

Natural Resource Accounting – Concept and implementation in India - *with emphasis on preparation of Asset Accounts on Mineral & Energy Resources in the States*

(Short term Goal No. 1)

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Virtual presentation to the Chief Secretaries

Government Accounting Standards
Advisory Board, CAG of India

10 September 2021



Natural Resource Accounting (NRA) – Idea, need and importance

Economic Accounting

- ✓ Conventional accounting captures data only of the measurable economic activity.
- ✓ Doesn't weigh environmental inputs
- ✓ Resources taken for granted



Environmental Statistics

- ✓ Often developed with particular question or objective
- ✓ Do not cater to larger picture
- ✓ Difficult to inter-relate with other datasets

“Measurement of a resource leads to its better Management.”

Eco-Environmental Accounting

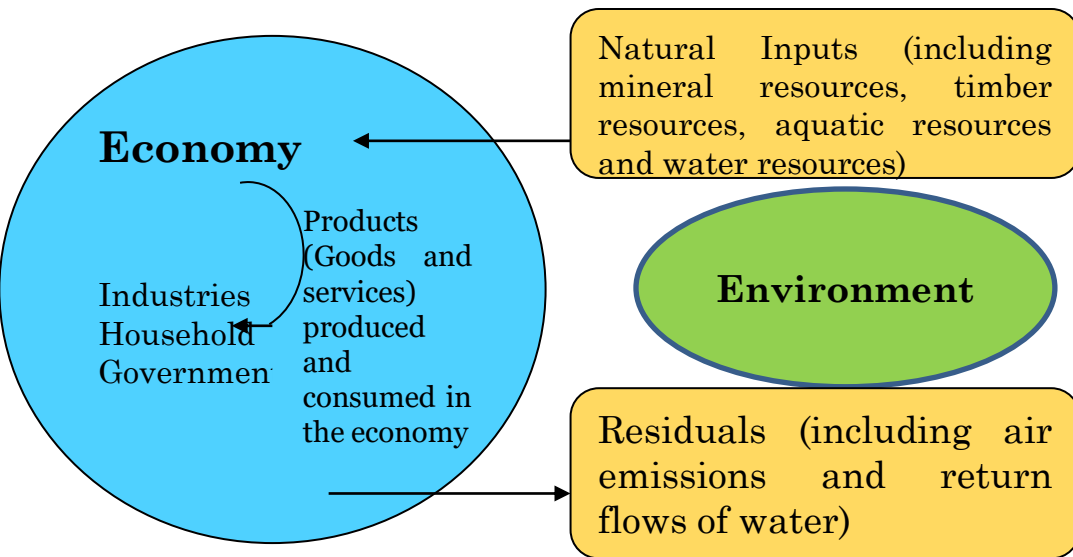
- ✓ Intends to capture the intimate interplay between various components of the natural environment and the economy
- ✓ Can connect to other datasets to provide invaluable information on the larger picture connecting environment with the economy
- ✓ Able to help quantify the adverse impact on environment due to economic development and aid to sustainable growth

Natural Resource Accounting

Natural Resource Accounting (NRA) – Concept

- ✓ Mankind in its quest for rapid economic development has manipulated nature to serve its economic interests and in the process harmed nature. **This has resulted in environmental degradation** – leading to climate change, extreme weather conditions and frequent natural disasters
- ✓ Importance of judicious use of resources – their controlled usage and sustainability for future generations. **Gave birth to the idea of Sustainable Development (SD)**

Accounting of Natural Resources – One of the most crucial element of SD is that it provides an outline of resource bases, pace of usage with an eye on their sustainability and embeds environmental aspects into the economic indices



Broadly contains 3 steps: 1) Physical Accounting which involves listing as the very first step. 2) Monetary Valuation and 3) Integration with Economic Accounting.

The idea is to quantify the adverse impact of economic development on environment and adjust/reduce it from GDP to arrive at Green GDP, essentially signifying impact of economic development on environment and sustainable growth.

Natural Resource Accounting

International Accords – our obligations

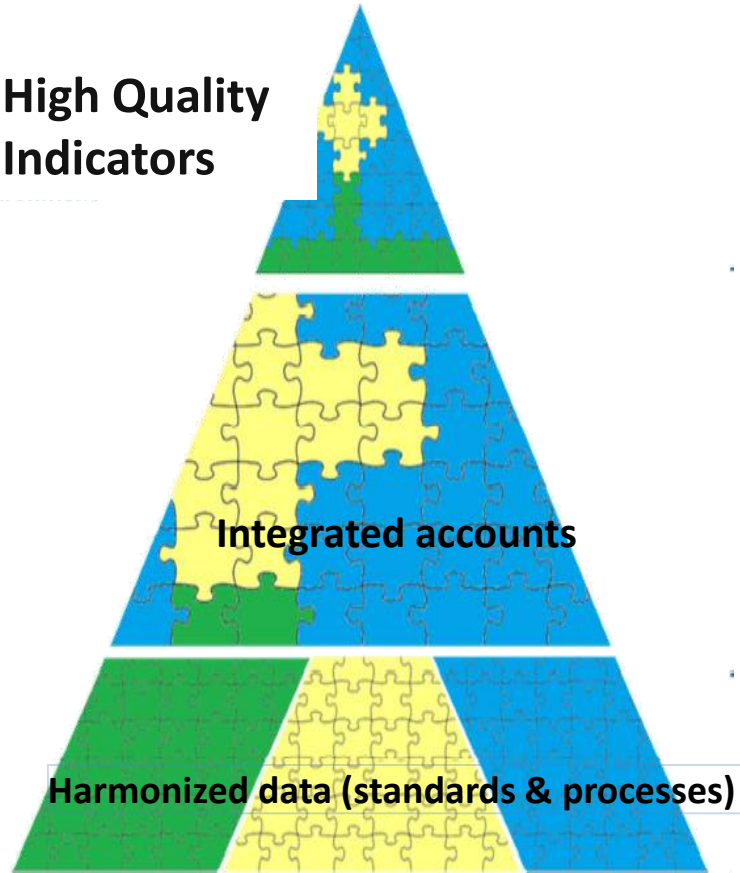
- Earth Summit at Rio 1992
- United Nations Framework Convention on Climate Change (UNFCCC) – 1992
- Kyoto Protocol – 1997/2005
- Marrakech Accord – 2001
- Earth Summit at SA 2002
- Kyoto Protocol comes into force – 2005
- Start of five year commitment period on Kyoto Protocol – 2008
- Follow up action plan on Kyoto Protocol (Bali Action Plan) – 2009
- Convention of parties – Copenhagen Accord – 2009
- Rio +20 – 2012
- SEEA (CF) – adopted in 2012
- ✓ GOI – signatory (25th September 2016) to UN General Assembly resolution titled, “transforming our world; the 2030 agenda for sustainable development”
- ✓ SDGs consisting of 17 goals and 169 associated targets.
- ✓ Four of 17 goals directly relate to natural resource accounting and sustainability of these resources.
- ✓ There are 25 environment related targets which are required to be monitored.
- ✓ Particular attention on Target no 15.9 related with accounts.

Agenda 21,
Rio +20, SDGs: *Integrate
nature into decision
making!!!*

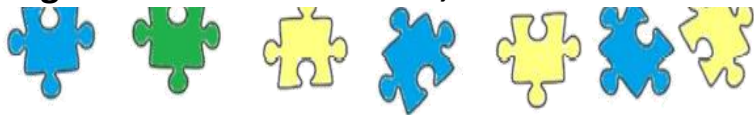
Natural Resource Accounting

NRA – Imperative – summing up

High Quality Indicators



Fragmented environmental, economic & social data



- **Interrelation between economy and environment-** Quantifies the non-renewal damage to the environmental resources and assists in determination of development in real terms.
- **Aid to policy framing** –sound database – to help policy makers to understand the potential impact of their decisions
- **Managing SDGs** - four of 17 goals **directly** related to sustainability of natural resources
- **Combating Climate change** – Asset and flow accounts have been recognized as a useful framework for monitoring, measuring and analyzing climate change.
- **International commitments**
 - SDGs
 - Become part of the group of elite countries in generating Asset Accounts

Natural Resource Accounting

SEEA – CF and suggested implementation strategy

- SEEA – CF – latest international framework for economic-environmental accounting
- Flexible
- Country specific needs embedded



Stage 1

- **Asset Account for individual asset in physical and monetary terms showing stock changes**

Stage 2

- Supply and use tables in physical and monetary terms showing flow of inputs, products and residuals

Stage 3

- A sequence of economic accounts highlighting depletion adjusted economic aggregates, and

Stage 4

- Functional accounts which records transactions and other information about economic activities undertaken for environmental purposes

Why SEEA

- ✓ **Relevance**
- ✓ **Consistency and reliability**
- ✓ **Efficiency**

Natural Resource Accounting

Asset Accounts – basic format

Opening stock of environmental asset

Growth in stock

Discoveries of new stock

Upward reappraisals

Reclassifications

Total addition stock

Reduction of stock

Extractions

Normal loss of stock

Catastrophic losses

Downward reappraisals

Reclassification

Total reduction in stock

Revaluation of the stock*

Closing stock of environmental assets

Scope for

- Incl Country specific needs
- Flexibility
- Reconciliation

NRA – how are we involved

International Association of Supreme Audit Institutions (INTOSAI)- Founded in 1953 – autonomous, independent and non-political organisation

- Provides institutional framework for Supreme Audit Institutions

Working group on Environmental Auditing (WGEA) – under International Association of Supreme Audit Institutions (INTOSAI)Suggested (2010)

Where NRA is not developed

- ✓ To Assist the Government in developing the NRA
- ✓ Identifying challenges in applying environmental accounting
- ✓ Recommending strategies to overcoming challenges
- ✓ Identifying best practices in NRA

CAG

Constitutional mandate under Article 150 to advice on forms of accounts

Section 23 of CAG's DPC Act- Guidelines for general principles for Govt Accounting

GASAB

- Mandated to formulate Government Accounting Standards and other pronouncements with a view to improve Governmental accounting and financial reporting
- To enhance the quality of decision-making and public accountability.

NRA – how other countries have progressed

- Different countries have adopted different approach based on their country specific need– flexibility allowed in SEEA – CF
- Major thrust on mineral and energy resources – non-renewable resources
- Flexibility adopted – country specific needs (selection of resources, incremental processes)
 - Australia – stressed on Water Accounts, Philippines – selective minerals
- Bigger countries generating Accounts at national and provincial levels
- Developed countries have reached to the level of generating Green GDP

*Some specific **instances** on
compilation of Natural Resource
Asset Accounts in countries
(June 2019)*

NRA – Efforts in India

MoSPI

8 Studies

(mostly on quality aspect)

Expert Committee

(Green National Accounts in India- A Framework)

EnviStats India 2018-19

Physical assets (compilation of info available with various agencies/ministries)

NCAVES

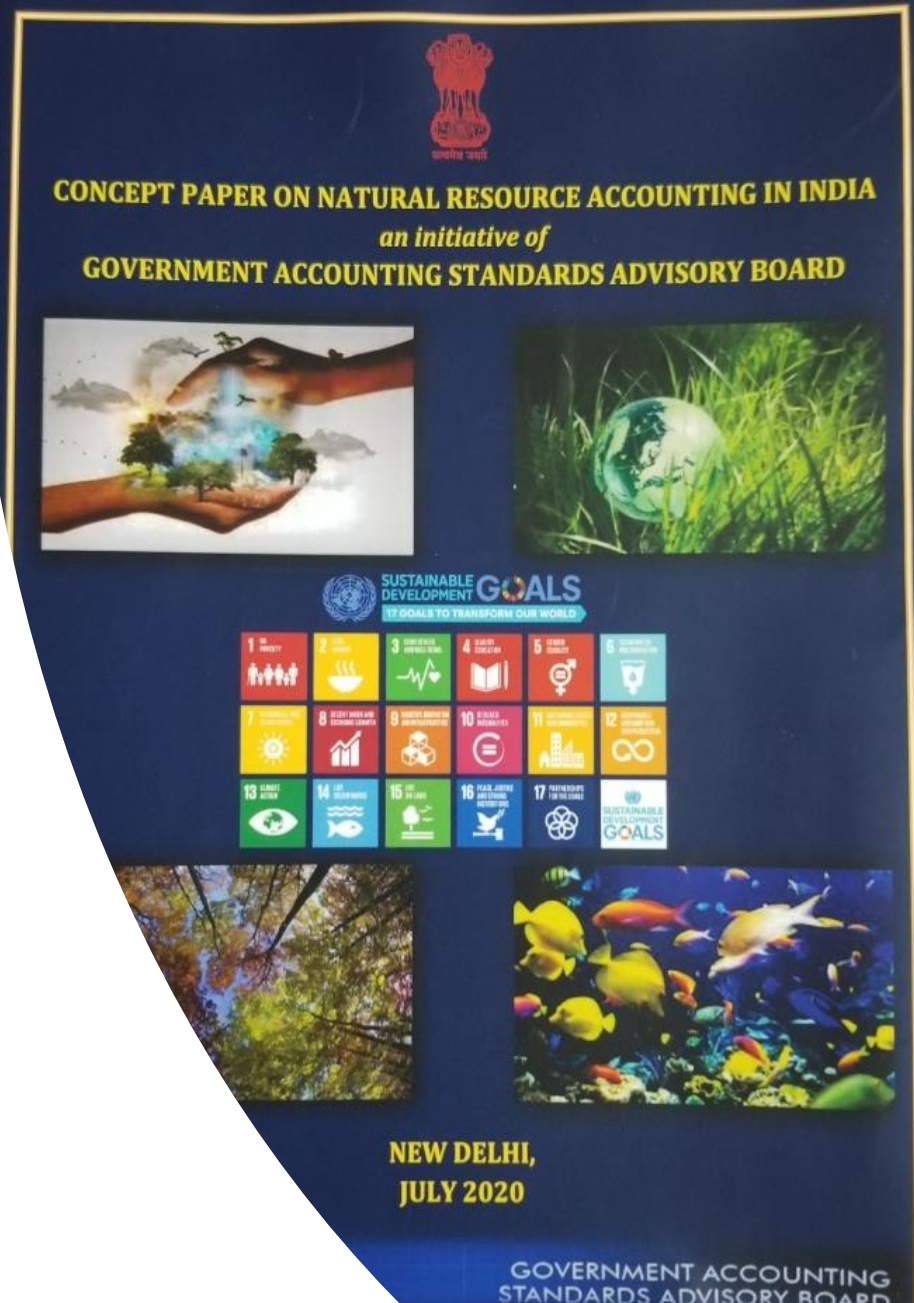
Being implemented in the State of Karnataka in collaboration with UN

CAG/GASAB

- Decision in 34th Board Meeting
- Work initiated in 2019
- A Concept Paper prepared in 2020
- Specific road map for implementation of NRA in India
- Action Plans divided into three-pronged goals (2020-2030)
- An exercise to handhold the GoI/States in implementing NRA
- As an aid to good governance

The Paper

- A Concept Paper on Natural Resource Accounting was prepared by GASAB Secretariat
- Paper released on 28 July 2020 by MoS, Ministry of Environment, Forest & Climate Change, GoI
- Copy [endorsed](#) to the Hon'ble Prime Minister of India
- PMO [congratulated](#) GASAB on embarking on such a difficult topic



Stakeholder Consultations

- Four drafts (Nov'19, Jan'20, April'20 and July'20) – to ensure optimum consultation
- **Paper shared and inputs sought**
 - Delhi University, TERI, ICAI, MoSPI, MoMines, MoEFCC, Jal Shakti and DoLR
 - All the State Governments (Finance Secretaries) informed about the endeavour
 - Senior management of CAG, all GASAB Board members
- **Paper peer reviewed**
 - by iCED and DG, E&SD Audit
 - Suggestions/comments incorporated before finalisation

Creation of NRA Cells

NRA Cell in the States

- Jointly by the AsG Audit and A&E Offices with representation from the State Government (departments of mines, land records, water resources, environment forests and climate change), statistics department
- Already functional in 20 States. Remaining AsG co-ordinating with the State Governments

NRA Cell created in GASAB Hq

- Headed by DAI & Chairperson, GASAB
- Ministries (MoSPI, MoMines, Jal Shakti, DoLR, MoCA, MoEFCC)
- ICAI
- Five State Governments selected across the country (Gujarat, Jharkhand, Karnataka, Meghalaya, and Uttarakhand)/AsG of these five States
- Shri Mukul Sanwal, IAS (Retd)
- Officers from GASAB, GA and Commercial Wings and iCED in CAG
- CGA, MoF

The Paper – Key elements

- Discusses the need for NRA vis-à-vis its importance towards the SDGs, Climate Change
- Brief on developments on NRA and international endeavour led by UN
- Detailed road map on the way forward segregated into specific actionable points
- Designs of the tentative templates of Asset Accounts on selected resources along with detailed discussions on issues/responsibility centers/probable source of data in respect of each of the resources
- Sample Asset Accounts prepared with available data
- Valuation methodologies – international practices and best approach for India
- Probable issues and challenges – possible ways to overcome them
- Bringing the private sector under the ambit of NRA

The Paper

– envisaged three term specific action plans

Spans over 10 years (2020-30) – converges with SDGs set by UN General Assembly (2015-30)

Short term goals	Mid-term goals	Long term goals
<ul style="list-style-type: none"> Preparation of Asset Accounts on mineral and energy resources in States Initiation and preparation of disclosure statement on revenues and expenditure related to NRA <p><i>(2019-20 to 2021-22)</i></p>	<ul style="list-style-type: none"> Preparation of National Asset Accounts on mineral and energy resources Preparation of Asset Accounts in respect of other three resources namely water, land and forest resources in the States Preparation of functional accounts recording transactions and other information about economic activities undertaken for environmental purposes. <p><i>(2022-23 to 2024-25)</i></p>	<ul style="list-style-type: none"> Supply and use tables in physical and monetary terms showing flow of inputs, products and residuals; and Preparation of the economic accounts highlighting depletion adjusted economic aggregates. <p><i>(2025 - 26 onwards)</i></p>

Resources suggested to be covered

SEEA – CF prescribes seven resources

- Mineral and Energy Resources
- Land and soil Resources
- Timber Resources
- Aquatic Resources
- Other Biological Resources (except timber and aquatic), and
- Water Resources

5 Major Resources considered – in line with prescriptions of Green National Accounts – A Framework

Mineral and Energy Resources

Water Resources

Forestry (&Wildlife) Resources

Land Resources

Training, capacity building and sensitisation

- Virtual workshops under Knowledge Center at RTI, Prayagraj - more than 100 participants from State NRA Cells
- National Workshop on NRA at iCED – special emphasis on Mineral & Energy Resources - Speakers from IBM, NRSC, TERI, GASAB /State AG of Rajasthan presented the pilot study
- State specific workshops organized in Gujarat and Karnataka - exchange of expectations/issues with States - Officers/staff of AsG Offices including the Officers of State Governments participated
- Other States requested to consider similar workshops
- Virtual presentations on NRA for the highest echelons in the States and AsG

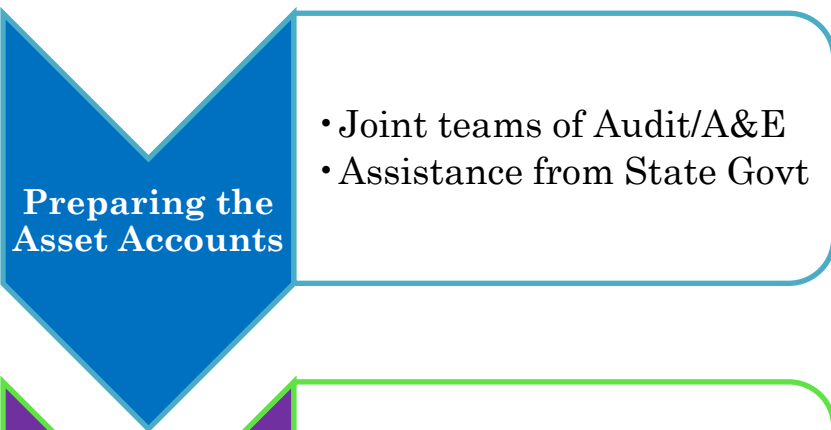
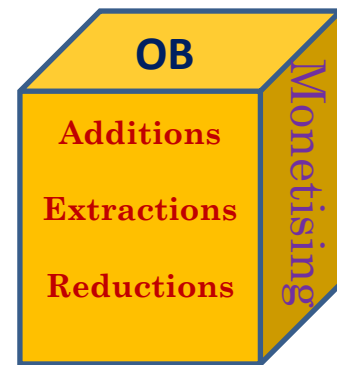
Templates of Asset Accounts on Mineral & Energy Resources – Goal 1

- Mother table of Asset Accounts – Retained same as prescribed by SEEA - CF
- Sub/detailed tables designed by us to suit country specific needs by capturing/providing
 - physical flows and monetary values
 - actual extractions/depletion
 - extractions for different sectors
 - closing stock of mineral reserves – annually
 - Domestic sales/consumption vis-à-vis exports data
 - Info on sustainability of resources – in years
- Two pronged valuation suggested – revenue and ASP
- Illegal mining embedded – all sources ...departments, audit and IBM flags
- Linking with the Finance Accounts – possible **Suggestive Formats**

Templates of Asset Accounts on Mineral & Energy Resources – Key takeaways

- One pager document on State-wise resources – other wise scattered
- Physical and monetary values compiled
- Pace of exploitation – over the years
- Analysis of revenue vis-à-vis market value/export value
- Making it easier to analyse and review the royalty rates – arrest windfall gains and protect State's revenue interest
- Sustainability of resources – in years
- Enable assessment of revenue streams
- To enable States to identify alternate resources (energy/ economic)
- Close monitoring on illegal mining
- Once compiled – enable State-wise overview of mineral repository

Guidance to pilot States – lessons for States



- **Only Proved Reserves** to be considered
- Opening balance – **methodology suggested** in Concept Paper (reduce from the resources stock available as of 2015)
 - Extractions (actual) to be collected from the Department(s) (more authentic)
 - Additions – rare (new discoveries) – to be collected from the Department
- Use royalty and actual sale value (IBM website/State authorities) for valuing stock
- SEEA – allows flexibility skip information not readily available - to be gathered in subsequent years
- Methodology – to be mentioned clearly in the Report on Asset Accounts

Natural Resource Accounting

Results of Pilots – inputs for States

GOA

- Unable to compile major minerals physical flow account – mining ban
- Minor minerals stock position not ascertainable
- Break up of extraction not maintained (Available in other two pilot States)

Rajasthan

- Variation between the revenue involvement and actual market value (roughly 10 times) clearly brought out
- Extensive coverage of minerals along with sub-minerals

MEGHALAYA

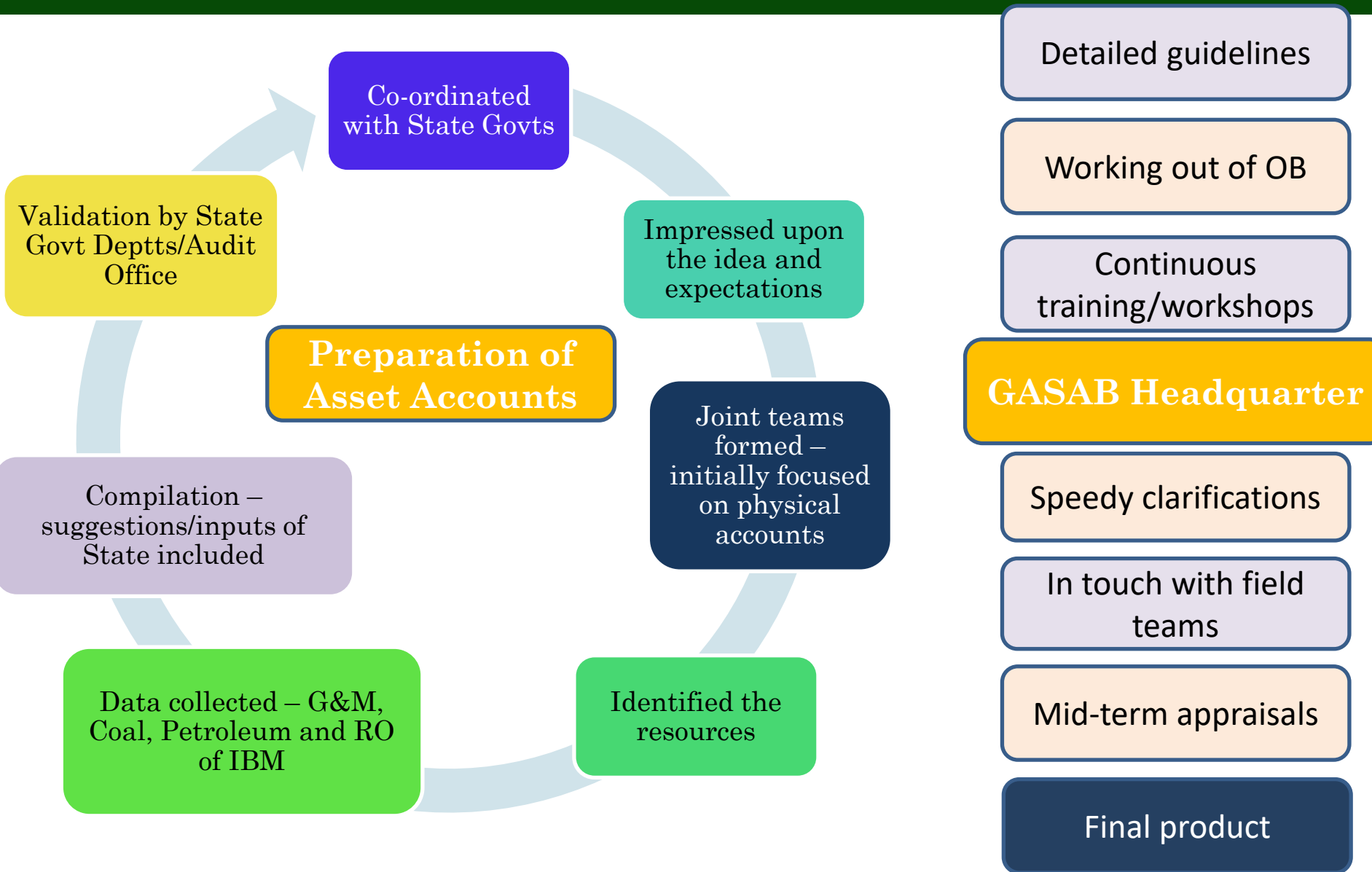
- Mapping of physical flows vis-à-vis revenue involved - short collection of receipts ₹ 40 crore in one year Sustainability of minerals in years brought out
- Illegal extraction detected – 4,284 MT of coal and more than 1 lakh tones of limestone illegally extracted
- Recommendations made to State Government based on study
 - Mines Deptt to reconcile figures with Land Customs Station *to plug leakages*
 - More close coordination needed between the Mines & Geology Department and E&F Department to exchange data on extraction of minerals from their respective jurisdiction

New
Screen
developed
by AP

Sample pilot study reports

[Goa](#) [Meghalaya](#) [Rajasthan](#) [Uttarakhand](#)

Concerted efforts during Pilots – to continue



Natural Resource Accounting

Status as of now

- Templates of Asset Accounts on Mineral & Energy Resources updated with inputs from pilot studies shared with NRA Cell members (April 2021)
- Comments received from DG Commercial, MoSPI, IBM, Ministry of Mines, MoEFCC, All five States, Shri Mukul Sanwal
- Comments suggestive in nature – appreciation for the design of the templates
- Draft formats of templates updated based on comments/suggestions – recirculated to the members (20 July 2021)
- Templates – under final touch

Way forward

2020-21 Asset A/cs

- The final templates of Asset Accounts on M&E Resources to be circulated by September 2021
- States have the flexibility to make changes to the formats (subject to retaining the overall framework and ease of compilation/comparability among States)
- Targeted completion – March 2022 (for first Asset Accounts for the year **2020-21**)
- State specific workshops – similar to Gujarat/Karnataka may be held to enable detailed brainstorming and deliberations

2021-22

- Plan automation processes for data capturing (AP model)

Other endeavour

- Parallel work on preparation of disclosure statement

Way ahead – expectation from States

Operational issues

- Close co-ordination between the State AsG and the Government Departments
- State Government may please support with required data/information
- Close monitoring and supervision from State Governments
- Need for installing **systems for regular data capture** on extractions/usage/sale –
 - Possible way out – map physical flows while reporting revenues monthly (**extractions**), automate processes of inputs from user agencies, check posts, customs department etc sources to **systemize data capture on usage/sale of resources** to cross verify extractions and **monitor illegal mining**

Co-ordination issues

- Nomination of Officers of State Govt for the NRA Cell
- To enable closer coordination and steer implementation

Natural Resource Accounting

THANK YOU!