Discussion Paper on

Changes in Methodology of Quarterly GDP series and Sub-national Accounts

Ministry of Statistics and Programme Implementation (MoSPI) is in the process of revising the base year of national accounts. An Advisory Committee on National Account Statistics (ACNAS) has been constituted under the chairmanship of Prof. B.N. Goldar to advise MoSPI on the inclusion of new data sources for improving the estimates and the methodology for compilation and presentation of National Accounts Statistics. The Committee has representation from various Central Ministries and Departments, State Governments, Reserve Bank of India, Academia and Research Institutions.

2.   Following the recommendation of ACNAS, FY 2022–23 has been identified as the base year for the upcoming series. Its estimates are scheduled for release on 27 February 2026 as per the Advance Release Calendar (ARC). The Ministry has initiated a structured dissemination process through a set of discussion papers to familiarize users with the methodological changes and new data sources planned in the new series. The first two discussion papers cover the approach planned for Annual National Accounts (ANA) in the new series. The first discussion paper, released on 21 November 2025, informs revisions related to the production/income approach in Annual National Accounts. The second discussion paper released on 16 December 2025, give updates on refinements in compilation of aggregates of expenditure approach.

3.   The present paper, the third in the series focuses on improvements in the compilation of (A) Quarterly national accounts and (B) Sub-national accounts.

Part- A *Methodological Improvement in Quarterly National Accounts*

4.   It is known that ANA based on annual data is comprehensive and reliable, and become available after one year. Considering users requirement for more frequent, detailed, and timelier data, Quarterly National Accounts (QNA) is designed to provide data to monitor the economy on a timely basis. QNA because of limitations in data availability and timeliness, and resource constraints on the compilers of the accounts, is based on High Frequency economic indicators. As the name suggests, QNA being available at the end of every quarter, play a critical role in assessing the short-term movements of the economy, allowing policy makers to strategize as per the changing circumstances in real time.

5.   The QNA follows the same principles, definitions, and structure as the ANA as laid down in the IMF *Quarterly National Accounts Manual*, 2017. The compilation is made as per the Benchmark-Indicator (BI) method i.e. the annual estimates of the previous financial year (Benchmark) spread to quarter are extrapolated using the relevant indicators. The method ensures consistency with the ANA and at the same time preserve the movements of the indicators. In the context of the revision of the national accounts base year to 2022–23, a comprehensive review of methodologies used for the compilation of quarterly GDP and its components has been undertaken.

I. Benchmarking

6.   Benchmarking method in the national accounts is used to derive quarterly series through combining the high-frequency information with the corresponding set of low-frequency information (based on annual variables) restricted by the Annual benchmark. Benchmarking technique tends to improve the quality of QNA series by making them consistent with ANA benchmarks and coherent with the short-term evolution of quarterly economic indicators.

7.   In the 2011-12 base year, Pro-Rata method of Benchmarking is used. While simple to implement, this method is observed to produce discontinuities or breaks in the series, called the Step problem. This occurs mainly due to divergence between annual benchmark growth and quarterly indicator movements. Such discontinuities adversely affect the analytical usefulness of QNA series, particularly for seasonal adjustment and short-term trend analysis.

8.   In line with the recommendations made in the Quarterly National Accounts (QNA) Manual (IMF, 2017), **Proportional Benchmarking method** has been evaluated and found to keep the ratio of the benchmarked series to the indicator (i.e., the quarterly BI ratio) as constant as possible, subject to the constraints provided by the benchmarks. This will enable to avoid the artificial discontinuities in the QNA series as well as preserve the movement of the indicators. Based on sector-wise evaluation and stability considerations, the Proportional Denton method will be used for benchmarking in the QNA series.

II. Major Data Sources

9.   Besides the existing data sources being used in the QNA, some new data sources such as GST data (aggregated) cross classified by HSN/ SAC and constitution of business, e-*Vahan* data, data on consumption of Natural Gas, etc., have also been incorporated in the compilation of quarterly estimates of the GDP in the revised series. These new data sources will improve the estimates for those sectors for which no high frequency indicators were available in the existing series as well as will enhance the granularity in the estimation of each institutional sector.

10.   Major data sources which will be used in the revised series of quarterly estimates of GDP are, Data on outward Supplies of Goods and Services; Financial results of Listed Companies; Quarterly production estimates of Major Agricultural and Horticultural Crop; Season-wise production estimates of Major Livestock Products; Quarterly Fish Production estimates; Production of Coal, Crude Petroleum, Natural Gas, Cement; Consumption of Steel; Consumption of Natural Gas; Index of Industrial Production (IIP); Net Tonne Kilometres and Passenger Kilometres for Railways; Passenger and Cargo traffic handled by Civil Aviation; Cargo traffic handled at Major and Minor Sea Ports; Sales of Vehicles; Minutes of Usage and Data Usage in Telecommunication; Quarterly data on Loans and Credits of Banks and Non-banking financial institutions; Premium related information of Life and Non-Life Insurance companies; Accounts of Central and State Governments; Goods and Services Tax collections; Quarterly Export and Import data etc.

III. Revision in Production-side Indicators

Agriculture & Allied Sector

11.   In the Agriculture and Allied sector, Quarterly GVA (QGVA) estimates are first compiled at constant prices using the volume extrapolation method. Assuming a stable relationship between output and value added, constant price QGVA estimates are derived by applying the growth rates of production of the respective sub-sectors. These growth rates are based on quarterly crop production estimates, season-wise production data of major livestock products, and quarterly inland and marine fish production estimates, sourced from the Ministry of Agriculture and Farmers Welfare, the Department of Animal Husbandry and Dairying, and the Department of Fisheries, respectively. In the revised series, the availability of quarter-wise production estimates for additional crops has enhanced the granularity and accuracy of the estimation.

Mining & Quarrying

12.   For estimating constant price QGVA of the Mining and Quarrying sector, volume extrapolation method will be continued in the revised series. Estimates of different Fuel and Non-fuel minerals will be extrapolated separately using relevant volume indicators. In alignment with the ANA methodology, IIP of Coal & Lignite and IIP of Crude Petroleum & Natural Gas, will be used as volume indicators for Coal and Petroleum & Natural Gas, respectively. For Metallic minerals and Non-Metallic minerals, IIP of metallic minerals and IIP of non-metallic minerals, respectively, will be used as indicators for volume extrapolation.

Manufacturing

13.   At current prices, GST-based indicators will be used to estimate output, while corporate financial results will continue to inform GVA growth for the incorporated manufacturing sector (both private and public). For the unincorporated manufacturing sector (comprising quasi-corporate units and household enterprises), the growth rate of 'Outward Taxable Supply' in Hindu Undivided Family, Proprietorships and Partnerships firms will be used as an indicator of GVO and GVA both.

Electricity, Gas, Water Supply and Remediation (EGWR)

14.   In the EGWR sector, volume extrapolation method using IIP (Electricity) will be continued for estimating constant price GVA of the electricity sub-sector. In the existing base year, for the remaining sub-sectors, past growth was used for estimating constant price estimates for forward series. In the revised base year, Constant price estimates of Gas will be compiled using volume extrapolation based on growth in natural gas consumption. For Water supply and Remediation sectors, Constant price estimates will be derived through single extrapolation using an Index of deflated output. For the Private sector of remediation activities, growth observed in GST output will be used and past year growth will be applied for remaining part of remediation.

Construction

15.   In the new series with base year 2022–23, for estimating the QGVA of construction sector, item-wise material inputs at constant prices will be first derived using volume extrapolation method. Eight input items (Cement and cement products, Iron & steel, bricks & tiles, timber & roundwood, bitumen and bitumen mixtures, glass and glass products, fixtures & fittings, other

materials) will be extrapolated using relevant indicators. Cement production and steel consumption growth are used as indicator of cement and iron & steel. For each of remaining input items, relevant item-wise IIP/ Weighted IIP will be used for extrapolation. For example, IIP Bitumen; Weighted IIP of Sheet Glass and Toughened Glass etc. Then, Input-output ratio at base year will be applied to obtain total Output at constant prices.

Non-financial Services Sector

16.   GST (outward supply) information will serve as indicators for the estimation of quarterly GVA at current prices for most of the non-financial services sectors viz. Trade, Hotel & Restaurants, Real Estate, IT, Professional Services and Other Services (Education, Health, Activities of Membership Organization, Recreation, Personal Services, Pvt HH with employed persons, etc.). For the General Government part, past year growth will be applied in the estimation of current price estimates of quarterly GVA.

17.   For Trade and Repair Services, quarterly growth rate (Y-o-Y) observed in '*Outward Taxable Supply*' based on GST data will be used as an indicator for GVA at Institutional sectoral level. For repair & maintenance of motor vehicles, volume extrapolation method will be continued using domestic sales growth of vehicles of all categories as an indicator at constant price level.

18.   For Hotels and Restaurants, quarterly growth rate (Y-o-Y) observed in '*Outward Taxable Supply*' based on GST data will be used as an indicator for GVA at institutional sectoral level.

19.   For Transport services, volume extrapolation method will be continued to derive constant price estimates in the new series. However, estimates for road transport, which is based on stock and sales of vehicles in current series, will now be based on the dynamic updation of stock of vehicles based on l5 year data. Estimates for Air Transport will be extrapolated using Passenger and Cargo handled at scheduled Domestic and International Airport. Rail transport estimates will be extrapolated on the basis of volume growth of passenger and net tonne km. Estimates for water transport will be based on the growth in cargo handled at ports.

20.   Telecommunication sector QGVA estimates at current prices will be based on the listed companies financial results. Constant price estimates for Telecommunication services will be based on volume extrapolation using growth in data usage and minutes of usage. For Post & Courier Service and Recording, Publishing & Broadcasting Communication and Services related to Broadcasting estimates, GST outward supply growth will be used in the new series for estimating the current price estimates.

21.   For Ownership of Dwelling, GVA estimates was based on the net rental (gross rental – repair & maintenance) where both gross rental and repair & maintenance were extrapolated using CAGR of each component in the existing series. In the new series, in place of CAGR, previous year growth will be used for extrapolating number of dwellings and repair & maintenance for urban sector, and gross rental and repair & maintenance for rural sector.

22.   For Public Administration and Defence, GVA was compiled based on Compensation of Employees (CE) and CFC components, which were extrapolated separately using past year growth in the existing base year. In the revised base year, Y-o-Y growth in Salary-wages of Centre and

States will be an indicator for extrapolating CE and Ownership of Dwelling (for Govt. provided houses) components of Centre and States, respectively. For Local bodies and other components, combined growth in 'wages and salaries' of Centre and States will be the indicator.

Finance Services

23. Significant methodological improvement has been undertaken for estimation of quarterly GVA of Financial Services sector with the aim to align the methodology with that of ANA. In the new series, method for compiling estimates for Deposit taking corporations, Insurance corporations, Other financial intermediaries (except Insurance corporations & pension funds & financial auxiliaries, and Central bank will undergo change:

- For Deposit taking corporations, against the existing practice computed based on stock position (Bank Deposit and Credit), new method will be based on quarterly FISIM growth. [*FISIM will be computed using the formula, FISIM = (LR-RR) × Average stock of loans + (RR-DR) × Average stock of deposits. LR and DR are Lending and Deposit Rates, respectively. RR or Reference Rate is the Harmonic mean of LR and DR*].

- For Other financial intermediaries (except Insurance corporations, Pension funds & Financial auxiliaries), FISIM method based on the quarterly information on top and middle layer Listed Non-Banking Financial Institutions (NBFIs) sourced from RBI will be used in place of the method based on the growth rate observed in Revenue from operations in the existing series. For other than NBFIs, growth rate in Revenue from operations of the concerned listed companies will be used as an indicator.

- For Insurance corporations, current price estimates of GVA will be compiled separately for Life Insurance (Public), Life Insurance (Private), Non-Life Insurance (Public) and Non-Life Insurance (Private). For public and private life insurance, Net Premium Earned Information and for Non-life insurance, Gross Direct Premium Underwritten Information will be used.

- For Central bank (RBI), quarterly information on Compensation of RBI Employees (CE) will be used as an indicator for estimation of quarterly GVA.

Product Taxes and Subsidies

24. The monthly information on various components of Product Taxes and Subsidies available from the GST portal, CGA website (for Centre) and CAG website (for State) will be used for the estimation of Product Taxes and Subsidies at current prices. Food subsidies which was earlier part of product subsidies, will be treated as transfer in kind in the revised base year. For GST, Net GST collection including Cess will be used in the new series in place of Gross GST collection and Compensation Cess in the existing series. For Sate excise, union excise, sales tax, custom duty, respective value will be used.

25. For estimation of quarterly product taxes at constant prices, volume extrapolation method will be used for different component of taxes separately using relevant volume indicators. For GST which constitutes major part of the product taxes, growth observed in the combined output of all industries at constant prices (excluding the output of Ownership of Dwelling; Public Administration and Defence; Electricity and output of General Government across all industries)

will be used as an indicator for volume extrapolation. For State excise, Union excise, Sales tax and Custom duty, the indicators will be IIP (Alcoholic Beverages), IIP (Manufacture of Coke and Refined Petroleum Products), Weighted IIP (Alcoholic beverages and Manufacture of Coke and Refined Petroleum Products) and Imports of goods at constant prices, respectively.

26.   For Product Subsidies, value of each subsidy components will be used to obtain current price estimates at quarterly level. This will include Fertilizer Subsidy and Other Subsidies by Centre and State Subsidies.

27.   In the existing base year, quarterly estimates of Product Subsidies at constant prices were compiled by deflating the current price estimates with the implicit price deflator of overall GVA. In the revised base year, constant price estimates of Fertilizer subsidies and Electricity subsidies which constitutes the major part of the product subsidies, will be compiled using volume extrapolation method. Quarterly consumption of NPK fertilizer and IIP (Electricity) will be used as volume indicators respectively for Fertilizer and Electricity subsidies.

IV. Revision in Expenditure-side Indicators

28.   In the revised base year, several refinements including improvements in the indicators and its granularity have been planned in the estimation of the expenditure components of quarterly GDP.

Private Final Consumption Expenditure (PFCE)

29.   In the revised series, due emphasis has been given to compile current price estimates at further granular level as well as incorporating quarterly indicators to obtain estimates of quarterly PFCE directly. The selected items are based on the list of the items proposed for ANA estimates of PFCE, which inter alia adopts COICOP 2018 classification. Results of HCES have been used to derive the quarter-wise share of benchmark PFCE for various items including food and non-food. Items are broadly categorised into four categories – food & non-food items, Items which involves Manufacturing process, Services Items, and Other specific items such as Electricity, Gas, Rail Transport, Purchase of vehicles, salt, spices, etc. considering the data sources available at quarterly level.
- Food & non-food items: Provisional (Annual) PFCE Estimates will be prepared at Constant Prices by computing GVO of respective items first followed by application of previous year PFCE to GVO ratio. While estimating PFCE of Agricultural/ Raw food items, such as wheat and rice, off-take of stock information from administrative sources will also be considered.
- Items involving manufacturing process: Constant price estimates of PFCE will be compiled by extrapolating the base year quarterly estimates using Quarterly retail trade GST growth or IIP growth rate of that item/item-group, if retail trade GST data do not become available.
- Services items: Quarterly Nominal price estimates of PFCE will be compiled by extrapolating the last year estimates using Quarterly GVO of respective items.
- Other specific items: Estimates for several items can be derived directly from the available administrative data. Growth of passenger vehicles namely, personal motor car, motor cycles, bicycles, etc will be derived from e-VAHAN data. Data on domestic consumption

of Electricity and Gas supply, passenger data of Railway transport, etc. maintained by respective organisations, will also be used.

Government Final Consumption Expenditure (GFCE)

30.   In the existing series, growth observed in the quarterly revenue expenditure of Central and State governments net of interest payments and subsidies, was used as an indicator for estimating the current price estimates of GFCE. In the new series, the same indicator will be continued. In addition, Food subsidy component will be the part of GFCE.

Gross Fixed Capital Formation (GFCF)

31.   In the revised base year, asset-wise indicators will be used at further disaggregated level. Estimates will be compiled at four asset categories (DOBS, Machinery & Equipment, Cultivable biological resources, and Intellectual Property Rights (IPP). For DOBS, GVO growth of Construction sector will be used at both current and constant prices. Machinery & Equipment asset-group cover four types of sub-assets - Transport Equipment, ICT Equipment, Other Machinery & Equipment, and Machinery & Equipment from Defence. For each of the first three sub assets, total domestically production value will be extrapolated using concerned item indices of IIP inflated by related WPI and adjusted with the net imports to compile the current price estimates. For Research & Development and Software components under IPP, which carries dominant weight, growth in GVO of related industries will be used as an indicator. Estimates for remaining asset and sub-asset will be based on the past year growth.

Change in Stock (CIS)

32.   In the new series, broad industry-wise stock estimates will be compiled based on stock position indicators from the data of quarterly financial results of listed companies and other administrative data. For estimation of CIS in Agriculture sector, growth in GVO net of Consumption will be used as an indicator.

Valuables

33.   Quarterly estimate of Valuables (at current prices) will be compiled using growth in Net imports of gold, silver, diamond etc. as indicator.

Export and Import

34.   In the new series, Principal commodity-wise Export and Import of Goods will be compiled. Services imports and exports will be sourced from RBI.

V. Use of Price Indices as Deflator or Inflator

Agriculture & allied sector

35.   In the existing series, current price estimates of QGVA for the Agriculture and Allied sector was obtained by inflating constant price estimates using a weighted Wholesale Price Index (WPI), with weights corresponding to crops, livestock products, inland and marine fish, industrial wood, and fodder. In the revised series, a methodological improvement will be introduced. In

place of a weighted WPI, individual crop items, livestock products, and fisheries and forestry products will be inflated using their respective WPIs. This refined approach will remove dependence on base-year WPI weights and will improve the precision of current price estimates.

Mining & Quarrying

36.   In the existing series, for deriving current price estimates of the Mining and Quarrying sector, a weighted WPI for Coal and Crude Petroleum & Natural Gas was applied. In the revised series, current price estimates will be compiled separately for different mineral groups by inflating constant price estimates with their corresponding WPIs. Accordingly, WPI (Coal), WPI (Crude Petroleum & Natural Gas), WPI (Metallic Minerals), and WPI (Other Minerals) will be used as inflators for coal, petroleum & natural gas, metallic minerals, and non-metallic minerals, respectively. In case of Minor Minerals, WPI (Other Minerals) will be used for inflation.

Manufacturing

37.   In the existing base year, constant price estimates of Manufacturing GVA was compiled using a single-deflation approach, with WPI of manufactured products as the deflator. In the revised base year, a major conceptual shift is planned by adoption of double-deflation method. Under this approach, constant price GVA will be estimated by separately deflating output and intermediate consumption using a composite output price index and a composite input price index, respectively. These indices are constructed from the concerned item-level WPI with weights derived from the latest available Annual Survey of Industries (ASI).

Electricity, Gas, Water Supply and Remediation

38.   In the existing base year, the current price estimates were derived by inflating the constant price estimates using WPI (Electricity). In the revised base year, WPI electricity and WPI Natural Gas will be used for obtaining current price estimates of Electricity and Gas. For Water supply and Remediation Services, constant price estimates will be derived through single extrapolation using an index of deflated output. CPI (water charges), CPI (G) and weighted WPI (basic iron and steel, casting of iron and steel, fabricated metal products, and plastic products) will be used to deflate output at current prices of Water supply, Remediation–Sewerage and Remediation–Recycling, respectively.

Construction

39.   In the existing base year, the current price estimates were derived by inflating using one Construction index reflecting WPI of various input items. In the revised base year, each of the input items (at constant prices) will be inflated using respective WPI/ Weighted WPI.

Non-Financial Services

40.   For estimation of the constant price estimates of quarterly GVA of majority of non-financial sectors viz. Trade, Hotel & Restaurants, Real Estate, IT, Professional Services and Other Services (Education, Health, Activities of Membership Organization, Recreation, Personal Services, Pvt. household with employed persons, etc.), single extrapolation method using index of deflated output will be used. The price indices which will be used for deflating the output at current prices for these sectors at quarterly level, are aligned with that of ANA.

41.   For Trade & Repair services, TTM adjusted WPI will be used for deflating the output at current prices in the new series. TTM weight will be derived based on Supply and Use Table for 2022-23. For Hotels & Restaurants, weighted CPI (Tea cups, Coffee cups, Cooked Meals purchased, Cooked snacks purchased, Hotel Lodging charges) will be used.

42.   For Transport services, relevant price indices, based on item-wise CPI/ weighted CPI will be used to obtain the nominal price estimates in the new series. For Road transport, weighted CPI of concerned items such as tyres & tubes, petrol, diesel, lubricant, conveyance expenses and fare will be used. For Water, Air and Rail passenger transport, respective CPI is planned. Rail freight estimates at constant prices will be inflated by rail freight index or previous year annual freight index.

43.   For Post & Courier service and Recording, Publishing & Broadcasting, relevant CPI at sub-sectoral level will be used for deflating the output at current prices.

44.   For Real Estate, IT, Professional Services, against the overall WPI/ relevant CPI used for deflating the nominal price estimates in the existing series, it is planned to use relevant CPI/ weighted CPI of various services items at respective Industry and Institutional sectoral level. For Ownership of Dwelling, CPI (Housing-Rural) and CPI (Housing-Urban) will be the deflator for Gross Rental for rural and urban segment respectively.

45.   For Public Administration and Defence, compensation of Employees and ownership of Dwelling (for Govt. provided houses) components will be deflated using CPI (IW).

46.   For other services, relevant CPI/ weighted CPI will be used at respective Industry and Institutional sectoral level. For ex. CPI (education), CPI (health), CPI (recreation), CPI (Barber, Beautician, Spas, etc.; Washer-man, Laundry, Ironing, Dry cleaning, Dyeing of clothes, Tailor; Grinding/husking charges, etc; Other consumer services excluding conveyance; etc), CPI (Domestic Helper/Cook, Sweeper, Watchman/Security Guard, Driver) for estimates of Education, Health, Recreation, Personal Services, Other Services respectively.

Financial services

47.   In the existing base year, Implicit Price Deflator of Non-financial services sector was used for deflation of GVA of Financial Services sector at current prices. In the revised base year, single extrapolation method using CPI (G) as deflator, will be used at different sub-sectoral level for the estimation of GVA of Financial services at constant prices.

Private Final Consumption Expenditure (PFCE)

48.   In the existing base year, aggregate PFCE at current prices were deflated using combined CPI and WPI. In the revised base year, the disaggregated item-level deflator will be considered which is in alignment with the ANA.

Government Final Consumption Expenditure (GFCE)

49.   In the existing base year, weighted CPI and WPI was used as deflator for estimation of quarterly GFCE at constant prices. In the revised base year, CPI (IW) will be used to deflate the Net Value Added component and weighted CPI and WPI will be the deflator for Net Purchase of Commodities. For the Food subsidy component, volume extrapolation method will be used using foodgrain offtake data under various schemes.

Gross Fixed Capital Formation (GFCF)

50.   In the existing base year, composite WPI of Transport and Machinery equipment was used to deflate current price estimates of Machinery & Equipment and Software. In the new series, current price estimates for various sub-assets of Machinery & Equipment will be deflated by WPI at granular level. For transport equipment, ICT equipment and other machinery & equipment, respective WPI (Other Transport Equipment), Weighted WPI (Manufacture of Computer and Peripheral Equipment and Manufacture of Communication equipment) and Weighted WPI (Manufacture of Electrical Equipment and Manufacture of Machinery & Equipment) will be used as deflator. Similarly, for various products under IPP assets, concerned CPI at granular level will be used. For R&D, Computer software, mineral exploration, entertainment, other IPP products, weighted average of CPI(IW) and CPI(U), CPI (Urban), CPI (General), CPI (Recreation) and CPI (Urban) respectively will be used.

Change in Stock (CIS)

51.   CIS at current prices will be deflated using the relevant industry-wise WPI or IPD to obtain the corresponding constant price estimates.

Valuables

52.   In the revised series, CPI for Gold, Silver and Other Ornaments will be used as deflator against the WPI for Gold and Silver in the existing base year.

Exports and Imports

53.   In the existing base year, Export and Import of goods and services were deflated by Unit Value Index (UVI) Export and Import respectively. In the revised base year, separate deflators are planned for goods and services at granular level. Export and Import of goods at Principal commodity level will be deflated by respective UVI. Export value of services at current prices will be deflated by IPD of relevant services industries. Import of major services namely, Transport; Travel; Telecommunications, computer, and information services; Other Business Services, will be deflated by PPI of major trading partners adjusted for exchange rate. For remaining items, IPD of relevant services industries will be used.

Comments/feedback are invited on the methodological improvement in Quarterly National Accounts outlined in the preceding paras. Comments/feedback may be shared on the email ID- ddg4.nad@mospi.gov.in.

54.   Under the ACNAS, a Sub-Committee on Regional Accounts with Prof. Ravindra H. Dholakia, (Retd.) Professor, IIM Ahmedabad as chairman and members from State Governments, Research Institutions, Reserve Bank of India (RBI), Academia and NITI Aayog, has been constituted to review concepts, methodology and new data sources for the compilation of State Domestic Product (SDP) and District Domestic Product (DDP). In alignment with the GDP at National level, the base year for GSDP will also be revised by States/UTs to ensure more accurate, consistent and comparable estimates of the States' economic performance over time.

55.   As per the System of National Accounts (SNA), 'Institutional Sector approach' is followed for compilation of National Accounts. As per SNA, there are five main institutional sectors that comprise the entire economy. These sectors are:

A. Non-Financial Private Corporations (NFPC) Sector
B. Financial Corporations (FC) Sector
C. General Government (GG) Sector
D. Household Sector
E. Non-Profit Institutions Serving Household (NPISH) Sector (In case of India, estimates for NPISH are included in Household Sector)

56.   Gross Domestic Product (GDP) is measured using three standard approaches: Production Approach, Income Approach, and Expenditure Approach and India is no exception. Under the production approach, GDP at market prices is estimated as the sum of value added generated by all economic activities within the country's territory, i.e., output at basic prices *minus* intermediate consumption *plus* net taxes on products. The income approach measures GDP as the sum of compensation of employees, gross operating surplus, and gross mixed income, along with net taxes on product and other taxes on production, which is mainly applied to non-market producers particularly the government sector.

The **expenditure approach** presents GDP from the demand side and it is composed of:
(i) Private Final Consumption Expenditure (PFCE),
(ii) Government Final Consumption Expenditure (GFCE),
(iii) Gross Fixed Capital Formation (GFCF),
(iv) Change in Stocks (CIS), and
(v) Acquisition less disposals of valuables
(vi) Net Exports of Goods and Services.

57.   At the State level, GSDP estimates are compiled and published primarily using the production and income approaches. None of the States compile all components of the GDP following expenditure approach due to paucity of required data at state level. At present, only GFCF is being compiled by some of the States and that too largely limited to the public sector.

Scope of this concept note is restricted only to production side estimates of GSDP with the new base year.

58.   In line with GDP, for GSDP estimation also, the whole economy is divided into 11 broad industries (i) Agriculture & Allied, (ii)Mining, (iii)Manufacturing, (iv) Electricity, Gas, Water Supply & Other Utility Services, (v) Construction, (vi)Trade, Repair, Hotel & Restaurants, (vii) Transport, Storage, Communication & Services related to Broadcasting (viii) Financial Services (ix) Real Estate, Ownership of Dwelling & Professional Services (x) Public Administration and Defence, and (xi)Other Services. Industry-wise estimates are compiled for each institutional sector and their compilation methodology for institutional sector remains the same across industries except for the Household Sector. In case of the Household Sector, estimates for Agriculture, Construction & Ownership of Dwellings industries are compiled following a methodology which is different from the one used in other industries. Methodological improvements made in the institutional sectors mentioned above are summarized below.

I. Non-Financial Private Corporate Sector

59.   In the ongoing series, all-India estimates for different industries in respect of the Non-Financial Private Corporate sector are allocated among states based on either state specific indicators or in the ratios fixed during the base year. With a view to make regional estimates more robust and also to introduce an element of dynamism in the estimates, State-wise Ratio of outward supply from GST data will be applied over all-India estimates of Non-Financial Private Corporate Sector for Non-Financial Services to arrive at state level estimates subject to availability of GST data. In the present series, estimates for **Construction industries** pertaining to Non-Financial Private Corporate Sector (NFPC) are allocated on the basis of a composite indicator using State-wise consumption of cement and iron & steel. Now in the new series, the HSN/SAC-wise GST data will be used to derive State-wise ratios using outward Supplies/taxable values of all the construction related items. These ratios will be used to allocate all-India GVA of NFPC among States/UTs.

In cases where GST data is not available, suitable industry-specific indicators will be used as alternative allocation. List of industry specific indicators is given at **Annexure-I.**

II. General Government Sector

60.   The General government sector comprises the Central Government, State Governments, Local Bodies, and Autonomous Institutions. Net value added in respect of State governments, local bodies and state autonomous bodies for the respective states are estimated directly following the income approach. For allocation of the Net Value Added i.e. compensation of employees for the Central Government among States, information on number of Central Government employees working in each state as per publication titled "Census of Central Government Employees" of Directorate General of Employment & Training, Ministry of Labour & Employment, Government of India is being used in ongoing 2011-12 series. This publication was last released in April, 2014. However, for the new series, DDO code-wise (location based) PFMS data in respect of each object head from the office of Comptroller General of Accounts (CGA) will be used for compilation of State-wise net value added from central government.

III. Financial Corporations Sector

61.   Unlike, all India GVA, the GSVA estimates for this sector are prepared separately for

    i.   **Central Bank (Banking Department of RBI)**
    ii.   **Deposit Taking Corporations/Commercial Banks**
    iii.   **Non-banking Financial Corporations**
    iv.   **Non-banking Financial Companies**
    v.   **Post Office Saving Banks**
    vi.   **Co-operative Credit Societies**
    vii.   **Insurance Corporations**
- **Life Insurance**
- **Postal Life Insurance (PLI)**
- **Non-Life Insurance**
- **Employees State Insurance Corporation (ESIC)**

    viii.   **Employees' Provident Fund Organization (EPFO)**
    ix.   **Money Lender**

62.   In the new series, methodological improvements will be made in deposit-taking corporations sub-sector which includes all schedule commercial banks and life insurance sub-sector by adopting improved indicators for allocation. In the case of money lenders, the allocation of GVA will be updated using the latest available survey data.

63.   In the new series, distribution of operating surplus of Scheduled Commercial Banks to the States/UTs will be done on the basis of State-wise Sum of Credit Amount Outstanding and Deposits of Scheduled Commercial Banks, as FISIM (which is the major part of output of scheduled commercial bank) is estimated both on credit and deposit. In the present series Operating Surplus (OS) is allocated to States and Union Territories based on the Credit Amount Outstanding only.

64.   In the present series GVA from Life Insurance comprising CE & Rent and OS are distributed based on the number of employees of Life Insurance Corporation (LIC) of India and Cumulative Sum Assured of LIC of India respectively. In the series, State-wise Individual New Business (Life) Underwritten (for all the life insurance companies/corporations) sourced from the Annual Handbook of Insurance Regulatory and Development (IRDA) will be used as a new indicator for allocating the GVA of the Life Insurance sector.

IV. Household Sector, Quasi-Corporations and Non-Profit Institutions Serving Household (NPISH) Sector (Except Agriculture, Construction and Ownership of Dwellings)

65.   In the current series, GVA estimates in respect of unincorporated segment of manufacturing and services sectors are compiled indirectly through Effective Labour Input Method (ELI Method) using the benchmark-indicator procedure. In this method, benchmark GVA estimates were prepared at detailed activity level for base year using estimated workforce (i.e. total of principal and subsidiary workers engaged in an activity) from Employment and

Unemployment Survey (EUS) 2011-12 and value added per worker (VAPW) in corresponding activity using Enterprise Survey (ES) 2010-11. For subsequent years, base year GVA estimates are extrapolated using appropriate indicators for a concerned economic activity.

66.   In the new series, use of industry-wise and state-wise GVA from ASUSE / workforce estimates from PLFS to allocate all India GVA among States is under consideration. Given that both ASUSE and PLFS now provide annual results, the State-wise GVA estimates for the unincorporated sector will henceforth be generated annually in the new series, replacing the previous indicator-based allocation approach.

V. Agriculture and Allied Sector

67.   For this sector both production and price data used for compilation of GVA come from respective states/UTs. Hence the current broad approach (production approach) of compiling state-wise GVA from Agriculture and Allied sector will continue. However, the methodological improvement and use of new data sources recommended by the ACNAS which will also bring improvement in GSDP estimates are listed below:

68.   The sector comprises four sub-sectors viz., (i) Crops (ii) Livestock (iii) Forestry and Logging (iv) Fishing and Aquaculture. The estimation procedure primarily relies on the direct (bottom-up) approach. The major improvement proposed in estimation of this sector in the new series are summarized below:

i.   Updation of coverage of other Crops:

69.   Based on the availability of area, production and price data from States/UTs, the crop list for GVO estimation is being rationalized by adding new crops as individual items and combining crops with inadequate data under the "other" category.

ii.   Use of updated and dynamic rates and ratio:

70.   Updated productivity rates from a study titled "A Study on Productivity of Fodder and Grass" conducted by the Indian Grassland and Fodder Research Institute (IGFRI), Jhansi, in July 2021 will be used for estimation of fodder and grass output in crop sub-sector. State-wise information on expenditure towards the purchase of goods and services (including repairs and maintenance of fixed assets) as well as total revenue from forestry available at central and State government budget documents will be used to compile State-wise input–output ratios for the forestry sector on an annual basis replacing the current fixed rate of 16.2 percent of the total output in the forestry sector applied uniformly across States. Similarly, for the new series, updated State-wise input-output ratio (for major fish producing States) will be used both for marine fisheries and inland fisheries based on the study conducted by Central Marine Fisheries Research Institute (CMFRI), Kochi and Central Inland Fisheries Research Institute (CIFRI), Barrackpore, Kolkata respectively in place of fixed all-India input rate for all the states. For the States not covered under the purview of these studies, national average input rates will be used in the new series.

iii. Improvement in estimation of production of industrial wood from Trees Outside Forests (TOF):

71.   In the 2011–12 series, Production of industrial wood from TOF is estimated using the biennial publication - India State Forest Report (ISFR) published by Forest Survey of India (FSI). For the intermittent years, all-India growth rate of growing stock of TOF is applied across States to arrive at production estimates. Source of production data in new series will remain the same. However, for intermittent years, State-wise growth rate of growing stock of TOF will be used to arrive at production estimates, instead of the current practice of using all-India growth rate.

iv. Bifurcation of feed of livestock between crop and livestock sector:

72.   The value of feed of livestock as an input was distributed among crop and livestock sub-sectors in 2011-12 series considering the number of adult male cattle and adult male buffalo population only from Livestock Census 2012 and 2019 for crop sub-sector and rest for the livestock sub-sector.

73.   However, population of adult male buffalo and adult male cattle based on their use is available in Livestock Census report as follows: (i) Used for breeding only; (ii) Used for agriculture only; (iii) Used for both agriculture and breeding; (iv) Used for bullock cart/farm operations; and (v) Others.

74.   For better coverage of feed consumption across livestock and crop sub-sectors in the new series, further bifurcation of adult male cattle and buffalo population in crop and livestock sub-sectors will be done as follows:

$$For\ livestock\ sector:\ category\,(i) + category\,(iii) * \frac{category\,(i)}{sum\ of\ categories\,(i)and\,(ii)}$$

$$For\ crop\ sector: category\,(ii) + category\,(iv) + category\,(v) + category\,(iii) * \frac{category\,(ii)}{sum\ of\ categories\,(i)and\,(ii)}$$

VI. Construction Sector

75.   The Gross Value Added from Construction comprises of the following components: i) Dwellings, Other Buildings & Structures (DOBS) ii) Construction in plantations iii) Mineral explorations. GVA of Dwellings, Other Buildings & Structures further consists of two components namely (i) pucca and (ii) kutcha. The former continues to be measured through the commodity flow approach, and the latter through the expenditure approach. However, in addition to these estimates, expenditure on construction activity in plantations and mineral explorations is separately estimated and included in GVA from construction.

76.   The GVA of household sector derived as residual in the commodity flow approach at national level is further bifurcated into Rural Residential buildings (RRB), Urban Residential Buildings (URB), Non-Residential Buildings and Other Construction Works (NRBOCW) and NPISH. State/UT-wise results of AIDIS 2019 duly adjusted for growth in number of dwellings

and price changes of materials used in urban and rural construction (for estimating RRB and URB at current prices) and combined growth of GVO of all industries excluding construction (for estimating NRBOCW at current prices) are proposed to be used. For other households, GST data will be used to estimate the availability of basic input materials in the State/UT (using HSN-wise outward supplies in case of GSTR-1). These data will be used to arrive at State/UT-wise ratios of availability of construction material and these ratios will then be utilized to allocate GVA of NPISH among States/UTs.

77.   In the new series, the estimation of GVA from Construction related to Plantation Activities (which is considered Kutcha Construction) will be made using year-wise increment in plantation crop-wise area under plantation provided by DES/M/o Agriculture & Farmer's Welfare and plantation crop-wise cost structure provided by NABARD. The plantation/ crop-wise cost structure provided by NABARD has been made available separately for each State/Ut for each FY and hence this dynamic cost structure will be used for estimation of GVA from Construction related to Plantation Activities.

VII. Estimation of GSVA for Ownership of Dwellings (Urban and Rural)

78.   In the previous series, Gross State Value Added (GSVA) for ownership of dwellings in urban areas was estimated as the gross rental value comprising both actual rents paid and imputed rents for owned dwellings *less the cost of repairs and maintenance*. For rural areas, the user cost approach was applied to estimate the value of housing services.

79.   The new series continues to follow the same methodological framework, with updates reflecting the most recent data on dwellings and rents per dwelling. For urban areas, the number of dwellings will be estimated using Ministry of Health & Family Welfare (MoHFW) projected population figures along with average household size data from the *Household Consumer Expenditure Survey (HCES) 2022–23* and the average rent per dwelling will be derived from the *HCES 2022–23*. Once data from the next Population Census become available, the estimates for the number of dwellings will be updated accordingly.

VIII. Supra Regional Sector

80.   Certain economic activities (mostly public part) transcend State boundaries and thus their economic contribution cannot be assigned to any one state. Such activities are Railways, Communications and Services Related to Broadcasting, Financial Services, Central Govt. popularly known as the supra-regional activities.

81.   **Changes proposed in the Supra Regional Sector:** Central Government part and Financial services have already been discussed under General Government and Financial Corporations Institutional sector. No major changes will be there in compilation of GSVA from Railways in the new series.

82. **Communication and Services Related to Broadcasting Sector (Public Part)**

Under the Communication and Services Related to Broadcasting Sector, we cover 1 Departmental Enterprise (DE), namely the Department of Posts and 7 Non-Departmental Enterprises (NDEs), which are:

    a. Post
    b. Bharat Sanchar Nigam Limited (BSNL)
    c. Power Grid Teleservices Ltd. (Now Power Tel)
    d. Bharat Broadband Network Limited (BBNL)
    e. RailTel Corporation
    f. Film Development Corporations
    g. Mahanagar Telephone Nigam Limited (MTNL)
    h. Prasar Bharati (Broadcasting)

83. In the present series, State-wise Gross Value Added (GVA) for BBNL, RailTel Corporation, Mahanagar Telephone Nigam Limited (MTNL), Film Development Corporations is directly available on a State-wise basis through an analysis of their respective annual reports. Accordingly, no change in the existing methodology is proposed for these entities.

84. For the estimation of State-wise GVA of Post, BSNL, Power Grid Teleservices Ltd. (Now PowerTel) and Prasar Bharati, efforts have been made to minimize the extent of allocation and to obtain direct State-wise information for calculation of GVA using production approach/income approach from the respective organizations.

85. **Post:** In the current series, State-wise GVA of the Post is estimated as the sum of apportioned Compensation of Employees (CE), Depreciation and Rent. The all-India CE and Depreciation of Post are allocated across States/UTs using State-wise wages and salaries data provided by the Department of Posts, while the all-India Rent of Post is distributed based on the number of post offices in each State. In the new series, for Compensation of Employees (CE), which has 97% share in all-India GVA of Post, State-wise data directly available from the Controller General of Accounts (CGA) will be used.

86. **BSNL**: In the present series components of GVA (CE + Operating surplus (OS)) is distributed among states using relevant indicators obtained from BSNL. In the new series, State-wise GVA of BSNL will be directly calculated based on information (State-wise output and intermediate consumption) provided by BSNL.

87. **Powergrid Teleservices Ltd. (Now PowerTel):** Power Grid Teleservices Limited had started its operation in the year 2022-23. State-wise GVA of PowerGrid Teleservices Ltd. (Now PowerTel) will be computed directly using information on output and intermediate consumption provided by the company.

IX. Consumption of Fixed capital (CFC)

88.   Estimates of consumption of fixed capital are obtained at National Level using Perpetual Inventory Method (PIM). This is a method of constructing estimates of CFC (and the net fixed capital stock) from a time series of gross fixed capital formation (GFCF). The life of assets will be revised in the new series. In respect of General Government (GG) and Departmental Enterprises (DE), Gross Fixed Capital Formation is estimated at State/UT Level from State Budget Documents and State-wise GFCF by Central Government will be compiled from PFMS data provided by CGA. In current series, value of stock of fixed assets is being compiled available for DE(Irrigation), DE(Manufacturing), DE(Electricity) and GG (Water Supply). In respect of Non-Departmental Enterprises, closing stock of fixed assets is available from analysis of Annual Reports. Asset-wise stock of capital assets is being reported in Survey of Unincorporated Sector Enterprises. However, in case of Private Corporations, except for Manufacturing sector, information on State/UT-wise capital stock / GFCF not available. Hence industry wise GSVA will be used to allocate CFC.

89.   Blades Method[1] will be used for compilation of value of stock of fixed assets for the base year 2022-23 in respect of General Government and Departmental Enterprises except for the industries where the value of stock is currently available wherein PIM will be implemented.

90.   For Non-Departmental Enterprises, from Analysis of State NDE Reports and using DPE publication for Central NDEs, the value of stock will be estimated for base year and PIM will be implemented in subsequent years.

91.   For Quasi-Corporations and Household Sector: Using Blades Method and results of ASUSE, value of stock of assets will be estimated in base year in respect of industries covered in ASUSE and PIM will be implemented in subsequent years.

X. Allocation of Product Taxes and Product Subsidies among States/UTs

92.   The indicators used for allocating various product taxes and subsidies among States have been strengthened. The total GST reported in the Budget documents comprising CGST, SGST, IGST, and Cess will be allocated to States and Union Territories based on their respective shares in tax collections, as reflected in data available from the GST portal.

Comments/feedback are invited on the methodological improvement in Sub-national Accounts outlined in the preceding paras. Comments/feedback may be shared on the email ID- ddg2.nad@mospi.gov.in.

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[1] Derek Blades (2015) "A short-cut method of estimating capital stocks: when can it be used and how well does it work?" Review of Income and Wealth, Series 61, Number 2, 2015

Table: Industry-wise Allocation of Gross Value Added (GVA) of the Non-Financial Private Corporate Sector (NFPC) among States/UTs: Existing and New Indicators

S.No.	Activity	Indicator - existing	New Indicator
1	Manufacturing	State wise GVA from ASI	No Change in the existing indicator
2	Trade & Repair Services	Sales tax growth (Trade) now estimated using CAGR	State-wise share of GST collection
2	Hotel & Restaurant	State-wise Domestic + Foreign Tourist proportions	Based on the report titled 'Tourism Satellite Account' conducted in 2015-16 by National Council of Applied Economic Research (NCAER), State-wise expenditure by domestic and international tourist will be used along with number of domestic and international tourist for allocation of GVA.
3	Road Transport	Growth in registered commercial vehicles provided by States/UTs, adjusted for price effect	State-wise share of number of vehicles on road or State-wise number of registered vehicles will be used for allocating GVA of road transport across States.
4	Water Transport	Cargo movement along navigable length of waterways + cargo handled at major and minor ports State-wise share used as indicator	National level GVA first bifurcated into two components based on cargo movement along navigable length of waterways and cargo handled at major and minor ports. Then these two components of GVA will be allocated across States based on share of the cargo movement along navigable length of waterways and cargo handled at major and minor ports respectively.
5	Air Transport	State-wise share of airline passengers	State-wise passenger and cargo handled at different airports will be used for allocation of GVA with weights of 0.95 and 0.05 respectively.
6	Services incidental to transport	Combined growth of (Road + Air + Water)	State-wise combined GVA share of (Road + Air + Water)
7	Storage	Base year proportions worked out using Labour Input Method	Number of storage units in each State along with their corresponding storage capacities provided by State/UT DES will be used.
8	Courier Services	State share of Postal GVA (Dept of Post)	State-wise postal GVA share.
9	Cable, Recording & Broadcasting Services	State share of population having television (Taken from Census)	A three-year moving average of workforce estimates from PLFS covering all types of ownership will be used

S.No.	Activity	Indicator - existing	New Indicator
10	Telecommunication	No. of telephone connections (from Department of Telecommunication)	State-wise number of telephone connections will be used
11	Real Estate, Renting and Professional services (Excl R&D)	Base year proportions (based on Labour input method)	Workforce estimates from PLFS covering all types of ownership will be used
12	Computer and Information Related Services	State wise export of software from Annual Report of Software Technology Park in India (including R&D)	No Change in the existing indicator
13	Education	Base year proportions worked out using Labour Input Method	Workforce estimates from PLFS will be used
14	Health	Base year proportions worked out using Labour Input Method	Workforce estimates from PLFS will be used
15	Other Services	Base year proportions worked out using Labour Input Method	Workforce estimates from PLFS will be used

Note: These new indicators mentioned in the table will be used in case of non-receipt of requisite GSTN data.

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