.2	-13.7	-16.0	16.3	-9.9	32.0	9.6	26.5	P <sub>2</sub> O <sub>5</sub>		
0.9	-34.0	-7.9	-51.7	-39.7	-49.6	18.4	8.3	16.2	K <sub>2</sub> O		
-8.5	-26.9	-13.0	-11.1	12.0	-6.3	17.9	11.2	16.2	Total		
-10.2	0.7	-6.2	-6.2	10.1	0.2	15.8	-23.7	-1.3	N	Maharashtra	4
-13.9	-3.6	-10.3	-14.2	1.9	-8.1	31.7	-29.7	6.1	P <sub>2</sub> O <sub>5</sub>		
-0.6	-23.2	-9.6	-53.6	-25.4	-44.0	44.0	-8.7	20.2	K <sub>2</sub> O		
-9.9	-5.1	-8.1	-17.3	2.1	-10.0	24.0	-24.0	3.4	Total		
-11.7	-2.8	-6.1	44.1	-3.6	13.2	12.3	-5.1	2.6	N	Rajasthan	5
-12.2	-22.9	-18.7	62.6	-13.4	19.0	28.6	-20.7	8.0	P <sub>2</sub> O <sub>5</sub>		
23.8	21.2	22.2	-55.6	-60.0	-58.2	18.5	8.3	12.6	K <sub>2</sub> O		
-11.3	-8.1	-9.3	47.5	-6.9	13.3	17.6	-8.4	4.2	Total		
-12.5	-20.7	-15.2	-25.5	3.3	-16.8	9.3	2.1	6.6	N	Goa	6
-15.0	-33.3	-21.5	10.4	46.4	19.9	4.6	-38.8	-10.2	P <sub>2</sub> O <sub>5</sub>		
25.5	-41.5	-3.1	-42.8	-3.3	-32.6	16.2	-20.7	2.6	K <sub>2</sub> O		
-4.3	-30.3	-13.6	-22.7	11.8	-12.6	9.4	-15.8		Total		
-	-	-	-	-	-	-	-	-	N	Daman & Diu	7
-	-	-	-	-	-	-	-	-	P <sub>2</sub> O <sub>5</sub>		
-	-	-	-	-	-	-	-	-	K <sub>2</sub> O		
-	-	-	-	-	-	-	-	-	Total		
-52.0	150.0	-44.2	30.4	-10.0	23.4	-49.8	13.3	-41.9	N	Dadra & Nagar Haveli	8
-71.4	-	-62.9	7.0	-70.0	-10.8	-1.9	22.2	-	P <sub>2</sub> O <sub>5</sub>		
-	-	-	-	-	-	-	-	-	K <sub>2</sub> O		
-60.0	300.0	-51.7	23.5	-32.5	15.2	-37.6	14.8	-33.1	Total		
-8.2	-1.2	-4.7	3.7	4.1	4.0	9.4	-6.5	1.2	N	All India	
-13.3	-12.4	-12.8	4.2	-1.5	1.2	24.3	-13.7	4.9	P <sub>2</sub> O <sub>5</sub>		
-6.5	-31.7	-19.8	-45.1	-16.2	-32.2	28.4	-5.7	9.5	K <sub>2</sub> O		
-9.4	-7.5	-8.4	-0.8	1.1	0.2	14.4	-8.3	2.7	Total		

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

**Table 13. States according to descending order of contribution to total increase in consumption (N+P<sub>2</sub>O<sub>5</sub>+K<sub>2</sub>O) 2023-24 over 2022-23 and 2022-23 over 2021-22**

Ranking in terms of increase in consumption 2023-24 over 2022-23	States	2023-24(P) over 2022-23			Ranking in terms of increase in consumption 2022-23 over 2021-22	States	2022-23(P) over 2021-22		
		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 (%)
<b>States with Positive Growth</b>									
1	Madhya Pradesh	249.48	21.59	21.59	1	Rajasthan	214.85	26.54	26.54
2	Bihar	130.77	11.32	32.91	2	Madhya Pradesh	152.89	18.89	45.43
3	Chhattisgarh	115.32	9.98	42.89	3	Gujarat	111.03	13.72	59.14
4	Maharashtra	95.39	8.26	51.15	4	Uttar Pradesh	87.01	10.75	69.89
5	Uttar Pradesh	84.24	7.29	58.44	5	Telangana	76.12	9.40	79.29
6	Haryana	80.26	6.95	65.38	6	West Bengal	71.66	8.85	88.15
7	Rajasthan	76.08	6.58	71.97	7	Andhra Pradesh	69.47	8.58	96.73
8	Punjab	70.10	6.07	78.03	8	Bihar	22.53	2.78	99.51
9	Gujarat	69.21	5.99	84.02	9	Uttarakhand	2.095	0.26	99.77
10	Odisha	60.76	5.26	89.28	10	Himachal Pradesh	1.87	0.23	100.00
11	Telangana	53.43	4.62	93.91					
12	Jharkhand	27.39	2.37	96.28					
13	Tamil Nadu	21.72	1.88	98.16					
14	Assam	12.94	1.12	99.28					
15	Uttarakhand	8.36	0.72	100.00					
<b>Sub Total</b>		<b>1155.42</b>					<b>809.53</b>		
<b>States with Negative Growth</b>									
1	Kerala	2.49	0.71	0.71	1	Jammu & Kashmir	5.55	0.72	0.72
2	Himachal Pradesh	5.47	1.57	2.28	2	Assam	5.65	0.73	1.45
3	Jammu & Kashmir	9.79	2.80	5.08	3	Kerala	11.64	1.50	2.95
4	Andhra Pradesh	47.02	13.46	18.54	4	Jharkhand	11.71	1.51	4.47
5	Karnataka	113.64	32.54	51.08	5	Haryana	16.98	2.19	6.66
6	West Bengal	170.85	48.92	100.00	6	Odisha	45.86	5.93	12.59
					7	Chhattisgarh	47.81	6.18	18.77
					8	Tamil Nadu	82.93	10.72	29.48
					9	Punjab	99.79	12.90	42.38
					10	Karnataka	133.61	17.27	59.65
					11	Maharashtra	312.25	40.35	100.00
<b>Sub Total</b>		<b>349.26</b>					<b>773.79</b>		
<b>All India</b>		<b>797.97 \$</b>					<b>47.35 \$</b>		
(P) = Provisional.						\$ = Includes small states/UTs/Plantations.			
Note: For consumption figures, see Table 12.									

**Table 14. States according to descending order of share of consumption to All-India consumption (N+P<sub>2</sub>O<sub>5</sub>+K<sub>2</sub>O) in 2022-23 and 2023-24**

Ranking		States	Share of All India total (%)	
2022-23	2023-24 (P)		2022-23	2023-24 (P)
1	1	Uttar Pradesh	17.6	17.4
3	2	Madhya Pradesh	9.4	10.0
2	3	Maharashtra	9.5	9.5
5	4	Punjab	6.3	6.4
4	5	Karnataka	6.9	6.3
6	6	Rajasthan	6.1	6.2
7	7	Gujarat	6.1	6.1
10	8	Bihar	5.5	5.8
9	9	Telangana	5.7	5.8
8	10	Andhra Pradesh	5.9	5.6
11	11	West Bengal	5.4	4.7
12	12	Haryana	4.5	4.7
13	13	Tamil Nadu	3.5	3.5
14	14	Chhattisgarh	2.4	2.7
15	15	Odisha	1.8	2.0
16	16	Assam	0.9	0.9
17	17	Jharkhand	0.6	0.7
18	18	Kerala	0.5	0.5
19	19	Uttarakhand	0.5	0.5
20	20	Jammu & Kashmir	0.4	0.3
21	21	Himachal Pradesh	0.2	0.2

(P) = Provisional.

Note: 1. For consumption figures, see Table 12.

2. Share of All-India consumption relates to ranking of states in individual years.

country. Next in order were Haryana (4.7%) and Tamil Nadu (3.5%). 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 14).

Per hectare use of total fertilizer nutrients varied from as low as 1.2 kg in Nagaland to as high as 247.6 kg in Punjab. All-India per hectare consumption of total nutrients was 139.8 kg in 2023-24. The major states which had consumption higher (kg ha<sup>-1</sup>) than All-India average include Punjab (247.6), Bihar (241.1), Andhra Pradesh (235.0), Telangana (220.0), Haryana (218.9), Uttar Pradesh (189.4), Tamil Nadu (168.3), Uttarakhand (151.0), Chhattisgarh (144.7) and West Bengal (140.7). In the remaining states, per hectare consumption was lower than the All-India average of 139.8 kg. Table 15 shows the state-wise consumption of plant nutrients per hectare of gross cropped area.

As mentioned earlier, All-India NPK use ratio was 10.9:4.4:1 during 2023-24. However, NPK use ratio widely varied among various states. While NPK use ratio was around 4.4:2.8:1 in Maharashtra, it

was 95.6:37.6:1 in Rajasthan during 2023-24. The state-wise details of the ratio of N and P<sub>2</sub>O<sub>5</sub> in relation to K<sub>2</sub>O are shown in Table 16.

Details of state-wise review of fertilizer consumption, weather and crop situation during 2023-24 are presented in the following paragraphs.

## I. EAST ZONE

### i) Assam

#### Fertilizer Consumption

Consumption of total fertilizer nutrients (N+P<sub>2</sub>O<sub>5</sub>+K<sub>2</sub>O) in Assam at 268.9 thousand tonnes (thousand MT) in 2023-24 increased by 5.1% over 2022-23. It increased by 12.6% in *kharif* 2023 but declined by 1.6% in *rabi* 2023-24 over the corresponding seasons of the previous year. *Kharif:rabi* share in consumption of NPK changed from 47:53 during 2022-23 to 50:50 during 2023-24.

Consumption of N at 188.1 thousand MT and P<sub>2</sub>O<sub>5</sub> at 53.5 thousand MT recorded increase of 5.7% and 8.4%, respectively, during 2023-24 over 2022-23. However, consumption of K<sub>2</sub>O at 27.4 thousand MT witnessed a decline of 4.5%. NPK use ratio changed from 6.2:1.7:1 during 2022-23 to 6.9:2.0:1 during 2023-24. Per hectare use of fertilizer nutrients increased from 66.1 kg during 2022-23 to 69.5 kg during 2023-24.

#### Weather and Crop Situation

Total rainfall received during southwest monsoon 2023 (June-September) was normal at 1428 mm. Out of 27 districts in the state, 13 and 14 districts received normal and deficient rains, respectively, during the season. During *kharif* 2023, sown area under rice, pulses, oilseeds and jute & mesta was down by 44, 8, 7 and 3 thousand ha, respectively, compared to *kharif* 2022. However, sown area under coarse cereals was higher by 7 thousand ha.

During post-monsoon 2023 (October-December), rainfall received was normal at 179 mm. Out of 27 districts, 18 and 9 districts received normal to excess and deficient rains, respectively, during the season. During *rabi* 2023-24, sown area under rice, pulses and oilseeds was higher by 18, 15 and 1 thousand ha, respectively, compared to *rabi* 2022-23. However, sown area under wheat and coarse cereals declined by 2 thousand ha each.

### ii) Bihar

#### Fertilizer Consumption

Consumption of total fertilizer nutrients in Bihar at 1.767 million MT in 2023-24 recorded an increase of 8% over the previous year. It increased in *kharif* 2023



Table 15. Consumption of plant nutrients per unit of gross cropped area from 2021-22 to 2023-24 (April-March)												
Zone/State	2021-22				2022-23				2023-24 (P)			
	N	P <sub>2</sub> O <sub>5</sub>	K <sub>2</sub> O	Total	N	P <sub>2</sub> O <sub>5</sub>	K <sub>2</sub> O	Total	N	P <sub>2</sub> O <sub>5</sub>	K <sub>2</sub> O	Total
<b>East</b>	<b>86.9</b>	<b>35.4</b>	<b>16.8</b>	<b>139.0</b>	<b>89.6</b>	<b>36.2</b>	<b>14.5</b>	<b>140.3</b>	<b>90.4</b>	<b>37.2</b>	<b>14.5</b>	<b>142.1</b>
Arunachal Pradesh	-	-	-	-	1.1	-	-	1.1	1.1	0.1	0.01	1.3
Assam	46.1	12.5	9.0	67.6	46.0	12.7	7.4	66.1	48.6	13.8	7.1	69.5
Bihar	158.2	48.3	13.7	220.2	162.0	50.0	11.2	223.2	172.7	55.5	12.8	241.1
Jharkhand	76.9	28.8	3.6	109.4	74.9	25.6	2.5	103.0	87.9	28.3	1.7	117.9
Manipur	24.4	6.8	0.4	31.5	38.8	10.5	5.9	55.1	30.0	4.4	2.4	36.8
Meghalaya	-	-	-	-	-	-	-	-	5.9	1.2	-	7.2
Mizoram	6.0	0.1	-	6.1	23.5	2.9	0.2	26.6	28.1	0.2	0.1	28.4
Nagaland	0.8	-	-	0.8	0.8	0.003	-	0.8	1.2	0.04	0.02	1.2
Odisha	70.4	33.8	13.4	117.5	70.0	30.4	8.0	108.4	74.6	37.3	8.6	120.5
Sikkim	-	-	-	-	-	-	-	-	-	-	-	-
Tripura	23.2	12.8	3.7	39.8	19.7	9.4	3.3	32.4	14.8	8.7	3.1	26.6
West Bengal	77.6	43.4	29.3	150.4	83.0	46.7	27.7	157.4	72.3	41.7	26.7	140.7
<b>North</b>	<b>144.6</b>	<b>42.1</b>	<b>7.0</b>	<b>193.7</b>	<b>146.3</b>	<b>42.5</b>	<b>4.3</b>	<b>193.1</b>	<b>149.7</b>	<b>43.5</b>	<b>4.9</b>	<b>198.1</b>
Haryana	160.3	42.1	6.9	209.3	159.2	43.8	3.7	206.7	169.6	45.5	3.8	218.9
Himachal Pradesh	43.0	10.3	9.6	62.9	43.7	12.2	9.1	65.0	39.8	11.2	7.9	58.9
Jammu & Kashmir	75.3	19.1	11.5	105.9	72.5	19.3	9.1	101.0	65.9	18.0	8.4	92.3
Punjab	198.8	45.0	7.6	251.4	188.5	46.6	3.7	238.8	196.2	47.0	4.5	247.6
Uttar Pradesh	132.8	43.9	6.6	183.3	138.7	43.4	4.2	186.4	139.7	44.7	5.0	189.4
Uttarakhand	108.0	25.2	7.0	140.2	108.4	30.1	3.9	142.4	119.2	26.1	5.6	151.0
Chandigarh	-	-	-	-	-	-	-	-	-	-	-	-
Delhi	219.1	29.4	2.7	251.2	233.2	42.3	2.4	277.8	265.2	34.4	2.5	302.0
<b>South</b>	<b>105.4</b>	<b>48.4</b>	<b>21.4</b>	<b>175.1</b>	<b>108.6</b>	<b>49.4</b>	<b>15.0</b>	<b>173.0</b>	<b>105.0</b>	<b>49.5</b>	<b>16.2</b>	<b>170.7</b>
Andhra Pradesh	137.7	69.1	25.1	231.9	146.3	74.9	20.2	241.4	140.9	72.9	21.3	235.0
Telangana	137.7	52.8	13.4	203.9	148.5	56.3	8.7	213.4	151.5	58.2	10.3	220.0
Karnataka	83.9	44.0	20.7	148.7	84.1	42.3	13.1	139.6	75.2	41.9	14.8	131.9
Kerala	31.0	12.6	22.3	65.8	29.3	11.6	20.4	61.2	27.6	12.4	20.2	60.2
Tamil Nadu	106.5	43.2	28.2	177.9	102.8	43.1	18.9	164.9	104.8	44.2	19.3	168.3
Puducherry	302.9	69.3	37.2	409.4	331.6	69.2	23.1	423.8	269.1	63.7	18.7	351.4
A & N Islands	7.1	10.2	-	17.3	3.8	5.0	2.1	10.8	0.8	1.1	1.1	3.0
Lakshadweep	-	-	-	-	-	-	-	-	-	-	-	-
<b>West</b>	<b>58.4</b>	<b>28.3</b>	<b>8.3</b>	<b>94.9</b>	<b>63.0</b>	<b>28.3</b>	<b>4.7</b>	<b>96.1</b>	<b>65.0</b>	<b>31.3</b>	<b>5.6</b>	<b>101.9</b>
Gujarat	82.3	25.9	6.9	115.2	90.9	26.8	5.0	122.7	91.8	29.9	5.7	127.4
Madhya Pradesh	54.2	29.6	4.4	88.2	60.5	30.4	2.5	93.3	64.7	34.0	2.9	101.6
Chhattisgarh	79.7	41.1	12.0	132.9	81.4	37.1	6.1	124.5	90.8	46.9	7.0	144.7
Maharashtra	62.0	39.3	20.6	121.9	62.1	36.1	11.5	109.7	61.3	38.3	13.8	113.4
Rajasthan	42.5	15.1	1.1	58.7	48.1	18.0	0.5	66.5	49.4	19.4	0.5	69.3
Goa	10.4	5.1	6.4	21.9	8.7	6.1	4.3	19.2	9.3	5.4	4.4	19.2
Daman & Diu	-	-	-	-	-	-	-	-	-	-	-	-
D & N Haveli	14.6	6.5	-	21.1	18.0	5.8	-	24.3	10.4	5.8	-	16.3
<b>All India</b>	<b>88.7</b>	<b>35.7</b>	<b>11.5</b>	<b>136.0</b>	<b>92.2</b>	<b>36.1</b>	<b>7.8</b>	<b>136.2</b>	<b>93.3</b>	<b>37.9</b>	<b>8.6</b>	<b>139.8</b>

Note: 1. Consumption of plant nutrients per hectare have been worked out on the basis of latest gross cropped area available for 2021-22.  
2. Due to rounding of figures, totals may not exactly tally.

by 8.1% and in *rabi* 2023-24 by 7.9% over the corresponding seasons of the previous year. *Kharif:rabi* share in consumption of total nutrients remained the same of 2022-23 at 38:62.

Consumption of N, P<sub>2</sub>O<sub>5</sub> and K<sub>2</sub>O at 1.266, 0.407 and 0.094 million MT during 2023-24 registered increase of 6.6%, 11.1% and 14.4%, respectively, over 2022-23. There had been change in NPK use ratio from 14.4:4.5:1

during 2022-23 to 13.5:4.3:1 during 2023-24. Per hectare consumption of total fertilizer nutrients increased from 223.2 kg to 241.1 kg during the period.

#### Weather and Crop Situation

The state received deficient rains during southwest monsoon 2023 at 761 mm. Out of 38 districts in the state, only 17 received normal and remaining 21 received deficient rains during the season. During *kharif*

Table 16. Consumption ratio of N & P <sub>2</sub> O <sub>5</sub> in relation to K <sub>2</sub> O from 2021-22 to 2023-24									
Zone/State	2021-22			2022-23			2023-24 (P)		
	N	P <sub>2</sub> O <sub>5</sub>	K <sub>2</sub> O	N	P <sub>2</sub> O <sub>5</sub>	K <sub>2</sub> O	N	P <sub>2</sub> O <sub>5</sub>	K <sub>2</sub> O
<b>East</b>	<b>5.2</b>	<b>2.1</b>	<b>1</b>	<b>6.2</b>	<b>2.5</b>	<b>1</b>	<b>6.2</b>	<b>2.6</b>	<b>1</b>
Arunachal Pradesh	-	-	-	-	-	-	194.0	20.5	1
Assam	5.1	1.4	1	6.2	1.7	1	6.9	2.0	1
Bihar	11.6	3.5	1	14.4	4.5	1	13.5	4.3	1
Jharkhand	21.3	8.0	1	30.4	10.4	1	52.2	16.8	1
Manipur	68.5	18.9	1	6.6	1.8	1	12.7	1.8	1
Meghalaya	-	-	-	-	-	-	-	-	-
Mizoram	-	-	-	135.0	16.5	1	386.8	2.5	1
Nagaland	-	-	-	-	-	-	61.7	2.0	1
Odisha	5.3	2.5	1	8.8	3.8	1	8.7	4.4	1
Sikkim	-	-	-	-	-	-	-	-	-
Tripura	6.2	3.4	1	6.0	2.9	1	4.7	2.8	1
West Bengal	2.6	1.5	1	3.0	1.7	1	2.7	1.6	1
<b>North</b>	<b>20.6</b>	<b>6.0</b>	<b>1</b>	<b>34.3</b>	<b>10.0</b>	<b>1</b>	<b>30.7</b>	<b>8.9</b>	<b>1</b>
Haryana	23.2	6.1	1	43.5	12.0	1	44.3	11.9	1
Himachal Pradesh	4.5	1.1	1	4.8	1.3	1	5.1	1.4	1
Jammu & Kashmir	6.5	1.7	1	8.0	2.1	1	7.9	2.1	1
Punjab	26.2	5.9	1	50.8	12.6	1	43.7	10.5	1
Uttar Pradesh	20.1	6.6	1	32.7	10.2	1	28.1	9.0	1
Uttarakhand	15.5	3.6	1	27.9	7.8	1	21.2	4.6	1
Delhi	80.1	10.8	1	97.4	17.7	1	107.7	14.0	1
<b>South</b>	<b>4.9</b>	<b>2.3</b>	<b>1</b>	<b>7.3</b>	<b>3.3</b>	<b>1</b>	<b>6.5</b>	<b>3.1</b>	<b>1</b>
Andhra Pradesh	5.5	2.8	1	7.2	3.7	1	6.6	3.4	1
Telangana	10.3	3.9	1	17.2	6.5	1	14.7	5.6	1
Karnataka	4.1	2.1	1	6.4	3.2	1	5.1	2.8	1
Kerala	1.4	0.6	1	1.4	0.6	1	1.4	0.6	1
Tamil Nadu	3.8	1.5	1	5.4	2.3	1	5.4	2.3	1
Puducherry	8.2	1.9	1	14.4	3.0	1	14.4	3.4	1
A & N Islands	-	-	-	1.8	2.4	1	0.7	1.1	1
<b>West</b>	<b>7.0</b>	<b>3.4</b>	<b>1</b>	<b>13.3</b>	<b>6.0</b>	<b>1</b>	<b>11.6</b>	<b>5.6</b>	<b>1</b>
Gujarat	11.9	3.8	1	18.1	5.3	1	16.2	5.3	1
Madhya Pradesh	12.3	6.7	1	24.4	12.2	1	22.5	11.8	1
Chhattisgarh	6.6	3.4	1	13.4	6.1	1	12.9	6.7	1
Maharashtra	3.0	1.9	1	5.4	3.1	1	4.4	2.8	1
Rajasthan	38.7	13.8	1	104.9	39.2	1	95.6	37.6	1
Goa	1.6	0.8	1	2.0	1.4	1	2.1	1.2	1
Daman & Diu	-	-	-	-	-	-	-	-	-
D & N Haveli	-	-	-	-	-	-	-	-	-
<b>All India</b>	<b>7.7</b>	<b>3.1</b>	<b>1</b>	<b>11.8</b>	<b>4.6</b>	<b>1</b>	<b>10.9</b>	<b>4.4</b>	<b>1</b>

(P) = Provisional.

2023, sown area under rice, pulses and coarse cereals increased by 489, 6 and 18 thousand ha, respectively, compared to *kharif* 2022. However, sown area under oilseeds, sugarcane and jute & mesta reduced by 12, 11 and 22 thousand ha, respectively.

During post-monsoon 2023, state received excess rains at 103 mm. Out of 38 districts, as many as 22 districts received excess to large excess, 10 received normal and 6 received deficient to large deficient rains during the period. During *rabi* 2023-24, sown area under pulses, coarse cereals and oilseeds increased by 124, 164 and 89 thousand ha, respectively, compared to *rabi* 2022-23. However, sown area under wheat and rice declined by 10 and 3 thousand ha, respectively.

### iii) Jharkhand

#### Fertilizer Consumption

Consumption in terms of total fertilizer nutrients at 217.5 thousand MT during 2023-24 recorded an increase of 14.4% over the previous year. During *kharif* 2023, it was 33.3% higher but lower by 7.7% in *rabi* 2023-24 over the corresponding seasons of the previous year. Accordingly, *kharif:rabi* share in NPK consumption completely changed from 54:46 during 2022-23 to 63:37 during 2023-24.

There was increase in consumption of N and P<sub>2</sub>O<sub>5</sub> and decrease of K<sub>2</sub>O during 2023-24 over 2022-23. Consumption of N and P<sub>2</sub>O<sub>5</sub> at 162.2 and 52.2 thousand MT during 2023-24 recorded increase of 17.3% and 10.3%, respectively, over 2022-23.

However, consumption of  $K_2O$  at 3.1 thousand MT registered a sharp decline of 31.7% during the period. Accordingly, NPK use ratio widened from 30.4:10.4:1 during 2022-23 to 52.2:16.8:1 during 2023-24. Per hectare consumption of total fertilizer nutrients increased from 103 kg during 2022-23 to 117.9 kg during 2023-24.

#### Weather and Crop Situation

Rains received during southwest monsoon 2023 at 756 mm was deficient. Out of 24 districts, only 7 districts received normal and remaining 17 received deficient rains during the season. During *kharif* 2023, sown area under rice, pulses, coarse cereals and oilseeds increased by 304, 13, 39 and 1 thousand ha, respectively, compared to *kharif* 2022.

During post-monsoon, the state received large excess rains at 178 mm. Out of 24 districts, 23 received excess to large excess and 1 received deficient rains during the season. During *rabi* 2023-24, sown area under wheat, pulses and oilseeds declined by 30, 37 and 40 thousand ha, respectively, compared to *rabi* 2022-23. However, sown area under coarse cereals increased by 1 thousand ha.

#### iv) Odisha

##### Fertilizer Consumption

Consumption of total fertilizer nutrients at 0.602 million MT during 2023-24 registered an increase of 11.2% over 2022-23. It increased by 20.5% in *kharif* 2023 and declined by 10.3% in *rabi* 2023-24 over the corresponding seasons of the previous year. *Kharif:rabi* share in total consumption in terms of NPK nutrients changed from 70:30 in 2022-23 to 76:24 in 2023-24.

Overall consumption of N,  $P_2O_5$  and  $K_2O$  at 372.9, 186.6 and 42.7 thousand MT during 2023-24 registered increase of 6.7%, 22.7% and 7.2%, respectively, over 2022-23. NPK use ratio changed from 8.8:3.8:1 in 2022-23 to 8.7:4.4:1 during 2023-24. Per hectare consumption of fertilizer nutrients increased from 108.4 kg in 2022-23 to 120.5 kg in 2023-24.

##### Weather and Crop Situation

The cumulative rainfall received in the state during southwest monsoon 2023 was normal at 1115 mm. Out of 30 districts in the state, 24, 3 and 3 districts received normal, excess and deficient rains, respectively, during the season. During *kharif* 2023, sown area under pulses, coarse cereals, sugarcane, oilseeds and cotton increased by 7, 60, 1, 8 and 19 thousand ha, respectively, over *kharif* 2022. However, sown area under rice declined by 65 thousand ha.

During the post-monsoon season, state received normal rains at 120 mm. Out of 30 districts, 7, 8 and 15 districts received normal, excess to large excess and deficient to large deficient rains, respectively, during the season. During *rabi* 2023-24, sown area

under rice, pulses and oilseeds declined by 14, 62 and 24 thousand ha, respectively, compared to *rabi* 2022-23. However, sown area under coarse cereals increased by 1 thousand ha.

#### v) West Bengal

##### Fertilizer Consumption

Total fertilizer nutrient consumption in West Bengal declined by 10.6%, from 1.615 million MT during 2022-23 to 1.444 million MT during 2023-24. Total NPK consumption increased by 18.6% in *kharif* 2023 and declined by 27.7% in *rabi* 2023-24 over corresponding seasons of the previous year. Accordingly, *kharif:rabi* share in total consumption of nutrients changed from 37:63 during 2022-23 to 49:51 during 2023-24.

There had been decline in consumption of all the three nutrients during 2023-24 compared to 2022-23. Consumption of N at 0.742 million MT,  $P_2O_5$  at 0.428 million MT and  $K_2O$  at 0.274 million MT during 2023-24 witnessed decline of 12.8%, 10.6% and 3.7%, respectively, over 2022-23. NPK use ratio changed from 3.0:1.7:1 during 2022-23 to 2.7:1.6:1 during 2023-24. Per hectare use of total fertilizer nutrients reduced from 157.4 kg to 140.7 kg during the period.

##### Weather and Crop Situation

Rainfall received during southwest monsoon 2023 was normal at 2023 mm in Sub-Himalayan West Bengal sub-division. Gangetic West Bengal sub-division received deficient rains at 906 mm. Out of 19 districts in the state, 12 and 7 districts received normal and deficient rains, respectively, during the season. During *kharif* 2023, sown area under rice and pulses increased by 180 and 10 thousand ha, respectively, compared to *kharif* 2022. However, sown area under coarse cereals, sugarcane and jute & mesta declined by 13, 1 and 15 thousand ha, respectively.

During post-monsoon, the state received normal rains at 201 mm in Sub-Himalayan West Bengal sub-division and excess rains at 225 mm in Gangetic West Bengal sub-division. Out of 19 districts, 4, 10 and 5 received normal, excess to large excess and deficient rains, respectively, during the season. During *rabi* 2023-24, sown area under wheat, rice and coarse cereals increased by 14, 49 and 33 thousand ha, respectively, compared to *rabi* 2022-23. However, sown area under pulses and oilseeds declined by 7 and 55 thousand ha, respectively.

## II. NORTH ZONE

### i) Haryana

#### Fertilizer consumption

Consumption of fertilizer in terms of nutrients in Haryana increased by 5.9%, from a total of 1.357 million MT during 2022-23 to 1.437 million MT during 2023-24. Total nutrient consumption was up by 16.8%

in *kharif* 2023 but down by 4.1% in *rabi* 2023-24 compared to corresponding seasons of the previous year. Accordingly, *kharif:rabi* share in total nutrient consumption changed from 48:52 during 2022-23 to 53:47 during 2023-24.

Consumption of N at 1.113 million MT,  $P_2O_5$  at 0.299 million MT and  $K_2O$  at 25 thousand MT during 2023-24 recorded increase of 6.5%, 4% and 4.8%, respectively, over 2022-23. NPK use ratio changed from 43.5:12:1 during 2022-23 to 44.3:11.9:1 during 2023-24. Per hectare consumption of total fertilizer nutrients increased from 206.7 kg during 2022-23 to 218.9 kg during 2023-24.

### Weather and Crop Situation

Overall rainfall received during the southwest monsoon 2023 was normal at 425 mm. Out of 22 districts in the state, 14, 2 and 6 districts received normal, excess to large excess and deficient rains, respectively, during the season. During *kharif* 2023, sown area under rice and cotton increased by 129 and 16 thousand ha, respectively, compared to *kharif* 2022. However, sown area under coarse cereals, pulses, oilseeds and sugarcane declined by 40, 13, 1 and 5 thousand ha, respectively.

During post-monsoon, receipt of rains was normal at 17 mm. Out of 22 districts, 10, 4 and 8 districts received normal, excess to large excess and deficient to large deficient rains, respectively, during the season. During *rabi* 2023-24, sown area under wheat and oilseeds increased by 24 and 22 thousand ha, respectively, compared to *rabi* 2022-23. However, sown area under pulses and coarse cereals declined by 11 and 4 thousand ha, respectively.

### ii) Himachal Pradesh

#### Fertilizer Consumption

Consumption of total fertilizer nutrients in Himachal Pradesh declined by 9.5% in 2023-24 compared to the previous year. Consumption of NPK nutrients was 52.4 thousand MT during 2023-24 compared to 57.9 thousand MT in the previous year. Total consumption of fertilizer nutrients declined by 9.6% in *kharif* 2023 and 9.3% in *rabi* 2023-24 compared to the respective seasons of the previous year. *Kharif:rabi* share in total nutrient consumption changed marginally from 48:52 during 2022-23 to 47:53 during 2023-24.

Consumption of all the three nutrients showed decline. Consumption of N at 35.4 thousand MT,  $P_2O_5$  at 10 thousand MT and  $K_2O$  at 7 thousand MT during 2023-24 witnessed decline of 8.9%, 8.2% and 13.7%, respectively, over 2022-23. NPK use ratio changed from 4.8:1.3:1 during 2022-23 to 5.1:1.4:1 during 2023-24. Per hectare consumption of total fertilizer

nutrients declined to 58.9 kg in 2023-24 from 65 kg in 2022-23.

### Weather and Crop Situation

The state received 876 mm rainfall during southwest monsoon 2023 which was normal. Out of 12 districts in the state, 4, 7 and 1 districts received normal, excess to large excess and deficient rains, respectively, during the season. During *kharif* 2023, sown area under coarse cereals increased by 8 thousand ha compared to *kharif* 2022.

During post-monsoon, the state received deficient rains at 45 mm. Out of 12 districts, 2, 2 and 8 districts received normal, excess and deficient to large deficient rains, respectively, during the period. During *rabi* 2023-24, sown area under wheat and oilseeds declined by 8 and 1 thousand ha, respectively, compared to *rabi* 2022-23.

### iii) Jammu & Kashmir

#### Fertilizer Consumption

Consumption of total fertilizer nutrients in Jammu & Kashmir declined by 8.5% in 2023-24 over the previous year. It was 104.7 thousand MT during 2023-24 compared to 114.5 thousand MT in 2022-23. Total consumption of fertilizer nutrients declined by 11.3% in *kharif* 2023 and 5.4% in *rabi* 2023-24 compared to corresponding seasons of previous year. *Kharif:rabi* share in total nutrient consumption changed marginally from 53:47 during 2022-23 to 52:48 during 2023-24.

On nutrient basis, consumption of N at 74.8 thousand MT,  $P_2O_5$  at 20.4 thousand MT and  $K_2O$  at 9.5 thousand MT during 2023-24 showed decline of 9.1%, 6.8% and 7.9%, respectively, compared to 2022-23. NPK use ratio marginally changed from 8.0:2.1:1 during 2022-23 to 7.9:2.1:1 during 2023-24. Per hectare consumption of total fertilizer nutrients declined from 101 kg during 2022-23 to 92.3 kg during 2023-24.

### Weather and Crop Situation

During southwest monsoon 2023, Jammu & Kashmir and Ladakh sub-divisions received normal rains at 574 mm. Out of 20 districts in Jammu & Kashmir, 11, 3 and 4 districts received normal, excess and deficient rains, respectively, while 2 districts had no rains during the season. There are 2 districts in Ladakh which received excess rains during the period. In Jammu & Kashmir, sown area under pulses and oilseeds increased by 10 and 1 thousand ha, respectively, during *kharif* 2023 over *kharif* 2022. However, sown area under rice and coarse cereals declined by 1 and 5 thousand ha, respectively.

During post-monsoon season, Jammu & Kashmir and Ladakh sub-divisions received normal rains at 131 mm. Out of 20 districts in Jammu & Kashmir, 9, 5 and

4 districts received normal, excess to large excess and deficient to large deficient rains, respectively, while 2 had no rains during the season. Two districts of Ladakh received large deficient rains during the period. In Jammu & Kashmir, sown area under wheat, pulses and oilseeds increased by 2, 17 and 7 thousand ha, respectively, during *rabi* 2023-24 over *rabi* 2022-23.

#### iv) Punjab

##### Fertilizer Consumption

Consumption of total fertilizer nutrients in Punjab at 1.960 million MT during 2023-24 registered an increase of 3.7% over 2022-23. Consumption of total fertilizer nutrients increased in *kharif* 2023 by 20% but declined in *rabi* 2023-24 by 11.3% over the corresponding seasons of the previous year. Therefore, *kharif:rabi* share in total NPK consumption changed from 48:52 during 2022-23 to 56:44 during 2023-24.

Nutrient-wise analysis shows that consumption of N at 1.553 million MT,  $P_2O_5$  at 0.372 million MT and  $K_2O$  at 35.6 thousand MT during 2023-24 increased by 4.1%, 0.8% and 21.2%, respectively, over 2022-23. NPK use ratio improved from 50.8:12.6:1 during 2022-23 to 43.7:10.5:1 in 2023-24. There is good scope to enhance use of P&K fertilizers. Per hectare consumption of fertilizer nutrients increased from 238.8 kg during 2022-23 to 247.6 kg during 2023-24.

##### Weather and Crop Situation

The state received normal rainfall at 417 mm during southwest monsoon 2023. Out of 22 districts in the state, 9, 6 and 7 received normal, excess to large excess and deficient to large deficient rains, respectively, during the season. During *kharif* 2023, sown area under rice, coarse cereals and sugarcane increased by 32, 2 and 16 thousand ha, respectively, compared to *kharif* 2022. However, sown area under pulses, oilseeds and cotton declined by 3, 1 and 80 thousand ha, respectively.

During post-monsoon, the state received excess rains at 40 mm. Out of 22 districts, 3 and 19 districts received normal and excess to large excess rains, respectively, during the period. During *rabi* 2023-24, sown area under coarse cereals and oilseeds remained unchanged at the level of *rabi* 2022-23. However, sown area under wheat and pulses was down by 10 and 2 thousand ha, respectively.

#### v) Uttar Pradesh

##### Fertilizer Consumption

Uttar Pradesh is the largest fertilizer consuming state in the country having a share of about 17% to All-India consumption of fertilizer nutrients. Total consumption of fertilizer nutrients in the state increased from 5.256 million MT during 2022-23 to

5.340 million MT during 2023-24 and showed a growth of 1.6%. It increased in *kharif* 2023 by 7% but declined in *rabi* 2023-24 by 2.7% over the corresponding seasons of the previous year. *Kharif:rabi* share in total nutrient consumption changed marginally from 44:56 during 2022-23 to 46:54 during 2023-24.

On nutrient basis, consumption of N at 3.940 million MT,  $P_2O_5$  at 1.260 million MT and  $K_2O$  at 0.140 million MT during 2023-24 recorded increase of 0.7%, 2.9% and 17.1%, respectively, over 2022-23. NPK use ratio changed from 32.7:10.2:1 during 2022-23 to 28.1:9:1 during 2023-24. Per hectare consumption of fertilizer nutrients increased from 186.4 kg to 189.4 kg during the period.

##### Weather and Crop Situation

During the southwest monsoon 2023, the state received normal rains in West Uttar Pradesh sub-division at 694 mm. However, East Uttar Pradesh sub-division received deficient rains at 569 mm. Out of 75 districts in the state, rainfall was normal in 22, excess to large excess in 13, deficient to large deficient in 39 and 1 had no rains during the season. During *kharif* 2023, sown area under rice, coarse cereals, sugarcane and oilseeds increased by 123, 47, 391 and 52 thousand ha, respectively, compared to *kharif* 2022. However, sown area under pulses declined by 50 thousand ha.

During post-monsoon, state received normal rains in East Uttar Pradesh and deficient rains in West Uttar Pradesh sub-divisions at 48 and 19 mm, respectively. Out of 75 districts, 11, 13 and 50 districts received normal, excess to large excess and deficient to large deficient rains, respectively, while 1 district had no rains during the season. During *rabi* 2023-24, sown area under wheat, pulses and oilseeds increased by 494, 21 and 436 thousand ha, respectively, compared to *rabi* 2022-23. However, sown area under coarse cereals declined by 26 thousand ha.

#### vi) Uttarakhand

##### Fertilizer Consumption

Total consumption of fertilizer nutrients at 146.4 thousand MT during 2023-24 increased by 6.1% over 2022-23 and it increased in both the seasons. It increased by 10% in *kharif* 2023 and by 2.1% in *rabi* 2023- over the corresponding seasons of the previous year. *Kharif:rabi* share in total nutrient consumption changed from 50:50 during 2022-23 to 52:48 during 2023-24.

On nutrient basis, consumption of N at 115.6 thousand MT and  $K_2O$  at 5.5 thousand MT during 2023-24 registered increase of 10% and 45%, respectively, over 2022-23. However, consumption of  $P_2O_5$  at 25.3 thousand MT witnessed a decline of 13.3%. NPK use ratio changed from 27.9:7.8:1 during 2022-23 to

21.2:4.6:1 during 2023-24. Per hectare consumption of total fertilizer nutrients increased from 142.4 kg to 151 kg during the period.

### Weather and Crop Situation

The state received normal rains at 1211 mm during the southwest monsoon 2023. Out of 13 districts in the state, 4, 6 and 3 districts received normal, excess to large excess and deficient rains, respectively, during the season. During *kharif* 2023, sown area under coarse cereals and oilseeds increased by 2 and 1 thousand ha, respectively, compared to *kharif* 2022. However, sown area under rice and sugarcane declined by 3 and 2 thousand ha, respectively.

During the post-monsoon, the state received 27 mm rains which was deficient. All the 13 districts received deficient to large deficient rains during the period. During *rabi* 2023-24, sown area under wheat and oilseeds declined by 1 and 3 thousand ha, respectively, compared to *rabi* 2022-23. However, sown area under pulses and coarse cereals during *rabi* 2023-24 remained unchanged at the level of *rabi* 2022-23.

## III. SOUTH ZONE

### i) Andhra Pradesh

#### Fertilizer Consumption

Consumption of total fertilizer nutrients in Andhra Pradesh witnessed a decline of 2.7%, from 1.769 million MT during 2022-23 to 1.722 million MT during 2023-24. During *kharif* 2023, it increased by 5.2% but declined in *rabi* 2023-24 by 7.9% over the corresponding seasons of the previous year. Accordingly, *kharif:rabi* share in total nutrient consumption changed from 40:60 during 2022-23 to 43:57 during 2023-24.

During 2023-24, consumption of N at 1.032 million MT and  $P_2O_5$  at 0.534 million MT registered decline of 3.7% and 2.8%, respectively, compared to 2022-23. However, consumption of  $K_2O$  at 0.156 million MT registered an increase of 5.2%. NPK use ratio changed from 7.2:3.7:1 during 2022-23 to 6.6:3.4:1 during 2023-24. Per hectare consumption of total nutrients declined to 235 kg during 2023-24 from 241.4 kg during 2022-23.

#### Weather and Crop Situation

Rainfall during southwest monsoon 2023 was normal in both the sub-divisions *viz.*, Coastal Andhra Pradesh at 584 mm and Rayalaseema at 357 mm. Out of 26 districts in the state, 18, 1 and 7 districts received normal, excess and deficient rains, respectively, during the season. During *kharif* 2023, sown area under rice, pulses, coarse cereals, oilseeds, sugarcane, cotton and jute & mesta declined by 91, 55, 4, 261, 10, 249 and 1 thousand ha, respectively, compared to *kharif* 2022.

During post-monsoon, rainfall was normal at 261 mm

in Coastal Andhra Pradesh sub-division and deficient at 165 mm in Rayalaseema sub-division. Out of 26 districts, 9, 3 and 14 districts received normal, excess and deficient to large deficient rains, respectively, during the period. During *rabi* 2023-24, sown area under rice, pulses, coarse cereal and oilseeds declined by 55, 99, 37 and 8 thousand ha, respectively, compared to *rabi* 2022-23.

### ii) Karnataka

#### Fertilizer Consumption

Total fertilizer nutrient consumption in the state registered a decline of 5.5%, from 2.059 million MT during 2022-23 to 1.945 million MT during 2023-24. On seasonal basis, it increased by 14.4% in *kharif* 2023 but declined considerably by 36.7% in *rabi* 2023-24 over the corresponding seasons of the previous year. Accordingly, *kharif:rabi* share in total nutrient consumption changed from 61:39 during 2022-23 to 74:26 during 2023-24.

On nutrient basis, consumption of N at 1.109 million MT and  $P_2O_5$  at 0.618 million MT during 2023-24 registered decline of 10.6% and 1%, respectively, compared to 2022-23. However, consumption of  $K_2O$  at 0.218 million MT recorded an increase of 12.6%. NPK use ratio changed from 6.4:3.2:1 during 2022-23 to 5.1:2.8:1 during 2023-24. Per hectare consumption of total fertilizer nutrients reduced from 139.6 kg to 131.9 kg during the period.

#### Weather and Crop Situation

During southwest monsoon 2023, rainfall was normal in Coastal Karnataka and North Interior Karnataka sub-divisions at 2708 mm and 431 mm, respectively. However, rainfall was deficient in South Interior Karnataka sub-division at 492 mm. Out of 31 districts in the state, 19 and 12 districts received normal and deficient rains, respectively, during the season. Sown area under rice, pulses, oilseeds, sugarcane and cotton declined by 149, 298, 208, 4 and 128 thousand ha, respectively, during *kharif* 2023 compared to sown area of *kharif* 2022. However, sown area under coarse cereals increased by 82 thousand ha.

During post-monsoon, Coastal Karnataka sub-division received normal rainfall of 232 mm. However, it was deficient in South Interior Karnataka and large deficient in North Interior Karnataka sub-divisions at 147 mm and 46 mm, respectively. Out of 31 districts, 7, 1 and 23 districts received normal, excess and deficient to large deficient rains, respectively, during the period. During *rabi* 2023-24, sown area under wheat, rice, pulses, coarse cereals and oilseeds declined by 23, 3, 238, 79 and 105 thousand ha, respectively, compared to sown area of *rabi* 2022-23.

**(iii) Kerala****Fertilizer Consumption**

Total fertilizer nutrient consumption at 152 thousand MT during 2023-24 in the state registered a decline of 1.6% compared to previous year. During *kharif 2023*, total nutrient consumption increased by 1.1% but in *rabi 2023-24*, it decreased by 4.5% compared to the respective seasons of the previous year. *Kharif:rabi* share in total nutrient consumption changed marginally from 51:49 during 2022-23 to 52:48 during 2023-24.

On nutrient basis, consumption of N at 69.6 thousand MT and  $K_2O$  at 51.1 thousand MT during 2023-24 witnessed decline of 5.8% and 0.8%, respectively, compared to previous year. However, consumption of  $P_2O_5$  at 31.3 thousand MT registered an increase of 7.4%. NPK use ratio remained unchanged at the previous year's level of 1.4:0.6:1 during 2023-24. Per hectare consumption of total fertilizer nutrients declined marginally from 61.2 kg in 2022-23 to 60.2 kg in 2023-24.

**Weather and Crop Situation**

The state received deficient rains during southwest monsoon 2023 at 1327 mm. Out of 14 districts in the state, 4 and 10 districts received normal and deficient rains, respectively, during the season. During *kharif 2023*, sown area under rice was higher by 2 thousand ha compared to *kharif 2022*.

During post-monsoon, state received excess rains at 625 mm. Out of 14 districts, 8 and 6 districts received normal and excess to large excess rains, respectively, during the season. During *rabi 2023-24*, area sown under rice and pulses was lower by 3 and 1 thousand ha, respectively, compared to *rabi 2022-23*.

**iv) Tamil Nadu****Fertilizer Consumption**

Total nutrient consumption increased from 1.047 million MT during 2022-23 to 1.068 million MT during 2023-24 *i.e.* by 2.1%. During *kharif 2023*, total fertilizer nutrient consumption increased by 6.9% whereas it declined by 1.5% during *rabi 2023-24* over the corresponding seasons of the previous year. *Kharif:rabi* share in total nutrient consumption changed from 43:57 during 2022-23 to 45:55 during 2023-24.

Consumption of N at 0.665 million MT,  $P_2O_5$  at 0.281 million MT and  $K_2O$  at 0.122 million MT during 2023-24 registered increase of 2%, 2.5% and 1.7%, respectively, over 2022-23. NPK use ratio remained unchanged at the previous year's level of 5.4:2.3:1 during 2023-24. Per hectare consumption of total fertilizer nutrients increased from 164.9 kg in 2022-23 to 168.3 kg in 2023-24.

**Weather and Crop Situation**

During southwest monsoon 2023, the state received

normal rains at 354 mm. Out of 38 districts in the state, 21, 11 and 6 districts received normal, excess to large excess and deficient rains, respectively, during the season. Despite normal rains in the state, except sugarcane, sown area under rice, pulses, coarse cereals, oilseeds and cotton declined by 74, 22, 46, 34 and 16 thousand ha, respectively, during *kharif 2023* compared to sown area of *kharif 2022*. However, sown area under sugarcane increased by 8 thousand ha during the season.

During post-monsoon, the state received normal rains at 459 mm. Out of 38 districts, 11, 12 and 15 districts received normal, excess to large excess and deficient rains, respectively, during the season. During *rabi 2023-24*, sown area under coarse cereals and oilseeds increased by 25 and 2 thousand ha, respectively, compared to *rabi 2022-23*. However, sown area under rice and pulses was down by 4 and 35 thousand ha, respectively.

**v) Telangana****Fertilizer Consumption**

Total fertilizer nutrients consumption in Telangana showed a positive growth of 3.1% during 2023-24 over 2022-23. Total fertilizer nutrient consumption increased from 1.713 million MT during 2022-23 to 1.766 million MT during 2023-24. It increased by 14.3% in *kharif 2023* but declined by 9.1% in *rabi 2023-24* over the corresponding seasons of the previous year. Therefore, *kharif:rabi* share in total nutrient consumption changed from 52:48 during 2022-23 to 58:42 during 2023-24.

Consumption of N at 1.216 million MT,  $P_2O_5$  at 0.467 million MT and  $K_2O$  at 82.9 thousand MT during 2023-24 recorded increase of 2%, 3.5% and 19.4%, respectively, over 2022-23. NPK use ratio changed from 17.2:6.5:1 during 2022-23 to 14.7:5.6:1 during 2023-24. Per hectare consumption of total fertilizer nutrients increased from 213.4 kg to 220 kg during the period.

**Weather and Crop Situation**

The state received normal rains at 847 mm during southwest monsoon 2023. Out of 33 districts in the state, 17, 15 and 1 district received normal, excess to large excess and deficient rains, respectively, during the season. During *kharif 2023*, sown area under rice and oilseeds increased by 22 and 10 thousand ha, respectively, compared to *kharif 2022*. However, sown area under pulses, coarse cereals, oilseeds and cotton declined by 42, 33, 8 and 211 thousand ha, respectively.

Rainfall received during post-monsoon was deficient at 53 mm. Out of 33 districts, only 2 districts received normal, 1 received excess and remaining 30 received deficient to large deficient rains during the season. During *rabi 2023-24*, sown area under coarse cereals increased by 12 thousand ha compared to *rabi 2022-*

23. However, sown area under rice, pulses and oilseeds declined by 66, 43 and 17 thousand ha, respectively.

#### IV. WEST ZONE

##### i) Gujarat

##### Fertilizer Consumption

Consumption of total fertilizer nutrients in the state increased by 3.8%, from 1.811 million MT during 2022-23 to 1.880 million MT during 2023-24. It increased by 17% in *kharif 2023* but declined by 7.3% in *rabi 2023-24* compared to corresponding seasons of the previous year. *Kharif:rabi* share in total nutrient consumption changed from 46:54 during 2022-23 to 51:49 during 2023-24.

On nutrient basis, consumption of N at 1.355 million MT,  $P_2O_5$  at 0.441 million MT and  $K_2O$  at 83.7 thousand MT during 2023-24 recorded increase of 1.1%, 11.6% and 12.6%, respectively, over 2022-23. NPK use ratio changed from 18.1:5.3:1 during 2022-23 to 16.2:5.3:1 during 2023-24. Per hectare consumption of total fertilizer nutrients increased from 122.7 kg in 2022-23 to 127.4 kg in 2023-24.

##### Weather and Crop Situation

During southwest monsoon 2023, rainfall was normal in Gujarat region and excess in Saurashtra & Kutch sub-divisions. Rainfall received in Gujarat region was 908 mm and it was 796 mm in Saurashtra & Kutch sub-divisions during the season. Out of 33 districts in the state, 22, 8 and 3 districts received normal, excess to large excess and deficient rains, respectively, during the season. During *kharif 2023*, sown area under rice, coarse cereals and cotton increased by 4, 9 and 133 thousand ha, respectively, compared to *kharif 2022*. However, sown area under pulses, sugarcane and oilseeds declined by 45, 40 and 20 thousand ha, respectively.

During post-monsoon season, rainfall was normal in Gujarat region and deficient in Saurashtra & Kutch sub-divisions. Gujarat region received 38 mm rains and Saurashtra & Kutch sub-divisions received only 16 mm rains during the season. Out of 33 districts, 7, 11 and 14 districts received normal, excess to large excess and deficient to large deficient rains, respectively, while 1 had no rains during the season. During *rabi 2023-24*, sown area under coarse cereals increased by 26 thousand ha compared to *rabi 2022-23*. However, sown area under wheat, pulses and oilseeds reduced by 47, 130 and 29 thousand ha, respectively.

##### ii) Madhya Pradesh

##### Fertilizer Consumption

Madhya Pradesh is the second largest fertilizer consuming state in the country having a share of about 10% to All-India consumption of fertilizer nutrients.

Total fertilizer nutrient consumption in the state at 3.054 million MT during 2023-24 recorded an increase of 8.9% over 2022-23. Consumption of fertilizer nutrients during *kharif 2023* rose by 14.8% and in *rabi 2023-24* by 3.8% over the corresponding seasons of the previous year. *Kharif:rabi* share in total nutrient consumption changed from 46:54 during 2022-23 to 49:51 during 2023-24.

Consumption of N at 1.945 million MT,  $P_2O_5$  at 1.022 million MT and  $K_2O$  at 86.4 thousand MT during 2023-24 recorded increase of 7%, 12% and 15.8%, respectively, over 2022-23. NPK use ratio changed from 24.4:12.2:1 during 2022-23 to 22.5:11.8:1 during 2023-24. Per hectare consumption of total fertilizer nutrients increased from 93.3 kg in 2022-23 to 101.6 kg in 2023-24.

##### Weather and Crop Situation

During southwest monsoon 2023, rainfall was normal in both the sub-divisions, *viz.*, West Madhya Pradesh at 907 mm and East Madhya Pradesh at 999 mm. Out of 52 districts in the state, 35, 11 and 6 districts received normal, excess and deficient rains, respectively, during the season. During *kharif 2023*, sown area under coarse cereals, pulses, sugarcane, oilseeds and cotton increased by 168, 65, 29, 17 and 25 thousand ha, respectively, compared to *kharif 2022*. However, sown area under rice declined by 177 thousand ha.

During the post-monsoon, rainfall was also normal in both the sub-divisions, *viz.*, West Madhya Pradesh at 42 mm and East Madhya Pradesh at 51 mm. Out of 52 districts, 12, 14 and 26 districts received normal, excess to large excess and deficient to large deficient rains, respectively, during the season. During *rabi 2023-24*, sown area under wheat, pulses and oilseeds increased by 80, 370 and 12 thousand ha, respectively, compared to *rabi 2022-23*. However, sown area under coarse cereals declined by 3 thousand ha.

##### iii) Chhattisgarh

##### Fertilizer Consumption

Consumption of total fertilizer nutrients recorded an increase of 16.2%, from a total of 0.710 million MT during 2022-23 to 0.826 million MT during 2023-24. It increased in *kharif 2023* by 17.9% and in *rabi 2023-24* by 11.2% over the corresponding seasons of the previous year. *Kharif:rabi* share in total nutrient consumption changed marginally from 75:25 during 2022-23 to 76:24 during 2023-24.

Consumption of N at 0.518 million MT,  $P_2O_5$  at 0.267 million MT and  $K_2O$  at 40.2 thousand MT during 2023-24 recorded increase of 11.6%, 26.5% and 16.2%, respectively, over 2022-23. NPK use ratio changed from 13.4:6.1:1 during 2022-23 to 12.9:6.7:1 during 2023-24. Per hectare consumption of fertilizer



nutrients increased from 124.5 kg to 144.7 kg during the period.

#### Weather and Crop Situation

Cumulative rainfall received in the state was normal at 1061 mm during southwest monsoon 2023. Out of 27 districts in the state, 16, 6 and 5 districts received normal, excess and deficient rains, respectively, during the season. During *kharif* 2023, sown area under rice, coarse cereals, pulses and oilseeds increased by 123, 65, 22 and 11 thousand ha, respectively, compared to *kharif* 2022. However, sown area under sugarcane declined by 1 thousand ha.

During post-monsoon, the state received normal rains at 63 mm. Out of 27 districts, 9, 2 and 16 districts received normal, large excess and deficient to large deficient rains, respectively, during the season. During *rabi* 2023-24, sown area under wheat, pulses and oilseeds increased by 27, 36 and 34 thousand ha, respectively, compared to *rabi* 2022-23. However, sown area under rice and coarse cereals reduced by 24 and 30 thousand ha, respectively.

#### iv) Maharashtra

##### Fertilizer Consumption

Maharashtra is the third largest fertilizer consuming state in the country having a share of 9.5% to All-India consumption of fertilizer nutrients. Consumption of total fertilizer nutrients increased from 2.823 million MT during 2022-23 to 2.919 million MT during 2023-24, representing a growth of 3.4%. It increased in *kharif* 2023 by 24% but declined in *rabi* 2023-24 by 24% compared to the respective seasons of the previous year. Therefore, *kharif:rabi* share in total nutrient consumption changed from 57:43 during 2022-23 to 68:32 during 2023-24.

Consumption of  $P_2O_5$  at 0.987 million MT and  $K_2O$  at 0.356 million MT recorded increase of 6.1% and 20.2%, respectively, during 2023-24 over 2022-23. However, consumption of N at 1.576 million MT registered a decline of 1.3% during the period. NPK use ratio improved from 5.4:3.1:1 during 2022-23 to 4.4:2.8:1 during 2023-24. Per hectare consumption of fertilizer nutrients increased from 109.7 kg to 113.4 kg during the period.

##### Weather and Crop Situation

During southwest monsoon 2023, Madhya Maharashtra, Vidarbha and Marathawada sub-divisions received normal rains at 656 mm, 921 mm and 573 mm, respectively, during the season. Out of total 36 districts in the state, 23, 4 and 9 districts received normal, excess and deficient rains, respectively, during the season. During *kharif* 2023, sown area under oilseeds, cotton and sugarcane increased by 131, 5 and 91 thousand ha, respectively, compared to *kharif* 2022. However, sown area under

rice, coarse cereals and pulses declined by 23.32 and 266 thousand ha, respectively.

During post-monsoon, rainfall was deficient in all the three sub-divisions. Rainfall received in Madhya Maharashtra, Vidarbha and Marathawada sub-divisions was 56 mm, 51 mm and 58 mm, respectively, during the season. Out of total 36 districts, 7, 3 and 26 districts received normal, excess and deficient to large deficient rains, respectively, during the season. During *rabi* 2023-24, sown area under wheat, pulses and oilseeds declined by 120, 321 and 2 thousand ha, respectively, compared to *rabi* 2022-23. However, sown area under coarse cereals increased by 249 thousand ha.

#### v) Rajasthan

##### Fertilizer Consumption

The consumption of total fertilizer nutrients at 1.902 million MT during 2023-24, recorded an increase of 4.2% over the previous year. Consumption of total fertilizer nutrients in *kharif* 2023 increased by 17.6% but declined in *rabi* 2023-24 by 8.4% compared to corresponding seasons of the previous year. Accordingly, *kharif:rabi* share in total fertilizer nutrient consumption changed from 48:52 during 2022-23 to 55:45 during 2023-24.

On nutrient basis, consumption of N at 1.355 million MT,  $P_2O_5$  at 0.533 million MT and  $K_2O$  at 14.2 thousand MT during 2023-24 recorded increase of 2.6%, 8% and 12.6% respectively, over 2022-23. NPK use ratio changed from 104.9:39.2:1 during 2022-23 to 95.6:37.6:1 during 2023-24. Per hectare consumption of total fertilizer nutrients increased from 66.5 kg in 2022-23 to 69.3 kg in 2023-24.

##### Weather and Crop Situation

During southwest monsoon 2023, rainfall was normal in East Rajasthan sub-division at 623 mm and excess in West Rajasthan sub-division at 402 mm. Out of total 33 districts in the state, 17, 11 and 5 districts received normal, excess to large excess and deficient rains, respectively, during the season. During *kharif* 2023, sown area under rice, pulses and cotton increased by 10, 131 and 108 thousand ha, respectively, compared to *kharif* 2022. However, sown area under coarse cereals was down by 17 thousand ha.

During the post-monsoon, rainfall was large excess in West Rajasthan sub-division at 22 mm while normal in East Rajasthan sub-division at 24 mm during the season. Out of 33 districts, 11, 10 and 12 districts received normal, excess to large excess and deficient to large deficient rains, respectively, during the season. During *rabi* 2023-24, sown area under coarse cereals increased by 51 thousand ha compared to *rabi* 2022-23. However, sown area under wheat, pulses and oilseeds declined by 147, 194 and 200 thousand ha, respectively.

## 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.

In India, nitrogenous and phosphatic fertilizers are indigenously produced. The gap between total requirement and indigenous production is fulfilled through imports of these fertilizers. The country is deficient in the production of both N and  $P_2O_5$  compared to consumption. During 2023-24, total consumption and production of nitrogen increased by 0.250 and 1.370 million MT, respectively, over the previous year. Higher increase in production compared to consumption, narrowed the deficit from 4.469 million MT in 2022-23 to 3.349 million MT in 2023-24.

In case of  $P_2O_5$ , while consumption increased by 385 thousand MT, production declined by 132 thousand MT, during 2023-24 over 2022-23. Consequently, deficit increased from 2.912 million MT in 2022-23 to 3.428 million MT in 2023-24 due to increase in consumption compared to decrease in production. Zone-wise consumption, production and surplus/deficit of N and  $P_2O_5$  for 2022-23 and 2023-24 are presented in **Table 17**.

### 7.2 East Zone

Production of N falls short of consumption in the East zone. During 2022-23, two new ammonia-urea plants at Barauni (Bihar) and Sindri (Jharkhand) were commissioned at the mid of the year. With this, there are 5 urea plants in East zone. But one plant of Namrup could not operate during 2022-23 and 2023-24 due to equipment failures in ammonia synthesis section. However, production of N increased by 1.069 million MT during 2023-24 over 2022-23. As against this, consumption of N increased by 23 thousand MT during the period. Consequently, the deficit in N reduced from 1.262 million MT in 2022-23 to 0.216 million MT in 2023-24.

East zone has 3 large sized DAP/complex fertilizer plants and 8 SSP plants. The zone continued to remain surplus in  $P_2O_5$  production during 2023-24. The surplus of  $P_2O_5$  in the east zone increased from 412 thousand MT in 2022-23 to 455 thousand MT in 2023-24 due to proportionately higher increase in production compared to consumption.

### 7.3 North Zone

North zone is deficient in both N and  $P_2O_5$ . During 2022-23, a new ammonia-urea plant at Gorakhpur (Uttar Pradesh) commenced commercial production

of urea. In spite of large number of nitrogen producing plants in the zone, there are high fertilizer consuming states such as, Uttar Pradesh, Punjab and Haryana in the zone. The deficit of N declined from 1.719 million MT during 2022-23 to 1.669 million MT during 2023-24. The reduction in deficit was on account of more increase in production compared to consumption.

Production of  $P_2O_5$  in the north zone is low and it is only through SSP as there is no DAP/ NP/NPK plant in the zone. There are 7 SSP operating plants in the north zone. During 2023-24, the deficit in  $P_2O_5$  increased to 1.948 million MT from 1.887 million MT during 2022-23. The rise in deficit was due to increase in consumption against reduction 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 plants in the zone. Nevertheless, the zone is deficient in both N and  $P_2O_5$ . During 2023-24, the deficit in N declined to 1.306 million MT from 1.592 million MT in 2022-23 due to higher increase in production

**Table 17. Zone-wise consumption, production and surplus/deficit of N and  $P_2O_5$  - 2022-23 and 2023-24 (April/March)**

Zone	('000 MT)			
	N		$P_2O_5$	
	2022-23	2023-24	2022-23	2023-24
<b>East</b>				
1. Consumption	2735	2758	1103	1134
2. Production	1473	2542	1515	1589
3. Surplus(+)/ Deficit (-)	-1262	-216	412	455
<b>North</b>				
1. Consumption	6690	6848	1945	1988
2. Production	4971	5179	58	40
3. Surplus(+)/ Deficit (-)	-1719	-1669	-1887	-1948
<b>South</b>				
1. Consumption	4240	4099	1930	1933
2. Production	2648	2793	1255	1319
3. Surplus(+)/ Deficit (-)	-1592	-1306	-675	-614
<b>West</b>				
1. Consumption	6542	6751	2944	3251
2. Production	6646	6594	2180	1930
3. Surplus(+)/ Deficit (-)	105	-157	-764	-1322
<b>All-India</b>				
1. Consumption	20206	20456	7922	8307
2. Production	15738	17108	5010	4878
3. Surplus(+)/ Deficit (-)	-4469	-3349	-2912	-3428

Note :

- (1) Consumption figures for 2023-24 are provisional.
- (2) Entire requirement of  $K_2O$  is met through imports.
- (3) All-India totals may not exactly tally due to rounding of figures.

Crop/Season	(Million MT)					
	2021-22		2022-23		2023-24	
	Target	Final Estimate	Target	Final Estimate	Target	3 <sup>rd</sup> Advance Estimate
1. Rice	121.1	129.5	130.5	135.8	134.0	136.7
2. Wheat	110.0	107.7	112.0	110.6	114.0	112.9
3. Coarse cereals	51.2	51.1	56.0	57.3	52.6	54.7
4. Total pulses	25.0	27.3	29.6	26.1	29.3	24.5
<b>Total Foodgrains</b>	<b>307.3</b>	<b>315.6</b>	<b>328.0</b>	<b>329.7</b>	<b>332.1</b>	<b>328.9</b>
(i) Kharif	151.4	155.4	163.2	155.7	158.1	156.7
(ii) Rabi	155.9	160.3	164.9	157.8	161.2	157.7
5. Sugarcane	397.0	439.4	415.0	490.5	470.0	442.5
6. Oilseeds	38.4	38.0	41.3	41.4	44.0	39.6
- Out of which						
(i) Groundnut	9.9	10.1	10.4	10.3	11.1	10.3
(ii) Soyabean	14.8	13.0	14.8	15.0	15.8	13.1
(iii) Rapeseed & Mustard	10.2	12.0	12.1	12.6	13.1	13.2
7. Cotton @	37.0	31.1	37.0	33.7	35.0	32.5
8. Jute & Mesta \$	10.6	10.1	10.5	9.4	10.5	9.7

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

against reduction in consumption.

Similarly, the deficit in P<sub>2</sub>O<sub>5</sub> also declined from 0.675 million MT during 2022-23 to 0.614 million MT during 2023-24 due to proportionately higher increase in production compared to consumption.

### 7.5 West Zone

The west zone is deficit both in N and P<sub>2</sub>O<sub>5</sub>. 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 70 SSP and 4 ammonium sulphate plants. Share of west zone in all India production of N and P<sub>2</sub>O<sub>5</sub> was 38.5% and 39.6%, respectively, during 2023-24. N was surplus in 2022-23 which turned to deficient in 2023-24 from a surplus of 105 thousand MT to a deficit of 157 thousand MT during the period. This was due to increase in consumption against reduction in production.

In case of P<sub>2</sub>O<sub>5</sub>, the deficit increased from 0.764 million MT in 2022-23 to 1.322 million MT during 2023-24 due to increase in consumption against reduction in production.

Thus in nitrogen, none of the zones were surplus whereas in phosphate, only east zone was surplus during 2023-24.

### 8.0 PRODUCTION OF FOODGRAINS AND COMMERCIAL CROPS

As per the 3<sup>rd</sup> Advance Estimates of crop production for 2023-24, total production of food grains is estimated to be 328.9 million MT compared to 329.7 million MT in 2022-23. Among food grain crops, production of rice and wheat is expected to increase by 0.7% and 2.1%, respectively, during 2023-24 over 2022-23. However, production of pulses and coarse cereals are estimated to decline by 6.0% and 4.5%, respectively, during the period. Similarly, production of oilseeds, sugarcane and cotton are expected to decline by 4.3%, 9.8% and 3.4%, respectively, during the period. However, production of jute & mesta is estimated to increase by 3.4% (Table 18).

### 9. AGRICULTURAL DEVELOPMENT PROGRAMMES

Agriculture plays a vital role in India's economy and quite a large workforce is engaged in agriculture and allied sector activities. It accounts for 18.4% of India's GVA at current prices during 2022-23. Given the importance of the agriculture sector, Government of India has been undertaking several steps for its development on a sustainable manner.

Type of seeds	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
Breeder seed production	8.23	8.62	9.04	11.07	10.51	10.43	9.27	9.12	9.35	8.92	7.63*
Foundation seed	174.31	157.62	149.54	220.91	195.42	180.10	222.50	241.21	213.97	235.81	182.93
Certified / quality seed production / availability	3473.13	3517.66	3435.25	3802.90	4194.11	3988.77	4310.10	4836.63	4988.29	5142.58	5086.02
* = Target											
Source : Annual Report 2023-24, Department of Agriculture & Farmers Welfare, Ministry of Agriculture & Farmers Welfare, Government of India.											

### 9.1 Seed Production

Seed is the basic and critical input for agricultural production. The Indian seeds programme recognizes three generations of seeds, namely breeder, foundation and certified seeds. The details of production of breeder, foundation and certified seeds from 2013-14 to 2023-24 are shown in **Table 19**.

### 9.2 National Mission for Sustainable Agriculture

National Mission on Sustainable Agriculture (NMSA) is one of the Missions launched under the National Action Plan on Climate Change (NAPCC) in 2008. The Mission aims to evolve and implement strategies to make Indian agriculture resilient to climate change. NMSA was approved for three major components *i.e.* Rainfed Area Development (RAD); On Farm Water Management (OFWM); and Soil Health Management (SHM). Subsequently, four new programmes were introduced under the ambit of NMSA namely Soil Health Card (SHC), Paramparagat Krishi Vikas Yojana (PKVY), Mission Organic Value Chain Development in North Eastern Region (MOVCDNER). During 2015-16, Pradhan Mantri Krishi Sinchayee Yojana (PMKSY) was operationalised wherein the OFWM component of NMSA was subsumed under the Per Drop More Crop (PDMC) component of PMKSY. In addition to the aforementioned programmes under NMSA, the Restructured National Bamboo Mission (NBM) was launched in April 2018.

The NMSA strategy document was revised for the period 2018 to 2030 and has adopted an integrated holistic approach focussing more on vulnerable regions, deploying the best bet technologies and practices for adaptation and mitigation and empowering farmers through capacity building and financial support. Implementation strategies are designed with a time frame up to 2030. Eleven key priority areas have been identified for programmatic interventions which can minimize the impact of climate change and reduce risk. Each

of these priority areas has to be analysed in the context of four functional areas, *viz.*, Research and Development, Technology Adoption, Infrastructure and Capacity Building measures. From 2022-23, various programmes/schemes of NMSA have been subsumed under Rashtriya Krishi Vikas Yojana (RKVY) as RKVY-Annual Action Plan based programme.

### 9.3 Soil Health & Fertility of RKVY Scheme

Soil Health Management was one of the most important interventions for Sustainable Agriculture. During 15<sup>th</sup> finance commission period, Soil Health & Fertility has implemented to promote the Integrated Nutrient Management through judicious use of chemical fertilizers including secondary and micronutrients in conjunction with organic manures and bio-fertilizers for improving soil health and its productivity as component of RKVY Cafeteria Scheme. The strengthening of soil and fertilizer testing facilities is to provide soil test based recommendations to farmers for improving soil fertility, up-gradation of skill and knowledge of farmers through training & demonstrations, etc.

The Soil Health & Fertility includes setting up of new static Soil Testing Laboratories (STLs), setting up of new Mobile STLs, setting up of Village Level STLs/Mini STLs, strengthening of existing Static/Mobile STLs, setting up of new Fertilizer Quality Control Laboratory (FQCL), strengthening of FQCL, setting up of Bio-fertilizer & Organic Fertilizer Quality Control Laboratories (BOQCL), strengthening of BOQCL, promoting Micro-nutrients, training & Demonstrations, Reclamation of problem soils, NABL Accreditation and New Initiatives and testing soil samples to issue Soil Health Cards. Soil samples should be processed as per standard procedures and analyzed for 12 parameters *viz.* pH, electrical conductivity, organic carbon, available N, P, K, S and micronutrients (Zn, Cu, Fe, Mn & B). Soil health card provides information to farmers on soil nutrient status of

their soil and recommendation on appropriate dosage of nutrients to be applied for improving soil health and its fertility.

Under the Soil Health & Fertility in RKVY Cafeteria Scheme, the fund of Rs.52.62 crore was released to the States for implementation in the year 2022-23. The fund of Rs.72.85 crore has also been released to the States for implementation in the financial year 2023-24 (upto 17<sup>th</sup> January, 2024).

#### 9.4 Rainfed Area Development

Rainfed Area Development (RAD) Scheme was made operational from 2014-15 in the country as a component of NMSA. RAD aims at promoting sustainable agriculture production through adaptation of agricultural climatic zone-wise Integrated Farming System (IFS) models developed by Indian Council of Agriculture research (ICAR). RAD aims at promoting IFS with emphasis on multi-cropping, rotational cropping, inter-cropping, mixed-cropping practices with allied activities like horticulture, livestock, fishery, apiculture, etc. to enable farmers not only in maximizing the farm returns for sustaining livelihood, but also to mitigate the impacts of drought, flood or other extreme weather events. RAD component is implemented under the umbrella scheme of RKVY from the year 2022-23 onward.

The various activities supported under RAD component includes IFS - cropping systems, fishery, apiculture, silage making for increased availability of green fodder round the year, vermi compost units/organic input production units, green manuring, etc. Since its inception of 2014-15 and upto 2022-23, 7.12 lakh ha rainfed area has been brought under IFS in RAD programme with an expenditure of Rs. 1619.73 crore. During 2023-24, an amount of Rs.80.71 crore has been released upto 31<sup>st</sup> December, 2023 to the States for implementation of the programme.

#### 9.5 Drought Management

Spatial distribution and quantum of rainfall during southwest Monsoon – SWM (June-September) mainly determines the incidence of drought in the country as SWM accounts for more than 70% of annual rainfall. DoA&FW closely monitors progress of SWM in the country, in coordination with India Meteorological Department (IMD), Ministry of Earth Sciences, and keeps a watch over deficient/large deficient rainfall conditions.

The State Governments initiate necessary relief measures in the wake of natural calamities from the State Disaster Response Fund (SDRF), which

is readily available with them. Contribution to SDRF is made by the Central and the State Governments in the ratio of 3:1 for 18 General Category States namely, Andhra Pradesh, Bihar, Chhattisgarh, Goa, Gujarat, Haryana, Jharkhand, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Odisha, Punjab, Rajasthan, Tamil Nadu, Telangana, Uttar Pradesh and West Bengal and in the ratio of 9:1 for 10 Special Category States namely, North Eastern States of Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim and Tripura and hilly States of Himachal Pradesh and Uttarakhand. The Government of India supplements the efforts of the State Governments by providing requisite financial and logistic support in the wake of natural calamities. Additional financial assistance over and above SDRF is considered from the National Disaster Response Fund (NDRF) for natural calamities of severe nature, as per the established procedure and extant items and norms for assistance from SDRF/NDRF.

During 2023-24, the State Governments of Karnataka, Andhra Pradesh and Maharashtra have submitted Memorandums seeking financial assistance from NDRF for drought in the States during *kharif* 2023.

ICAR - Central Research Institute for Dryland Agriculture (CRIDA) has developed detailed district-wise contingency plans to provide a broad advisory to farmers. These contingency plans prescribe alternate strategies in the event of climate variability by factoring in crops/livestock/aquaculture practices/pattern, soil characteristics, infrastructural facilities, etc. These plans have been developed based on certain simulated models for different weather conditions like occurrence of flood, drought, cyclone, cold wave/frost, etc. CRIDA has prepared contingency plans for 650 districts of the country.

#### 9.6 Micro Irrigation Fund

Micro Irrigation Fund (MIF) with corpus of Rs. 5000 crore have been created with National Bank for Agriculture and Rural Development (NABARD). The objective of the MIF is to facilitate the States in mobilising resources for expanding coverage of micro-irrigation. The States may access MIF for taking up special and innovative projects for expanding coverage of micro-irrigation and also for incentivising micro-irrigation beyond the provisions available under PDMC scheme to encourage farmers. Projects of Rs 4724.74 crore have been approved to the States and so far Rs. 2812.24 crore has been disbursed to the States of Andhra Pradesh, Haryana, Gujarat, Punjab, Rajasthan and Tamil Nadu on

reimbursement basis. A budget announcement has been made by the Government during the year 2021-22 to double the initial corpus of MIF by augmenting another Rs. 5,000 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 total outlay for developmental programmes in all the States except States in North East and Himalayas, 40% share is contributed by State Governments. In the case of North Eastern and Himalayan States, GOI contributes 90%. In case of NHB, CDB, CIH, Nagaland and the National Level Agencies (NLA), GOI contributes 100%.

The budget allocation of Rs. 1965.98 crore has been earmarked for MIDH during 2023-24. As on 31<sup>st</sup> December, 2023, funds to the tune of Rs. 805.60 crore have been released for implementation of activities of MIDH *i.e.* Rs. 408.63 crore under NHM, Rs. 133.96 crore under HMNEH, Rs. 50.50 crore under CDB, Rs. 140.00 crore to NHB, Rs. 24.82 crore under NBM and Rs. 47.69 crore to CIH, DCCD & DASD and Estt. Expenditure of CDB & NHB.

### 9.8 Rashtriya Krishi Vikas Yojana

Rashtriya Krishi Vikas Yojana (RKVY) was launched as a flagship scheme of the DoA&FW in 2007-2008 to incentivize States to draw up comprehensive agriculture development plans, taking into account agro-climatic conditions, natural resources and technology for ensuring more inclusive and integrated development of agriculture and allied sectors. The scheme was implemented as a State Plan Scheme till the end of the financial year 2013-14 and is being implemented as a CSS (State Plan) scheme thereafter. In accordance with the directions of the Ministry of Finance, the funding pattern of the scheme from 2015-16 onwards has been altered from 100% funding by the Central Government in the ratio of 60:40 between the

Centre and States and 90:10 for North-Eastern and Himalayan States. However, funding pattern to UTs continued to be as 100% by the Central Government.

The Scheme has been 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-post-harvest infrastructure, besides promoting agri-entrepreneurship, innovations & value addition with the approval of the Union Cabinet on 1<sup>st</sup> November, 2017.

As per recommendation of Expenditure Finance Committee, RKVY has been re-structured as RKVY Cafeteria Scheme from 2022-23 onwards merging some schemes of DoA&FW, which includes Soil Health & Fertility (SHF), RAD, PKVY, PDMC, Agriculture Mechanization (including Promotion of Agricultural Mechanization and Management of Crop Residue, Agro Forestry and Crop Diversification Programme. RKVY cafeteria scheme has 3 components *viz.* Annual Action Plan (AAP), Detailed Project Report (DPR) and Administration, Monitoring and Evaluation including startup.

### 9.9 Pradhan Mantri Fasal Bima Yojana

After detailed discussions with various stakeholders including State Governments, representatives of farmer organizations, Government of India had formulated the new Crop Insurance Scheme *viz.* Pradhan Mantri Fasal Bima Yojana (PMFBY), which is being implemented in various States/Union Territories of the country since *khariif* 2016. This scheme aims at supporting sustainable production in agriculture sector by way of :

- ◆ Providing financial support to farmers suffering crop loss/damage arising out of unforeseen events;
- ◆ Stabilizing the income of farmers to ensure their continuance in farming;
- ◆ Encouraging farmers to adopt innovative and modern agricultural practices;
- ◆ Ensuring flow of credit to the agriculture sector; which will contribute to food security, crop diversification and enhancing growth and competitiveness of agriculture sector besides protecting farmers from production risks.

Total fund released by Government of India during the year 2023-24 towards PMFBY is Rs. 9125.02 crore.

### 9.10 Pradhan Mantri Kisan Samman Nidhi

PM-KISAN is a central sector scheme launched on 24<sup>th</sup> February 2019 to supplement the financial needs of land-holding farmers. Under this scheme, the financial benefit of Rs 6,000/- per year in three equal instalments every four months is transferred into the bank accounts of farmers' families across the country through Direct Benefit Transfer (DBT) mode. The scheme leverages technological process advancements so that the maximum number of beneficiaries can benefit without any hassle.

Since the launch of the PM-KISAN scheme, it has been centred on using technology to guarantee that all eligible farmers get the benefit of the scheme. To this end, the scheme has continually evolved by integrating various systems including use of Digital Public Goods such as authentication through Aadhaar, Aadhaar based payment system, income tax and PFMS verification, pensioner data in PMFS and land records as per the Record of Rights. A farmer-centric digital infrastructure has ensured the benefits of the scheme reach all the farmers across the country.

Under the scheme, MoA&FW, Government of India, has launched the PM Kisan Mobile APP with a Face Authentication Feature to enable farmers to complete their e-KYC's from their mobiles. Further, to make the lives of PM-KISAN beneficiaries easy, the Government has developed the "Know Your Status" (KYS) module using the technology available within the existing ecosystem. Under the PM-KISAN scheme – the AI chatbot PM-KISAN e-Mitra was launched on 21<sup>st</sup> September 2023.

### 9.11 Paramparagat Krishi Vikas Yojana

The PKVY Scheme is being implemented in cluster mode with minimum of 20 ha area. 25 such clusters are converted into one large cluster of about 500 ha area to facilitate marketing of organic produce. The scheme provides for an assistance of Rs.50, 000 per ha to states, out of which 62% *i.e.*, Rs. 31,000 is given as incentives to a farmer (for organic conversion, organic inputs, on farm inputs, production infrastructure, etc.) directly through DBT during the conversion period of 3 years. PKVY was launched in 2015-16 with the broad objectives of promoting natural resource based integrated and climate resilient sustainable farming systems that ensure maintenance and increase of soil fertility, natural resource conservation, on-farm nutrient recycling and minimize dependence of farmers on external inputs to reduce cost of agriculture to farmers through sustainable integrated organic farming systems, to sustainably produce chemical free and nutritious food for human consumption, to protect environment from hazardous inorganic

chemicals, to empower farmers through their own institutional development in the form of clusters and groups with capacity to manage production, processing, value addition and certification management and to make farmers entrepreneurs through direct market linkages with local and national markets.

### 9.12 National Mission on Natural Farming

GoI has already initiated Natural Farming through implementation of Bhartiya Prakritik Krishi Paddhti (BPKP-A sub scheme of PKVY) since 2020-21 to promote traditional indigenous agro-ecological farming. A total of 4.09 lakh ha area has already been covered in 8 States under BPKP. The BPKP scheme is being upscaled in Mission Mode as a separate Scheme as National Mission on Natural Farming to cover 7.5 lakh ha area by developing 15000 clusters. The scheme has already been appraised by the EFC on 4<sup>th</sup> October 2022 and is under consideration for approval of Government of India.

### 9.13 Agriculture Credit

The performance of the agriculture sector remains critical to growth and employment in the country. Investment in the sector must be encouraged through an affordable, timely and inclusive approach to credit delivery. In this regard, the Government announces an annual target for agriculture credit in the budget annually. Agricultural credit flow has shown consistent progress every year. The agriculture credit flow target for the year 2022-23 was fixed at Rs. 18,50,000 crore, and against this target, the achievement was Rs. 21,87,413 crore. The agriculture credit flow target for 2023-24 was fixed at Rs. 20,00,000 crore.

### 9.14 Kisan Credit Card Scheme

The MoA&FW is actively involved in promoting KCC scheme to provide farmers easy access to concessional institutional credit. Several steps have been taken to simplify the procedure to access KCC. The KCC scheme, along with the benefit of IS & PRI has been extended to farmers practising animal husbandry and fisheries. Processing fees, inspection, ledger folio charges, and all other service charges have been waived for fresh issues/renewal of KCC. Collateral free agriculture loan limit has been raised from Rs.1.00 lakh to Rs.1.60 lakh. Standardised application form for KCC has been designed for easy understanding of farmers. To bring the maximum number of farmers under KCC so that they can get loans at a cheaper rate through the MISS scheme, the government has been running a campaign for saturation of KCC to farmers since February 2019. DoA&FW and DFS has further taken up the task of covering 2.5 crore farmers under KCC in a mission mode. Since February 2020, a renewed saturation

drive has been run to cover eligible and willing farmers with a particular focus on PM KISAN beneficiaries. As a result, as of 29<sup>th</sup> December, 2023, 463.12 lakh new KCC applications have been sanctioned with a sanctioned credit limit of Rs. 5,66,903 crore as part of the drive. A revised KCC Saturation drive, *i.e.* "Ghar Ghar KCC Abhiyan", was launched with a special focus on saturating PM KISAN beneficiaries from 1<sup>st</sup> October, 2023 to 31<sup>st</sup> December, 2023.

### 9.15 Doubling Farmers Income

Government constituted an Inter-ministerial Committee in April, 2016 to examine issues relating to "Doubling of Farmers Income" and recommended strategies to achieve the same. The Committee submitted its Report to the Government in September, 2018 containing comprehensive strategy for doubling farmers' income through various policies, reforms and programmes.

To achieve the objective, the Committee identified seven sources of income growth:

- (i) Increase in crop productivity
- (ii) Increase in livestock productivity
- (iii) Resource use efficiency – reduction in cost of production
- (iv) Increase in cropping intensity
- (v) Diversification to high value agriculture
- (vi) Remunerative prices on farmers' produce
- (vii) Shift of surplus manpower from farm to non-farm occupations

All these policies and programmes are being supported by higher budgetary allocations of DoA&FW. In the Fiscal year 2013-14, when the Ministry of Cooperation, Department of Animal Husbandry and Dairying, and Department of Fisheries were integral parts of the MoA&FW, the total budget allocation was a mere Rs. 30,223.88 crore. Despite the subsequent separation of these ministries/ departments, total budget allocation for the MoA&FW has witnessed a substantial increase, reaching Rs.1,25,035.79 crore (Rs. 1,15,531.79 crore for DoA&FW and Rs. 9,504 crore for DARE) in the financial year 2023-24. Budgetary allocations for other line Departments/Ministries, non-budgetary financial resources such as creating Corpus Funds like MIF, Agriculture Infrastructure Funds, PM Matsya Sampada Yojana, Animal Husbandry Infrastructure Development Fund, etc. Further, due to implementation of these schemes, programmes and initiatives, there has been record production in foodgrain and in horticulture and other crop sectors, as also in respect of livestock & fisheries. Also the

country has witnessed emphatic growth in export of agriculture and allied commodities.

The efforts of Government for positive implementation of these schemes are, therefore, yielding good results and the income of the farmers is improving. As part of the 'Azadi ka Amrit Mahotsav', ICAR has released a book, which contains compilation of success stories of 75,000 farmers out of innumerable successful farmers whose incomes have increased more than two times.

### 9.16 Atmanirbhar Bharat Abhiyaan

The vision of new India was announced by the Hon'ble Prime Minister Shri Narendra Modi on 12<sup>th</sup> May, 2020. In agriculture, Atmanirbhar Bharat Abhiyaan (ABA) aims to strengthen infrastructure, logistics, capacity building, etc. The components of the ABA for DoA&FW are as follows:

#### a. Agriculture Infrastructure Fund

In order to address the existing infrastructure gaps and mobilize investment in agriculture infrastructure, Agriculture Infrastructure Fund (AIF) was launched under Aatmanirbhar Bharat Package. AIF was introduced with a vision to transform the agriculture infrastructure landscape of the country. The AIF is 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 credit guarantee support. The Fund of Rs. 1 lakh crore under the scheme will be disbursed from 2020-21 to 2025-26 and the support under the scheme will be provided for the duration of 2020-21 to 2032-33.

Under the scheme, Rs.1 lakh crore will be provided by banks and financial institutions as loans with interest subvention of 3% per annum and credit guarantee coverage under CGTMSE for loans up to Rs. 2 crore. Further, each entity is eligible to get the benefit of the scheme for up to 25 projects located in different LGD codes.

Eligible beneficiaries include Farmers, Agri-entrepreneurs, Start-ups, Primary Agricultural Credit Societies (PACS), Marketing Cooperative Societies, Farmer Producers Organizations (FPOs), Self Help Group (SHG), Joint Liability Groups (JLG), Multipurpose Cooperative Societies, Central/State agency or Local Body sponsored Public Private Partnership Projects, State Agencies, Agricultural Produce Market Committees (Mandis), National & State Federations of Cooperatives, Federations of FPOs and Federations of SHGs.

#### b. The National Beekeeping and Honey Mission

Government of India has approved a Central Sector Scheme entitled National Beekeeping & Honey Mission



(NBHM) under Aatma Nirbhar Bharat Announcement for overall promotion and development of scientific beekeeping and to achieve the goal of Sweet Revolution in the country with total budget outlay of Rs. 500.00 crore for 3 years (2020-21 to 2022-23) and the scheme has been further extended for three years, *i.e.*, 2023-24 to 2025-26, with the remaining available budget of Rs. 370.00 crore from the allocated budget of Rs. 500.00 crore. The scheme is being implementing through 3 Mini Missions (MMs) - MM-I, MM-II & MM-III under which thrust will be given on awareness, capacity building/trainings, focus on women empowerment through beekeeping, setting up of requisite infrastructural facilities, *viz.*; Integrated Beekeeping Development Centres (IBDCs), Honeybees Disease Diagnostic Labs, Setting/upgradation of Honey Testing labs, Beekeeping Equipment Manufacturing Units, Custom Hiring Centres, Api Therapy Centres, Development of Quality Nucleus Stock Centres & Bee Breeders, Distribution of Bee Colonies a new Component, Digitization/online registration, etc. under MM-I, processing, value addition, market support, etc. under MM-II and R&D under MM-III.

#### 9.17 Digital Agriculture (erstwhile National e-Governance Plan – Agriculture)

Ministry of Agriculture & Farmers Welfare is implementing National e-Governance Plan – Agriculture (NeGP-A). Its aim is to achieve rapid development in India through use of Information & Communication Technology (ICT) for timely access to agriculture related information for the farmers. In agriculture, availability of real time information at the right time is a continuous challenge. Lack of information at proper time causes loss to farmers. NeGP-A aims to bridge this gap in communication by using technology.

National e-Governance Plan in Agriculture (NeGP-A) was initially launched in seven selected States in the last quarter of 2010-11. This scheme was subsequently extended in 2<sup>nd</sup> Phase to cover all the States and 7 UTs from 2014-15. NeGP-A aims to achieve rapid development in India through use of ICT for timely access to agriculture related information for the farmers. Furthermore, in the last decade, a digital revolution has begun in India. Through the effective use of data, significant growth is being witnessed across various sectors. Several initiatives of the GoI, such as Digital India Mission, National e- Governance Plan, Make in India, Startup India and other significant investments in technology infrastructure, have catalysed the development of a thriving digital ecosystem in India. The GoI has leveraged data and emerging technologies to improve governance, drive innovation and make informed decisions in various

sectors such as finance, healthcare, retail, and agriculture. Additionally, the rise of digital transformation in key areas has led to exponential sectoral growth in the country and positioned India as a leader in the implementation of digital technologies.

In view of the above background, NeGP-A guidelines were amended in FY 2020-21 to incorporate projects involving the use of modern Information Technologies, such as Artificial Intelligence, Machine Learning, Blockchain Technology, the Internet of Things, Robotics, etc.

#### 9.18 MKisan-Use of Basic Mobile Telephony

The DoA&FW has developed a portal–mkisan (mkisan.gov.in), where, around 5.3 crore farmers are registered and experts/scientists of different departments like IMD, ICAR, State Government, State Agriculture Universities send information to farmers in local languages on a regular basis. Information related to the weather such as likelihood of rainfall, temperature, etc. enables farmers to make informed decision in choice of seed varieties and decide on timing of sowing and harvesting. With market information, farmers are better informed to sell their produce, prevailing market prices and quantity 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 65 lakhs SMSs have been sent through mKisan since its inception in 2013. Advisory counts are more than 1 lakh.

#### 9.19 Development of Mobile Apps

Spreading agricultural related information to farmers in the poorest communities has been made easier by proliferation of mobile phones. Today, mobile apps and services are being designed and released in different parts of the world. Mobile apps help to fulfil the larger objective of farmers' empowerment and facilitates in extension services which can address food security issues. Various mobile apps have been developed for farmers.

Kisan Suvidha is an omnibus mobile app to help farmers by providing relevant information to them quickly. It has a simple interface and provides information on different parameters, such as weather, input dealers, market price, plant protection, expert advisories, soil health card, cold store & godown, crop insurance, fertilizers, KVK, PM-KISAN, seeds, organic farming, etc.

#### 9.20 Unified Portal for Agriculture Statistics

Unified Portal for Agricultural Statistics (UPAg) aims to empower stakeholders in the agriculture

sector, including policymakers, researchers, and farmers, by providing them with comprehensive insights to support informed decision-making. The key features of UPAG are integration with other systems generating agriculture statistics such as price, trade, procurement, stock etc.; centralized hub for near real time information on crop production, market trends, pricing, and other vital agricultural data; providing quick insight on area, production, yield of various crops and market intelligence on cereals, pulses, oilseeds, etc.

## 9.21. FAI Initiatives

### 9.21.1 *Special Issue of Indian Journal of Fertilisers on Carbon Management for Sustainable Soil Health and Environment*

The April 2023 issue of IJF was brought out on the theme of Carbon Management for Sustainable Soil Health and Environment. The main objective was to find out the ways and means to enhance organic carbon in the soil for a sustainable agriculture. Six papers covering important aspects of organic carbon were published in this issue by the experts in the field.

### 9.21.2 *Special Issue of IJF on Millets for Food and Nutritional Security*

The year 2023 was declared by the United Nation as the International Year of Millets and India wants to position itself a global hub for millets. According to FAO Director General, Dr. QU Dongyu Millets can play an important role and contribute to our collective efforts to empower small holder farmers, achieve sustainable development, eliminate hunger, adopt to climate change, promote biodiversity and transform agri-food systems. Keeping above in view, FAI brought out October 2023 issue of IJF as Millet special issue on the theme Millets for Food and Nutrition Security. Six papers on various aspects of millets were published in the special issue.

### 9.21.3 *Special Issue of IJF on the Occasion of XXII Biennial Symposium of ISA*

The Indian Society of Agronomy in collaboration with Indian Council of Agricultural Research, New Delhi had organized XXII Biennial Symposium on Climate Smart Agronomy for Resilient Production Systems and Livelihood Security, at ICAR-Central Coastal Agricultural Research Institute, Ela, Goa from 22 to 24 November, 2023. To commemorate the occasion, the November 2023 issue of IJF was published as special issue on the theme of the Symposium. Ten papers were published in the special issue and the soft copy of this was made available to all the delegate of the Symposium.

9.21.4 *Special Issue of Khad Patrika* on Shree Anna was bought out in August 2023. Six papers on various aspects of millets were published in the special issue.

### 9.21.5 *Revised Edition of FCO*

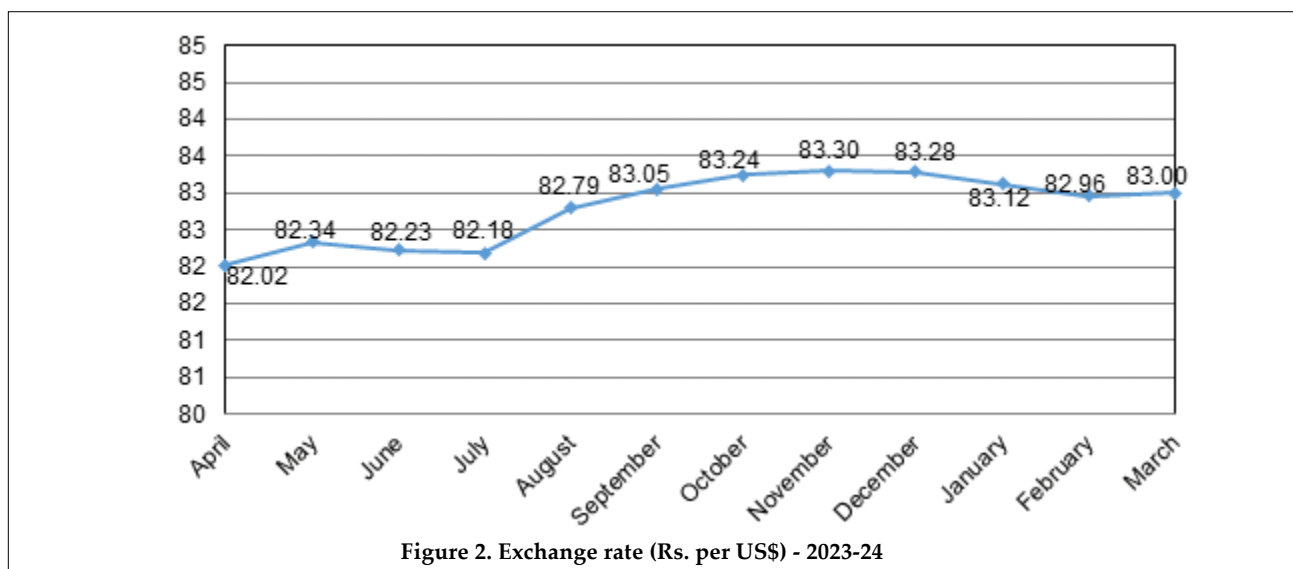
FCO 1985 is a dynamic Order and updated Editions of this document have been issued by FAI from time to time incorporating various amendments made by the Government of India. The 21<sup>st</sup> Edition of The Fertiliser (Inorganic, Organic or Mixed) (Control) Order 1985 was brought out in November 2023, which includes amendments issued upto November, 2023. 3<sup>rd</sup> Edition of the Order in Hindi covering amendments upto November 2023 was also published.

## 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, Rome, Italy; The International Fertilizer Association, Paris, France; The Sulphur Institute, Washington DC; The International Potash Institute, Switzerland; International Crops Research Institute for the Semi-Arid Tropics, Hyderabad, India; International Fertilizer Development Centre, Muscle Shoals, USA; International Rice Research Institute, Los Banos, Philippines; International Maize and Wheat Improvement Center, Mexico; International Zinc Association, USA; and many others. This helps to promote 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 2023-24 over 2022-23. The average exchange rate of rupee per US\$ was 82.79 in 2023-24 compared to 80.36 during 2022-23. At the beginning of the year *i.e.* April 2023, the value of rupee against US\$ was 82.02 which depreciated during the subsequent months and touched at 83.30 during November 2023. **Figure 2** shows monthly



trend in the exchange rate of rupee vis-à-vis US\$ during 2023-24.

## 11.0 INTERNATIONAL PRICES

### 11.1 Raw Materials/Intermediaries

India is heavily dependent on imports of both raw materials and finished fertilizers. Estimated production of ammonia was 18.4 million MT during 2023-24. Natural gas accounted for 87.1% in production of N during the period. Naphtha was partially used by one plant as feedstock which has switched to natural gas in February 2024. Share of domestic gas in total gas utilization in fertilizer sector has dwindled gradually over the years. However, domestic gas share showed increase during 2023-24 to 20.2% for urea sector compared to 14.2% in 2022-23 due to supply of gas from high pressure and high temperature (HP-HT) gas from KG-D6 fields during the year. About 16 billion SM<sup>3</sup> (44 million SM<sup>3</sup> per day) of LNG was imported during the year to supplement the supply of domestic gas for urea production. In addition, about 2.18 million MT of ammonia was also imported during 2023-24 to supplement the requirement of ammonia for production of DAP/NP/NPK complex fertilizers in the country.

With regard to phosphates, bulk requirement of raw materials/intermediates is fulfilled through imports. During 2023-24, about 8.81 million MT of rock phosphate and 1.71 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 raw materials is used by the fertilizer industry. About 60-65% requirement of

phosphoric acid is met through imports. During 2023-24, about 2.26 million MT of phosphoric acid (as P<sub>2</sub>O<sub>5</sub>) was imported. International prices of these raw materials/ intermediates play an important role in the cost of production of phosphatic fertilizers. There had been volatile market prices of raw materials/intermediates during 2023-24. In spite of several challenges, Indian fertilizer industry had maintained the production level and imports during the year.

#### 11.1.1 Rock phosphate

India imported 8.81 million MT of rock phosphate in 2023-24 as against 9.09 million MT during the previous year. Major exporters of rock phosphate to India include Jordan, Morocco, Egypt, Togo, Algeria, UAE, Lebanon and Senegal. Small quantities are also imported by India from a few other countries.

Year 2022-23 marked with significantly high prices of fertilizers and raw materials/intermediates in the international market which also remained volatile during 2023-24. FOB (Morocco) prices of rock phosphate (68%-72% BPL) ranged between US\$ 265-335 per MT during January-March 2023 and US\$ 265-305 per MT during April-June 2023. However, it softened during the rest quarters of 2023-24. Prices ranged between US\$ 150-280 per MT; US\$ 145-295 per MT and US\$ 145-270 per MT during July-September 2023; October-December 2023 and January-March 2024, respectively. Similar trends in FOB prices of rock phosphate were observed from Egypt rock phosphate (60-68% BPL). However, FOB prices of rock phosphate from Jordan remained almost at the level of 2022-23. FOB prices of rock phosphate from different sources on quarterly basis are presented in Table 20.

Year	Quarter	Phosphate Rock Bulk FOB				Sulphur Bulk FOB	
		Morocco (68-72% BPL)	Egypt (60-68% BPL)	Jordan (66-72% BPL)	Jordan (73-75% BPL)	Middle East Spot	Vancouver Spot
		Contract	Spot/Contract	Contract	Contract	Min. - Max.	Min. - Max.
		Min. - Max.	Min. - Max.	Min. - Max.	Min. - Max.	Min. - Max.	
2015	Jan./March	110 - 120	62 - 75	105 - 118	128 - 137	161 - 180	156 - 166
	April/June	110 - 120	62 - 75	105 - 120	129 - 137	140 - 149	134 - 143
	July/Sept.	111 - 122	59 - 77	105 - 124	130 - 137	142 - 150	135 - 145
	Oct./Dec.	115 - 130	64 - 79	105 - 124	130 - 137	119 - 128	113 - 121
2016	Jan./March	94 - 138	60 - 76	96 - 118	123 - 129	94 - 103	89 - 98
	April/June	90 - 140	57 - 69	90 - 111	120 - 121	79 - 85	73 - 83
	July/Sept.	90 - 134	54 - 68	87 - 107	115 - 120	70 - 77	67 - 74
	Oct./Dec.	90 - 121	41 - 64	83 - 105	108 - 120	81 - 88	76 - 82
2017	Jan./March	81 - 115	40 - 62	82 - 103	108 - 119	86 - 91	83 - 89
	April/June	80 - 107	46 - 66	84 - 90	106 - 115	75 - 82	74 - 81
	July/Sept.	75 - 97	40 - 60	81 - 92	105 - 113	98 - 103	91 - 98
	Oct./Dec.	70 - 90	36 - 51	73 - 95	98 - 107	158 - 174	143 - 158
2018	Jan./March	72 - 96	37 - 50	73 - 97	98 - 107	120 - 132	118 - 127
	April/June	77 - 102	40 - 51	80 - 102	105 - 112	120 - 130	117 - 125
	July/Sept.	83 - 108	40 - 55	84 - 108	111 - 118	141 - 147	131 - 137
	Oct./Dec.	78 - 114	40 - 56	85 - 110	112 - 120	151 - 156	143 - 153
2019	Jan./March	79 - 118	40 - 56	85 - 110	112 - 120	103 - 111	106 - 112
	April/June	80 - 120	40 - 55	85 - 110	112 - 120	99 - 106	98 - 103
	July/Sept.	75 - 110	40 - 55	63 - 102	106 - 112	71 - 77	71 - 77
	Oct./Dec.	72 - 105	36 - 55	52 - 98	104 - 108	41 - 46	41 - 46
2020	Jan./March	70 - 100	35 - 55	52 - 95	102 - 105	42 - 47	39 - 44
	April/June	73 - 103	35 - 55	53 - 95	100 - 105	54 - 60	55 - 61
	July/Sept.	78 - 107	35 - 55	60 - 97	102 - 107	55 - 60	54 - 60
	Oct./Dec.	78 - 112	36 - 56	67 - 101	105 - 110	76 - 81	72 - 77
2021	Jan./March	83 - 121	38 - 59	69 - 104	108 - 113	144 - 157	132 - 142
	April/June	99 - 146	42 - 61	79 - 120	125 - 132	181 - 190	166 - 178
	July/Sept.	115 - 183	50 - 65	91 - 143	150 - 160	171 - 181	172 - 180
	Oct./Dec.	131 - 210	52 - 79	103 - 156	164 - 178	235 - 249	217 - 226
2022	Jan./March	171 - 254	57 - 94	118 - 178	184 - 206	330 - 352	318 - 330
	April/June	247 - 325	72 - 117	141 - 229	239 - 272	454 - 470	438 - 450
	July/Sept.	275 - 365	95 - 160	160 - 240	240 - 280	130 - 152	127 - 144
	Oct./Dec.	235 - 345	82 - 146	156 - 240	236 - 280	148 - 163	138 - 148
2023	Jan./March	265 - 335	73 - 135	140 - 230	220 - 270	126 - 136	124 - 133
	April/June	265 - 305	70 - 135	130 - 230	220 - 270	81 - 87	78 - 87
	July/Sept.	150 - 280	68 - 133	130 - 230	220 - 250	84 - 95	80 - 90
	Oct./Dec.	145 - 295	73 - 128	130 - 230	220 - 250	90 - 98	86 - 93
2024	Jan./March	145 - 270	85 - 125	120 - 220	220 - 250	71 - 77	65 - 72
	April/June	145 - 295	85 - 126	120 - 220	220 - 250	80 - 85	72 - 77

### 11.1.2 Sulphur

Import of sulphur showed an increase from 1.34 million MT in 2022-23 to 1.71 million MT in 2023-24. Major suppliers of sulphur to India are UAE, Oman, Qatar, Kuwait and Saudi Arabia. Other suppliers include Japan, Russia and Singapore. Small quantities of sulphur are also imported by India from a few other countries. Sulphur is mostly recovered from petroleum refineries.

There had been variation in prices of sulphur during 2023-24. The range of FOB (Middle East) spot price of sulphur which was US\$ 126-136 per MT during the 4<sup>th</sup> quarter of 2022-23, *i.e.* January-March 2023, reduced to US\$ 81-87 per MT during the 1<sup>st</sup> quarter of 2023-24 *i.e.* April-June 2023. It

moved up during 2<sup>nd</sup> (July-September 2023) and 3<sup>rd</sup> (October-December) quarters at US\$ 84-95 per MT and US\$ 90-98 per MT, respectively. During 4<sup>th</sup> quarter (January-March 2024), it ranged between US\$ 71-77 per MT. FOB prices from other source, such as, Vancouver (Canada) also showed similar trend. FOB prices of sulphur from different sources on quarterly basis are given in **Table 20**.

### 11.1.3 Ammonia

India imported 2.18 million MT of ammonia in 2023-24 as against 2.34 million MT during the previous year. Major suppliers of ammonia to India are Saudi Arabia, Oman, Indonesia, Bahrain, Qatar, etc. Other countries which

Table 21. Average CFR (India) prices of ammonia and phosphoric acid from 2015 to 2024

(US\$ MT <sup>-1</sup> )							
Year	Quarter	Ammonia			Phosphoric acid		
		Min.	-	Max.	Min.	-	Max.
2015	Jan./March	506	-	529	768	-	768
	April/June	416	-	451	805	-	805
	July/Sept.	424	-	473	810	-	810
	Oct./Dec.	436	-	470	810	-	810
2016	Jan./March	343	-	384	715	-	715
	April/June	361	-	384	605	-	605
	July/Sept.	263	-	303	605	-	607
	Oct./Dec.	186	-	216	580	-	580
2017	Jan./March	278	-	313	545	-	550
	April/June	310	-	349	571	-	590
	July/Sept.	221	-	250	567	-	570
	Oct./Dec.	298	-	353	567	-	572
2018	Jan./March	327	-	352	678	-	678
	April/June	286	-	306	730	-	730
	July/Sept.	332	-	386	758	-	758
	Oct./Dec.	361	-	377	766	-	766
2019	Jan./March	296	-	319	750	-	750
	April/June	249	-	271	728	-	728
	July/Sept.	232	-	255	655	-	655
	Oct./Dec.	253	-	283	625	-	625
2020	Jan./March	253	-	289	590	-	590
	April/June	213	-	241	607	-	607
	July/Sept.	234	-	263	625	-	625
	Oct./Dec.	265	-	300	689	-	689
2021	Jan./March	318	-	371	795	-	795
	April/June	519	-	583	998	-	998
	July/Sept.	620	-	662	1160	-	1160
	Oct./Dec.	670	-	724	1330	-	1330
2022	Jan./March	865	-	953	1530	-	1530
	April/June	975	-	1056	1715	-	1715
	July/Sept.	897	-	947	1715	-	1715
	Oct./Dec.	829	-	881	1175	-	1175
2023	Jan./March	645	-	685	1050	-	1050
	April/June	286	-	328	970	-	970
	July/Sept.	362	-	420	850	-	850
	Oct./Dec.	528	-	587	985	-	985
2024	Jan./March	326	-	426	968	-	968
	April/June	301	-	364	948	-	948

supply ammonia to India include Malaysia, UAE, Jordan, Egypt, Tunisia, China, Vietnam and USA. Egypt, Singapore and a few others.

Small quantities are also imported from South Africa, Philippines, Indonesia and a few others.

CFR (India) price of ammonia was in the range of US\$ 286-587 per MT during the year 2023-24. CFR (India) price of ammonia reduced from US\$ 645-685 per MT during January-March 2023 to US\$ 286-328 per MT during April-June 2023. It moved up at the range of US\$ 362-420 per MT during the 2<sup>nd</sup> quarter (July-September 2023) and US\$ 528-587 per MT during the 3<sup>rd</sup> quarter (October-December 2023). During the 4<sup>th</sup> quarter (January-March 2024), it was in the range of US\$ 326-426 per MT (Table 21).

#### 11.1.4 Phosphoric acid

India imported about 2.26 million MT of phosphoric acid in 2023-24 as against 2.69 million MT during the previous year. Major suppliers of phosphoric acid to India are Morocco, Senegal,

Jordan, Egypt, Tunisia, China, Vietnam and USA. Small quantities are also imported from South Africa, Philippines, Indonesia and a few others.

CFR (India) price of phosphoric acid was in the range of US\$ 850-985 per MT during the year 2023-24. During the 1<sup>st</sup> quarter of 2023-24 (April-June 2023) CFR (India), price of phosphoric acid was US\$ 970 per MT which reduced to US\$ 850 per MT during the 2<sup>nd</sup> quarter (July-September 2023). Thereafter, it increased to US\$ 985 per MT during the 3<sup>rd</sup> quarter (October-December 2023) and marginally reduced in the 4<sup>th</sup> quarter (January-March 2024) to US\$ 968 per MT (Table 21).

#### 11.2 Finished Fertilizers

Like raw materials and intermediates, prices of the finished fertilizers also remained volatile during 2023-24. Table 22 shows the source-wise



range of FOB prices and **Table 23** gives the average CFR (India) prices of Urea, DAP and MOP.

### 11.2.1 Urea

During 2023-24, consumption of urea was 35.8 million MT as against domestic production of 31.4 million MT. Higher demand of urea was fulfilled through imports. Import of urea was 7 million MT during 2023-24 compared to 7.6 million MT in the previous year. India imports urea mainly from Oman, China, Russia, UAE, Saudi Arabia, Indonesia, Qatar, Malaysia and Finland. A few other countries which supply urea to India include Bahrain, Egypt, Algeria and Vietnam.

The international FOB prices of urea were in the range of US\$ 252-370 per MT during 2023-24. Range of FOB spot prices of urea from CIS and China were in the range of US\$ 252-325 per MT during 1<sup>st</sup> quarter of 2023-24. It increased to the range of US\$ 302-370 per MT during 2<sup>nd</sup> and 3<sup>rd</sup> quarters. Prices went down to US\$ 284-324 per MT in the 4<sup>th</sup> quarter (**Table 22**). Although, the international prices of urea showed downward trends during 2023-24 compared to 2022-23 and 2021-22 but were high compared to prior to these years.

The weighted average CFR price of urea for the quantities imported by India for the full year 2023-24 was US\$ 370.43 per MT compared to US\$ 626.81 per MT in 2022-23 (**Table 23**). The buyback arrangement of Government of India with JV OMIFCO for urea came to an end in July 2020. Henceforth, India imports urea from OMIFCO as per international terms.

### 11.2.2 DAP

Consumption of DAP increased from 10.42 million MT during 2022-23 to 10.81 million MT during 2023-24. However, production of DAP reduced marginally from 4.35 million MT to 4.29 million MT during the period. Import of DAP was also down from 6.58 million MT to 5.57 million MT during the same period. Major suppliers of DAP to India are China, Saudi Arabia, Morocco, Russia, Jordan, Finland, Egypt and USA.

The international FOB prices of DAP were in the range of US\$ 465-620 per MT during 2023-24. FOB price of DAP from Morocco and Jordan was US\$ 504-610 per MT during April-June 2023. However, it was US\$ 488-559 per MT during July-September 2023 but increased to US\$ 535-620 per MT in the third quarter (October-December 2023). The prices reduced marginally to US\$ 535-612 per MT in the last quarter (January-March 2024). Trend in FOB prices was almost similar from other sources (**Table 22**). Although, the international prices of DAP showed downward trends during 2023-24 compared to 2022-23, still the average price of DAP was high. During the full year 2023-24, average CFR (India) price of DAP was US\$ 556 per MT as

against US\$ 805 per MT in the previous year (**Table 23**).

### 11.2.3 MOP

Consumption of MOP (for direct application) increased marginally to 1.64 million MT during 2023-24 from 1.63 million MT during 2022-23. Requirement of entire quantity of MOP is being imported. During 2023-24, total import of MOP was 2.87 million MT compared to 1.87 million MT in the previous year. Major suppliers of MOP to India are Canada, Russia, Israel and Jordan.

The range of FOB spot prices of MOP from CIS (Baltic Sea) was US\$ 294-485 per MT during April-June 2023 which declined to US\$ 232-332 per MT during July-September 2023 and these were US\$ 215-254 per MT during October-December 2023 and US\$ 164-254 per MT during January-March 2024 (**Table 22**). Similar trend in FOB prices was noticed from other source countries, like, Vancouver and Jordan. Average CFR (India) price of MOP for the full year 2023-24 was US\$ 360 per MT against US\$ 590 per MT in 2022-23 (**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 2022-23 and 2023-24. During 2022-23, the average pool price of gas on net calorific value (NCV) was Rs. 1887.78 per MMBTU. In April 2022, it was Rs. 1853.71 per MMBTU which continued to increase and touched at Rs. 2233.18 per MMBTU in September 2023. It plummeted thereafter and touched at Rs. 1433.87 in March 2023. Similarly, during 2023-24, the average pool price of gas on NCV increased to Rs. 1417.18 per MMBTU. It was Rs. 1417.26 per MMBTU in April 2023 which fluctuated on the subsequent months and touched at Rs. 1518.03 per MMBTU in December 2023. Thereafter, it started declining and reached at Rs. 1389.40 per MMBTU in March 2024. During the current year, the average pool price of gas during April-June 2024 is about Rs.1289 per MMBTU.

## 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. With effect from 25<sup>th</sup> 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 to be *neem* coated 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

Table 23. Average CFR (India) prices of Urea, DAP and MOP from 2010-11 to 2023-24			
(US\$ MT <sup>-1</sup> )			
Year	Urea <sup>1</sup>	DAP	MOP
2010-11	JV - 167	593 <sup>2</sup>	370
	Direct - 327.38		
2011-12	JV - 215.19	650 <sup>2</sup>	478
	Direct - 481.74		
2012-13	JV - 227.63	580 <sup>2</sup>	492
	Direct - 417.40		
2013-14	JV - 172.41	475 <sup>2</sup>	375-424
	Direct - 322.66		
2014-15	JV - 179.66	465 <sup>2</sup>	322
	Direct - 303.94		
2015-16	JV - 145.83	459 <sup>2</sup>	332
	Direct - 279.02		
2016-17	JV - 157.50	366 <sup>2</sup>	235
	Direct - 210.42		
2017-18	Direct - 241.33	379 <sup>3</sup>	240 <sup>1</sup>
2018-19	JV - 180.03	459 <sup>3</sup>	275 <sup>3</sup>
	Direct - 305.44		
2019-20 (P)	JV - 180.44	334 <sup>3</sup>	286 <sup>3</sup>
	Direct - 271.46		
2020-21 (P)	Direct - 262.64	369 <sup>3</sup>	239 <sup>3</sup>
2021-22 (P)	Direct - 661.30	741 <sup>3</sup>	359 <sup>3</sup>
2022-23 (P)	Direct - 626.81	805 <sup>3</sup>	590 <sup>3</sup>
2023-24 (P)	Direct - 370.43	556 <sup>3</sup>	360 <sup>3</sup>

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

MT exclusive of state taxes and GST.

In addition, Government of India notified maximum retail price (MRP) of sulphur coated urea with the

name of 'Urea Gold' on 5<sup>th</sup> January, 2024. The MRP of 40 kg bag of sulphur coated urea will be the same as that of 45 kg bag of *neem* coated urea i.e. Rs 266.50 (inclusive of GST).

### 12.2.2 P & K Fertilizers

The retail prices of P & K fertilizers covered under NBS scheme were market driven. In view of volatile international prices of P&K fertilizers and raw materials used for production of phosphatic fertilizers, Government has been insulating the farmers from hike in such prices by providing additional subsidy. In this regard, Department of Fertilizers has been earmarking indicative the MRPs of DAP and NP/NPK complex fertilizers to be made available to the farmers at reasonable prices.

### 13.0 SUBSIDY ON DECONTROLLED PHOSPHATIC AND POTASSIC FERTILIZERS UNDER NBS

Chapter 1 section 1.2.1 and 1.2.2 of the review covered the NBS rates per kg for 2023-24 in respect of P & K fertilizers. Department of Fertilizers notified NBS rates for P&K fertilizers for *kharif* 2023 on 18<sup>th</sup> May, 2023 effective from 1<sup>st</sup> April, 2023 to 30<sup>th</sup> September, 2023. There had been considerable reductions in NBS rates for N, P and K compared to January-March, 2023. Per kg NBS rates of N, P, K and S were fixed at Rs. 76.49, Rs. 41.03, Rs. 15.91 and Rs. 2.80, respectively. Subsequently, subsidy per MT of DAP, MOP and SSP was at Rs. 32,641, Rs. 9,547 and Rs. 6,872, respectively, for the said period. Subsidy on NP/NPK grades of fertilizers ranged between Rs. 18,077 per MT and Rs. 32,906 per MT. Subsidy on potash derived from molasses was increased to Rs. 2,307 per MT. However, per MT additional subsidy for fortified fertilizers with boron and zinc continued to be at the same level of Rs. 300

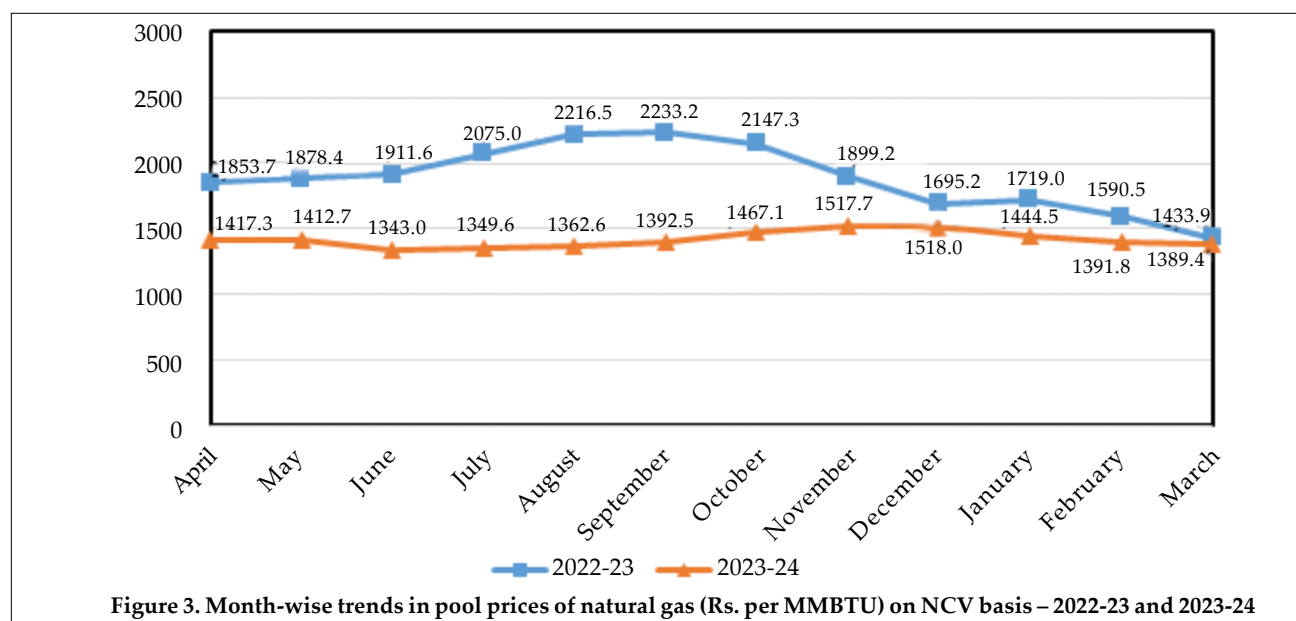




Table 24. Nutrient based subsidy for P & K fertilizers - 2023-24		
A. NBS for nutrient N, P, K and S (Rs. kg <sup>-1</sup> )		
Nutrient	01.04.2023 to 30.09.2023	01.10.2023 to 31.03.2024
N	76.49	47.02
P	41.03	20.82
K	15.91	2.38
S	2.80	1.89
B. NBS for different P & K fertilizers (Rs. MT <sup>-1</sup> )		
Fertilizers	01.04.2023 to 30.09.2023	01.10.2023 to 31.03.2024
DAP (18-46-0)	32,641	22,541\$
MAP (11-52-0-0)	29,748	15,999
TSP (0-46-0-0)	18,872	9,578
SSP (0-16-0-11)	6,872	3,540
MOP (0-0-60-0)	9,547	1,427
16-20-0-13	20,808	11,933
20-20-0-13	23,868	13,814
20-20-0-0	23,504	13,568
28-28-0-0	32,906	18,995
16-16-16-0	21,349	11,235
17-17-17-0	22,683	11,937
19-19-19-0	25,352	13,342
10-26-26-0	22,453	10,734
12-32-16-0	24,854	12,686
14-28-14-0	24,424	12,746
14-35-14-0	27,296	14,203
15-15-15-0	20,015	10,533
15-15-15-09	20,267	10,703
24-24-0-0	28,205	16,282
24-24-0-8	28,429	16,433
14-28-0-0	22,197	12,413
8-21-21	18,077	8,634
9-24-24	20,550	9,800
PDM:0-0-14.5-06 (w.e.f. 1.10.2021)	2,307	345
Ammonium Sulphate (20.5-0-0-23)	16,325	10,074
PDM = Potash Derived from Molasses. \$ = Includes Rs.4500 per MT as special package		
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 MT of fortified fertilizers (Rs.)	
Boron 'Bn'	300	
Zinc 'Zn'	500	

and Rs. 500, respectively.

Taking cognizance of situation of the international market, the Government of India further revised the rates of NBS for *rabi* 2023-24 vide notification dated 26<sup>th</sup> October, 2023 effective from 1<sup>st</sup> October, 2023 to 31<sup>st</sup> March, 2024. Per kg NBS rates of N, P, K and S were reduced significantly and fixed at Rs. 47.02, Rs. 20.82, Rs. 2.38 and Rs. 1.89, respectively, for *rabi* 2023-24. Accordingly, subsidy per MT on DAP, MOP and SSP got reduced from Rs. 32,641, Rs. 9,547 and Rs. 6,872 per MT during *khari* 2023 to Rs. 22,541, Rs. 1,427 and Rs. 3,540 per MT, respectively, for *rabi* 2023-24. A special package of Rs. 4,500 per MT was given on DAP. Subsidy on NP/NPK grades of fertilizers ranged between Rs. 8,634 per MT and Rs. 18,995 per

MT during the period. Subsidy on potash derived from molasses was reduced to Rs. 345 per MT. However, per MT additional subsidy for fortified fertilizers with boron and zinc continued at the same level.

**Part A** of **Table 24** gives the per kg nutrient based subsidy for N, P, K and S for 2023-24. **Part B** of **Table 24** presents the per MT subsidy on various P & K fertilizer 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 retail prices of fertilizers and procurement/support prices of grains. **Table 25** shows physical ratios of N, P<sub>2</sub>O<sub>5</sub> and K<sub>2</sub>O on paddy and wheat during

Table 25. Economics of application of N:P<sub>2</sub>O<sub>5</sub> & K<sub>2</sub>O on paddy and wheat from 1971-72 to 2023-24

Particulars	1971-72	1981-82	1991-92	1992-93	1995-96	2001-02	2002-03	2009-10	2010-11	2011-12	2013-14	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	
			Effective	Effective	(Kharif)	Prior to	w.e.f.														
			14.8.91	25.8.92		Feb. 28	Feb. 28														
<b>A. FERTILIZER &amp; FOODGRAINS PRICES (Rs. kg.<sup>-1</sup>)</b>																					
<b>Nutrient prices (Rs. kg.<sup>-1</sup>)</b>																					
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	11.65	12.23 *	12.23 *	12.23 *	12.23 *	12.23 *	12.23 *	12.23 *	12.23 *	12.23 *	12.23 *
2. P <sub>2</sub> O <sub>5</sub> 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	44.35	43.27	43.54	54.14	47.61	47.61	47.61	47.61	54.14	54.14
				to	to	to	to			to	to										
				12.43	18.48	19.45				18.85	39.61										
3. K <sub>2</sub> 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	26.67	18.33	19.97	26.67	31.67	29.17	32.50	32.50	56.67	56.67
				to	to	to	to			to	to										
				7.57	8.00					8.43	20.13										
<b>Output prices (Rs. kg.<sup>-1</sup>) (CropYear)</b>																					
4. Procurement prices of paddy	0.53	1.15	2.30	2.70	3.60	3.60	5.30	5.30	5.30	10.00	10.80	13.10	14.10	14.70	15.50	17.50	18.15	18.68	19.40	20.40	21.83
5. Procurement prices of wheat	0.76	1.30	2.50	3.30	3.80	3.80	6.20	6.20	6.20	11.00	11.70	12.85	14.00	15.25	16.25	17.35	18.40	19.25	19.75	20.15	22.75
<b>B. PHYSICAL RATIOS</b>																					
<b>PADDY</b>																					
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	1.98	1.05	1.15	1.07	0.89	0.87	0.83	0.79	0.70	0.67	0.65	0.63	0.60
7. Kg. of paddy required to buy 1 kg. P <sub>2</sub> O <sub>5</sub>	3.51	5.07	3.29	4.36	4.71	5.03	2.91	3.06	3.06	1.62	1.71	1.75	3.39	3.45	2.94	2.81	3.09	2.62	2.55	2.45	2.65
- as DAP				to	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 <sub>2</sub> O	1.68	1.89	1.23	2.78	1.68	1.94	1.34	1.40	1.40	0.74	0.74	0.93	2.04	1.89	1.25	1.29	1.52	1.74	1.56	1.68	2.60
				to	to	to	to			to	to	to									
				2.10	2.22					0.84	1.86										
<b>WHEAT</b>																					
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	0.83	0.80	0.75	0.70	0.66	0.64	0.62	0.61	0.58	0.54
10. Kg. of wheat required to buy 1 kg. P <sub>2</sub> O <sub>5</sub>	2.45	4.48	3.03	3.57	4.46	4.77	2.49	2.62	2.62	1.47	1.46	1.47	3.17	3.19	2.86	2.51	2.94	2.47	2.41	2.36	2.55
- as DAP				to	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 <sub>2</sub> 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	1.91	1.75	1.13	1.15	1.45	1.65	1.61	1.61	2.49
				to	to	to	to			to	to	to									
				1.99	2.11					0.72	1.57										
* = Price of Neerem Coated Urea. Includes 5% extra on basic MRP of urea.																					
W.e.f. 25 <sup>th</sup> May, 2015, Govt has made it mandatory for all indigenous producers of urea to produce 100% of their production of subsidised urea as Neerem Coated Urea. The rule is applicable for imported urea also.																					
The government allowed to produce neerem coated urea upto a maximum limit as listed below.																					
W.e.f.	% of the company's total production																				
1 <sup>st</sup> June, 2008	20																				
11 <sup>th</sup> January, 2011	35																				
7 <sup>th</sup> January, 2015	Cap/ restriction removed																				
1 <sup>st</sup> April, 2015	75 (Mandatory)																				
25 <sup>th</sup> May, 2015	100 (Mandatory)																				

Table 26. Economics of sulphur fertilizer application				
Crop	Price (2023-24) Rs. kg <sup>-1</sup>	Yield increase * kg grain kg S <sup>-1</sup>	Value of grain Rs. kg S <sup>-1</sup>	Value: Cost ratio
Paddy	21.83	28	611.2	7.6
Wheat	22.75	24	546.0	6.8
Maize	20.90	26	543.4	6.7
Sorghum	31.80	20	636.0	7.9
Soyabean	46.00	12	552.0	6.8
Mustard	56.50	20	1130.0	14.0
Groundnut	63.77	9	573.9	7.1

\* = 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. 80.72

the period from 1971-72 to 2023-24. 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 the 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. During 2022-23 and 2023-24, the physical ratios of P and K became unfavourable due to proportionately higher increase in retail prices of P&K fertilizers against increase in MSP 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, phosphorus and potassium. The results from experimental stations and farmers' fields indicate that application of 20-40 kg S per hectare in addition to recommended dose of NPK is highly economical. The latest available average price of bentonite sulphur was about Rs.81 per kg. As against this, the price of N (as urea) was Rs.12.23 per kg, for P (as DAP), it was Rs.54.14 per kg and for K (as MOP), it was Rs.56.67 per kg during 2023-24. As per the experimental results, the extra yield with 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 6.7 to 14, showing that economic returns on sulphur application are quite good.

## 16.0 RECENT DEVELOPMENTS AND OUTLOOK FOR 2024-25

### 16.1 NBS for P & K Fertilizers

Chapter 1 section 1.2.3 of the review covered the NBS rates per kg in respect of phosphatic and potassic fertilizers for *kharif* 2024. DoF notified NBS rates for P&K fertilizers for *kharif* 2024 on 1<sup>st</sup> March, 2024 and revised the per kg NBS rate on P from Rs. 20.82 for *rabi* 2023-24 to Rs. 28.72 for *kharif* 2024. However, NBS rates per kg for N, K and S remained unchanged at the *rabi* 2023-24 level. Accordingly, per MT subsidy on DAP has been reduced from Rs. 22,541 for *rabi* 2023-24 to Rs. 21,676 for *kharif* 2024 as the special package of Rs. 4,500 per MT on DAP, notified for *rabi* 2023-24, has been withdrawn. However, as per the statement given by the Minister of State for Chemicals and Fertilizers in the Lok Sabha on 9<sup>th</sup> August, 2024 that due to the recent geo-political situation which is adversely affecting the viability of DAP for the producers/importers, the Government has approved the special package @Rs. 3500 per MT on DAP over and above the NBS subsidy rates on actual PoS sale for the period 1<sup>st</sup> April, 2024 till 31<sup>st</sup> December 2024. Subsequently, DoF has asked the manufacturers/ importers of DAP to submit the supplementary claim on account of special package (interim) from 1<sup>st</sup> April to 15<sup>th</sup> August, 2024 @ Rs.1750 per MT as per the proforma. The submission of claims beyond 15<sup>th</sup> August, 2024 would be informed by the DoF in due course.

Subsidy per MT on SSP increased to Rs.4804 for *kharif* 2024. However, subsidy on MOP remain unchanged at Rs.1427 per MT. Subsidy on NP/NPK grades of fertilizers ranged between Rs.6849 and Rs.21208 per MT during *kharif* 2024.

Per MT additional subsidy for fortified fertilizers with

Table 27. Nutrient based subsidy for P & K fertilizers - 2024-25 (Upto September 2024)	
A. NBS for nutrient N, P, K and S (Rs. kg <sup>-1</sup> )	
Nutrient	w.e.f. 1.4.2024 to 30.9.2024
N	47.02
P	28.72
K	2.38
S	1.89
B. NBS for different P & K fertilizers (Rs. MT <sup>-1</sup> )	
Fertilizers	w.e.f. 1.4.2024 to 30.9.2024
DAP (18-46-0)	21,676
MAP (11-52-0-0)	20,108
TSP (0-46-0-0)	13,212
SSP (0-16-0-11)	4,804
MOP (0-0-60-0)	1,427
16-20-0-13	13,514
20-20-0-13	15,395
20-20-0-0	15,148
28-28-0-0	21,208
16-16-16-0	12,499
17-17-17-0	13,281
19-19-19-0	14,843
10-26-26-0	12,788
12-32-16-0	15,214
14-28-14-0	14,958
14-35-14-0	16,969
15-15-15-0	11,718
15-15-15-09	11,889
24-24-0-0	18,178
24-24-0-8	18,178
14-28-0-0	14,625
8-21-21	10,293
9-24-24	11,696
11-30-14	14,122
PDM:0-0-14.5-06	345
Ammonium Sulphate (20.5-0-0-23)	10,075
Urea-SSP Complex (5-15-0-10)	6,849
PDM = Potash Derived from Molasses.	
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 MT of fortified fertilizers (Rs.)
Boron 'Bn'	300
Zinc 'Zn'	500

boron and zinc continued to be the same. Three new grades of fertilizers *viz.*, 11-30-14 fortified with magnesium, zinc, boron and sulphur; Urea-SSP-complex (5-15-10-0) and SSP (0-16-0-11) fortified with magnesium, zinc and boron have been included in NBS policy *w.e.f.* 1<sup>st</sup> April, 2024. **Table 27** presents per kg nutrient and per MT subsidy applicable for the above products.

### 16.2 Weather

Southwest monsoon 2024 was set in over Kerala 2 days before the normal date and advanced to most parts of northeast India on 30<sup>th</sup> May 2024, 6 days

before the normal date. However, rainfall during June 2024 as a whole was 11% below LPA. Monsoon progress was normal in the first week of June but revived around the third week of June and rapidly covered the entire country by 2<sup>nd</sup> July, 2024. Rainfall during July was 9% above LPA. IMD predicted normal rains during August 2024. Cumulative rains during 1<sup>st</sup> June to 26<sup>th</sup> August, 2024 was normal at 6% above LPA. Out of 36 meteorological sub-divisions, 32 received normal to excess rains while 4 received deficient rains during the period. Sub-division *viz.* Bihar; Punjab; Himachal Pradesh; and J & K & Ladakh received deficient rains during the period. Out of 724 reported districts, 73% received normal to excess rains during the period.

Total live storage capacity in 155 reservoirs monitored by Central Water Commission is 180.85 Billion Cubic Meter (BCM) at full reservoir level. Live storage available in these reservoirs was 130.80 BCM as on 22<sup>nd</sup> August, 2024 compared to 114.66 BCM on the same date in the previous year. Current year's storage accounts 114% of the last year's storage and 112% of the normal storage.

### 16.3 Crop Situation

Monsoon became active over most parts of India during July 2024. As per the latest available data till 16<sup>th</sup> August, 2024, total sown area under all *kharif* 2024 crops was up by 2.1% to 103.16 million ha compared to 101.05 million ha during the corresponding period in the previous year. Sown area under paddy, pulses, coarse cereals, oilseeds and sugarcane increased by 5.6%, 5.7%, 2.7%, 0.9% and 1%, respectively, during the period. However, sown area under cotton and jute & mesta declined by 9.1% and 13.1%, respectively.

### 16.4 Fertilizer Sales

Sale of urea at 10.89 million MT, NP/NPKs at 3.93 million MT and MOP at 0.49 million MT during April-July 2024 recorded increase of 1.6%, 42.4% and 36.3%, respectively, over April-July 2023. However, sale of DAP at 2.94 million MT and SSP at 1.55 million MT witnessed decline of 14.1% and 8.4%, respectively, during the same period.

### 16.5 Prospects of Fertilizer Consumption

Overall southwest monsoon 2024 is anticipated to be normal. This is likely to increase cropped area during the remaining period of *kharif* 2024 further. 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. Overall growth in consumption of fertilizers for the full year 2024-25 is expected to register an increase over the previous year. ■