



सत्यमेव जयते

# NATURAL RESOURCE ACCOUNTS OF NAGALAND FOR THE YEAR 2020-21 MINERAL & ENERGY RESOURCES



An initiative of Government Accounting Standards Advisory Board  
Under the aegis of CAG of India

May 2023

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D.O. No.....

*Sentiyanger Imchen, IAS  
Additional Chief Secretary  
& Finance Commissioner  
Government of Nagaland*

Date. *11.05.2023*

### **MESSAGE OF STATE GOVERNMENT**

I am happy to see the publication of first Natural Resources Asset Accounts of the State of Nagaland for Mineral and Energy Resources. Nagaland is a storehouse of resources of economic importance like Petroleum & Natural Gas, Coal, limestone, Ni-Co-Cr bearing magnetite, Decorative & dimension stones and Clay. These resources provided by nature can contribute significantly to the earnings of the State of Nagaland while simultaneously committing to the goals of environment sustainability and judicious use of these resources.

The initiative taken by the Comptroller & Auditor General of India and GASAB to help the state to compile the first Natural Asset Accounts for the country is a welcome step as it represents a systematic way of capturing the database on periodic basis on available natural resources which are interlinked with important factors like revenues and cost in exploitation of such resources. We feel that such Asset Accounts will supplement the State Government's efforts in assessing the contribution of the natural resources to the revenues, beside effective policy making and achieving international obligations like the Sustainable Development Goals and Climate change goals.

(Sentiyanger Imchen) IAS  
Addl. C.S & Finance Commissioner  
Government of Nagaland



ए. पितोहो चोफी, आई.ए.ए.एस  
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सत्यमेव जयते

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## MESSAGE FROM THE PRINCIPAL ACCOUNTANT GENERAL

I am happy to see that the report on the Asset Accounts of Mineral and Energy Resources of State of Nagaland for 2020-21 is being published. The Principal Accountant General of Nagaland, under the aegis of CAG of India and GASAB, have initiated the process of helping the States in preparation of Asset Accounts of Natural Resources in the State of Nagaland. The Report provides an in-depth picture of the opening stock of physical reserves of minerals and energy resources. The accounts also bring out the sustainability of these resources. It is expected that such a report will be a valuable tool in the hands of the Government to monitor sustainable use of its natural resources, and the gains from economic exploitation of its resources in future.

The Natural Resource Accounts has been prepared through the joint efforts of the office of Pr.AG (A&E), Pr. AG (Audit), and the State Departments. A State NRA Cell has been set up comprising of members from Departments concerned and Pr.AG offices and the NRA Cell has been meeting periodically to exchange information and share ideas.

We are confident that in the years to come, the exercise of Asset Accounting will be extended to all the known natural assets of the state and that such reports serve their purpose in the monitoring of SDGs (Sustainable Development Goals) on sustainability of natural resources. I take this opportunity to commend the efforts made by officials of Pr. AG offices to assist the state in compiling the report.

**A. PITOHO CHOPHY**  
**PRINCIPAL ACCOUNTANT GENERAL (AUDIT & A&E), NAGALAND,**  
**KOHIMA**

## **Disclaimer Statement**

Preparation of Asset Accounts is part of four-stage implementation strategy coined by the System of Economic and Environmental Accounting – Central Framework. This in turn is part of the Sustainable Development Goals to which India is a signatory. Thus, preparation of Asset Accounts on selective resources is an obligation for the country to be able to meet the international commitments.

The endeavor of Government Accounting Standards Advisory Board under the aegis of institution of Comptroller and Auditor General of India through its Accountants General Offices in States is only aimed at handholding the States in implementing Natural Resource Accounting commencing with the preparation of the first draft of Asset Accounts on Mineral and Energy Resources in a uniform and robust manner. Once the comprehensiveness and reliability of Asset Accounts prepared by the State Government stabilizes, State Government will produce this on regular basis.

The Asset Accounts have been prepared solely based on information/data provided by the concerned departments of the State Government and GASAB/CAG of India disclaims any responsibility for their correctness/inclusivity. The verification by Audit Office intends to check on a test basis that the data/information are supported by primary documents maintained in the offices of the concerned departments.

## Executive Summary

The Government Accounting Standards Advisory Board (GASAB) of office of the Comptroller and Auditor General of India has come out with a Concept Paper on Natural Resource Accounting (NRA) in India in July 2020 which, inter-alia, envisaged a three-phase plan for implementation of NRA in India in consonance with the strategy enshrined in the System of Economic and Environmental Accounting–Central Framework (SEEA-CF) of the United Nations.

Besides the plans, the Concept Paper also suggested the templates for preparation of Asset Accounts on Mineral & Energy Resources. Simultaneous to the lease of the Concept Paper, pilot studies were initiated (August 2020) in three States for preparing the model Asset Accounts on Mineral and Non-renewable Energy Resources in the States.

The final formats of Asset Accounts on Mineral & Energy Resources were released in the shape of a book in October 2021 for implementation in the States. First draft of the Asset Accounts was targeted for the year 2020-21 to be completed by the year 2022.

Subsequently, in view of the national declaration at the Conference of the Parties CoP26, efforts were made by GASAB to incorporate templates for collating information on progressing generation of renewable energy in States. These were intended to help the States and the Union to have a bird's eye view of the progress made towards meeting the targets committed by the country at the CoP26.

The work on preparation of the Asset Accounts in the State of Nagaland commenced with joint efforts of the Accountants General Offices and the State Government. This Report presents the first draft of the Asset Accounts on Mineral and Energy Resources in the State of Nagaland.

Effective implementation of a system of generating Asset Accounts on Mineral and Energy Resources in the State would aid in evidence-based good governance and have the following specific advantages:

- *Preparation of NRA and meet the commitment made to meeting SDGs and SEEA framework.*
- *Resources at a glance - a one pager document on State-wise major and minor minerals.*
- *Compilation of physical and monetary values to enable cross verification of revenues vis-à-vis actual extractions.*
- *Provide pace of exploitation – to bring out sustainability of resources.*
- *Analysis of revenue vis-à-vis market value/export value will make it easier to assess and review the royalty rates – to protect State's revenue*



*interest.*

- *Enable assessment of revenue streams for the future.*
- *Mine-wise data on resources – pan India.*
- *Enabler of identification of alternate resources (economic as well as energy).*
- *Close monitoring on illegal mining, and*
- *Progress on commitment made at COP 26.*

### **Salient features of the Report**

1. Creation of State NRA Cell: The State NRA Cell was formed on 18th June 2021 with members from the State Government Department of Geology & Mining and Finance along with members from both the Offices of the Pr. Accountants General (Audit) and (A&E).

2. Initiatives of the State Government to assist implementation of the project: The Department of Geology & Mining and New & Renewable Energy, Government of Nagaland has nominated nodal officers to assist in providing necessary data required for preparation of the Asset Account.

3. Unique Collaboration between Pr. Accountants General Offices and the State Government departments to prepare this compilation: Joint NRA team comprising of officials from the Offices of the Pr. Accountants General (Audit) and (A&E) and officials from State Government was formed. The (A&E) Office, Nagaland assisted the State Government in preparing and compiling their first draft of Asset Accounts.

4. Dual stage Validation and verification process: The first draft Asset Accounts has been prepared by the State based on data/information provided by Geology & Mining Department and New & Renewable Energy Department of the Government of Nagaland. First stage validation of the compiled draft Asset Accounts was done by these two departments as well as by the Finance Departments, Government of Nagaland. Further, second stage limited verification of the first draft Asset Accounts was done by the Offices of the Pr. Accountants General, Nagaland.

5. Major findings of the Asset Accounts Report, disclaimers/exclusions and recommendations:

- Finding: No mechanism to weigh the coal extracted other than

counting the number of trucks carrying coal.

- Disclaimers/Exclusion: Other than data/information or Table regarding Progress in Generation and use of renewable energy resource and export of minerals, the Asset Accounts has been prepared based on data/information provided by Mining & Geology Department, New & Renewable Energy Department and Forest Departments of the Government of Nagaland.

- Recommendation:

- Stock reserve of Major minerals need to be uploaded in the IBM and subsequent reconciliation to be done with IBM regularly.

- Geo fencing of the mining areas is to be prioritized and output tracking system to check unauthorized extraction and transportation/export of mineral require to be urgently developed.

## CHAPTER 1 INTRODUCTORY

### 1.1 Natural Resource Accounting—the Concept

Economic growth over decades has largely been an outcome of continued reliance on natural resources. Growth is clearly the major engine to create livelihood options; its reliance on increased resource use has, however, led to many negative externalities. The current paradigm of resource-led economic development sees a coupling between the availability of natural resources and economic growth.

**Natural resources play a crucial role for economic development of a country and are crucial for their inbuilt value of inter-generational equity and sustenance.**

Over the years, there has been increasing awareness about environmental issues across the globe and a growing concern about the depletion and degradation of the natural resources. This concern gave birth to the idea of sustainable development goals which aims at ending poverty, protect the planet, and ensure that all people enjoy peace and prosperity by 2030. The sustainable development dialogue has brought to the fore the direct and indirect impact of human activity on the environment and there is now a consensus that continuing economic growth and human welfare are integrally dependent on the benefits obtained from the environment. The critical trade-offs between managing eco systems and environmental resources for future sustainable economic and social development need to be understood for effective policy interventions.

Natural resources play a vital role in the sustainable economic development of any country. They need to be exploited in a sustainable manner so that the future generations can also avail of their advantages.

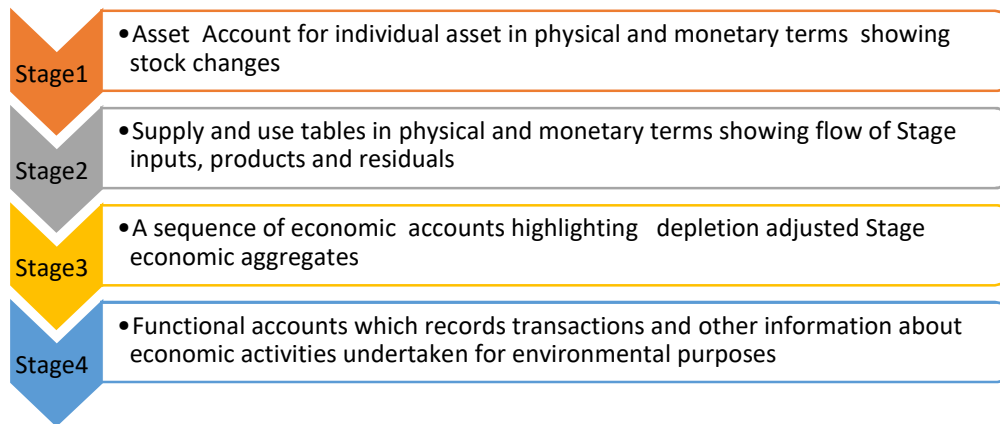


The rampant over-exploitation of these resources in recent times has resulted in harmful impact on the environment and issues of climate change and global warming have become a matter of discussions and deliberations round the Globe.

Conventional accounting captures data only of the measurable economic activity. In order to overcome this short coming and to capture the intimate interplay between the economic indices and the various components of the

natural environment, the concept of NRA has emerged. It is based on the concept “Measurement of a resource leads to its better Management.” The idea is to quantify the damage to the environment so that it can be reduced from Gross Domestic Product (GDP) to arrive at Green GDP. It would assist in taking policy decisions in respect of matters affecting environment directly and indirectly and provide necessary directions to use our resources on a more sustainable basis and reducing the negative impact on the environment.

In keeping with the related developments, the United Nations has been working towards a universally acceptable framework on environmental resource accounting which culminated into release of the SEEA-CF in 2012 which is the latest internationally accepted framework. The SEEA (CF) prescribes a four-stage implementation process by compiling the following accounts as mentioned below:



However, while prescribing the aforesaid milestones for implementation of NRA across the world, the SEEA (CF) has also envisaged constraints likely to be faced by the countries in implementing NRA. SEEA (CF), thus, prescribed for flexibility in designing the accounts based on the specific environmental issues faced by a Government. Depending upon the specific environmental issues faced, a country may choose to implement only a selection of the accounts included in the SEEA (CF). The SEEA (CF) provides that even if a country desires eventually to implement the full system, it may decide to focus its initial efforts on those accounts that are most relevant to current issues.

## CHAPTER-2

### IMPLEMENTATION OF NRA IN INDIA-GASAB'S ENDEAVOUR

#### 2.1 About Government Accounting Standards Advisory Board (GASAB)

The Government Accounting Standards Advisory Board (GASAB) was established in 2002 by the Comptroller and Auditor General of India with the assistance of Government of India to formulate Government accounting standards for improving Government accounting and financial reporting.

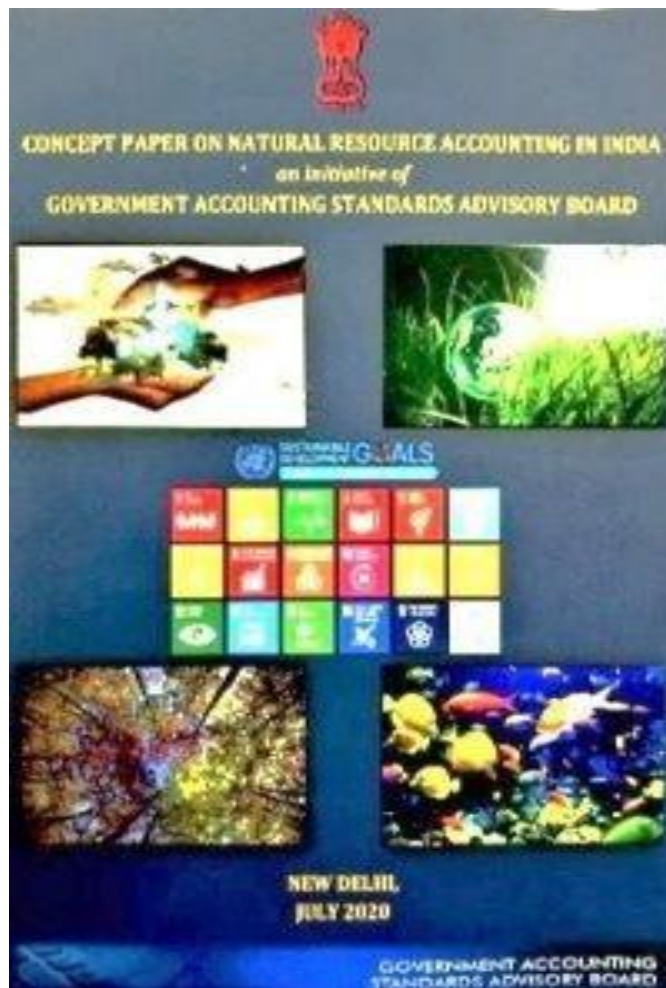
#### 2.2 Concept Paper on NRA in India – released by GASAB

GASAB has taken the initiative (2019) to develop a framework for implementing NRA on priority as a nationally important project. GASAB came out with a Concept Paper on implementation of NRA in India in July 2020. The Paper, inter-alia, discussed the concept and its inter-relation with the Sustainable Development Goals (SDGs) and Climate Change, international progress on environmental accounting and merger of the concept with economic environmental accounting, progress in other countries.

Keeping the international as well as national developments on NRA and the mandate of GASAB in suggesting accounting framework for enhancing the quality of decision making and public accountability in view combined with the

suggestions of Working Group on Environmental Auditing under the INTOSAI to hand hold the country in developing NRA, the Concept Paper was a result of GASAB's efforts towards helping the causes of environmental accounting in India, climate change, and sustainable development goals.

GASAB has suggested a well laid out implementation plan divided into three term goals in consonance with the strategy envisaged by the SEEA-CF.

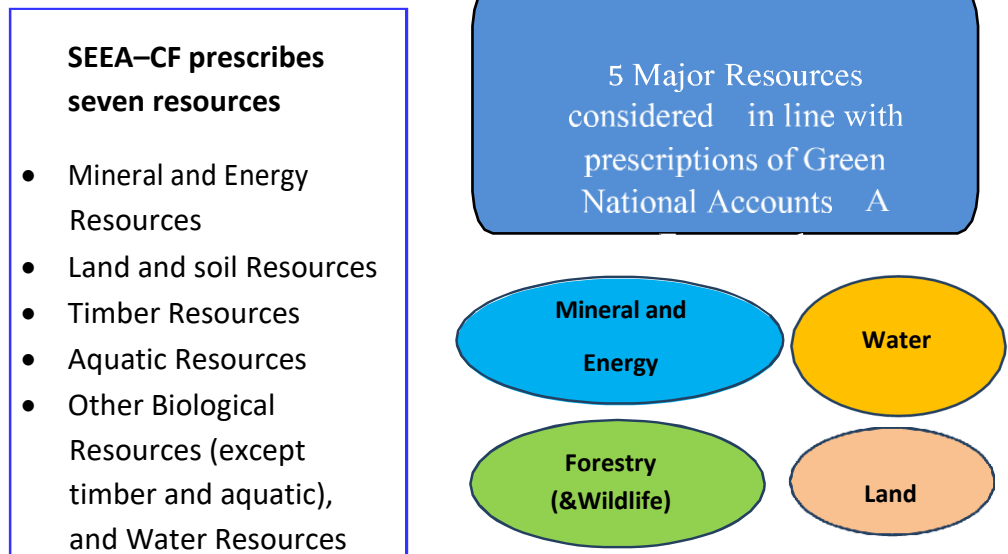


The Paper, *inter-alia*, envisaged short, medium- and long-term goals in consonance with the four-stage strategy suggested by the SEEA Framework, as mentioned below:

Short term goals	Mid-term goals	Long term goals
1. Preparation of Asset Accounts on Mineral and Non-Renewable Energy Resources in States  1. Initiation and Preparation of disclosure statement on revenues and expenditure related to natural resources Of disclosure statement on revenues and expenditure related to natural resources  (2019-20 to 2021-22)	1. Preparation of National Asset Accounts on Mineral and Non-Renewable Energy Resources.  2. Preparation of Asset Accounts in respect of other four resources namely water, land and forestry & wildlife resources in the States.  3. Preparation of supply and use tables in physical and monetary terms showing flow of natural resource inputs.  (2022-23 to 2024-25)	1. Preparation of the economic accounts highlighting depletion adjusted economic aggregates; and  2. Preparation of functional accounts recording transactions and other information about economic activities undertaken for environmental purposes.  (2025-26 onwards)

### 2.3 Goal 1 of the action plan envisaged in the Concept Paper

The initial stage of implementation strategy of NRA is preparation of the Asset Accounts on individual resources. The SEEA (CF) has listed out seven resources of which five major resources namely Mineral & Energy Resources, Water Resources, Forestry & Wildlife Resources and Land Resources have been considered for taking up initially in the Concept Paper on NRA as mentioned in the table and diagrams below:



## 2.4 Why-Mineral and Energy Resources

- The Asset Accounts on Mineral & Energy Resources have been considered as the most important goal as it consists of non-renewable resources while other major resources fall in the other group and gets renewed naturally.
- In keeping with the implementation stages as envisaged in the SEEA(CF), the flexibility embedded there in and the importance of non-renewable resources discussed above coupled with the prescription of SEEA that a

**Mineral & Energy Resources, being non-renewable resources have been considered as the first goal**

country may decide to focus its initial efforts on those accounts that are most relevant to current issues, preparation of Asset

Accounts on Mineral & Energy resources have been conceptualised as the need of the hour and thus planned as the short-term goal No. 1.

## 2.5 Advantages of consolidating the Asset Accounts on Mineral & Energy Resources

- A system of collation of a periodic database in the shape of an Asset Accounts on available natural resources linked with inter-related factors like revenues and costs involved in exploitation of such resources, their sustainability for the future generations would be extremely helpful in monitoring the sustainability of resources, effective decision making, adoption/adaption of SEEA (CF) besides attaining other pressing international obligations like the SDGs and Climate Change.

- Besides the above, the Asset Accounts would aid in evidence based good governance with the following specific inputs:



**Resources at a glance:** The Asset Accounts would enable a one pager document on the resource availability of each State.

**Provide invaluable information and datasets on mineral repository and potential of States**—could be used to showcase for varied purposes.

**Physical flows and monetary values mapped**—enabler of working out the value of extracted resources and also to help in monitoring of realization of revenues vis-à-vis extraction of resources to help in identifying cases of leakage of revenue.

**Pace of exploitation:** Down the line, compilation of Asset Accounts would help in drawing up the pace of exploitation of resources over the years thus bringing out vital inputs like the pattern of resource usage and sustainability of resources.



**Revenue vis-à-vis market value:** Ascribing money value with reference to the royalties/revenues combined with the market value would aid in continuous analysis of the royalty/duty/taxes to help the public exchequer.

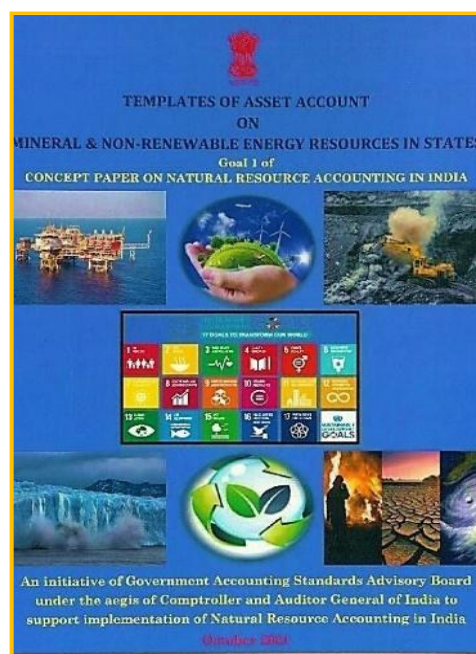
**Sustainability of minerals in years**—when analysed with revenues, has the potential to point towards revenue streams for future and will also enable States to identify alternate resources—both economic and energy resources.

**Close monitoring on illegal mining:** The inter-operability of supply and use of resources and their incorporation in the system of preparation of Asset Accounts would enable close watch on illegal mining. This will not only help in optimizing resource base but will also help in containing unscientific mining there by aiding in conservational efforts and restricting environmental degradation.

**Thus, to sum up, Asset Accounts, once compiled, would bring out State-wise mineral repository along with other inputs like actual stock of resources, usage pattern, their values, aiding in evidence-based policy framing and most importantly sustainability of resources for future generations.**

## 2.6 Evolution of the final templates

The templates of Asset Accounts on Mineral and Non-Renewable Energy Resources have been finalized after incorporating the comments of the Consultative Committee members and the experience gained in successful completion of pilots in three States. While the core framework as prescribed by the SEEA (CF) has been retained, designs of the sub and detailed tables have been worked out by GASAB based on country specific needs and other peculiarities besides constraints/ data availability, etc., to capture data required for the core framework and also to serve as repository of an inclusive informative database for use by policy makers, stakeholders, academia and other interest groups.



The templates, as they stood then, were released in the form of a book titled “Templates of Asset Accounts on Mineral and Non-Renewable Energy Resources in States” in October 2021.

The formats were constantly updated with inputs and experiences gained through their implementation in the States from October 2021 through March 2022. The final formats included five tables for capturing the basic Asset

Accounts (table 1), Asset Accounts on physical flows (table 2), physical flows of riverine resources (table 2A), valuation of riverine resources (table 2B), subsidiary Asset Accounts linking physical flows with valuation of resources (table 3), data on illegal mining (Table 3A) in listed vis-à-vis production of resources (Table 4) collection under District Mineral Foundations(DMF) (table 5), progress in generation and use of Renewable and Non-Renewable Energy Resources (table 5).

## **2.7 Additionalities—monitoring the targets committed to COP–26**

At the United Nations Climate Change Conference of 2021 or the COP26, the Government of India (GoI) committed the following:

- 1) *India will take its non-fossil energy capacity to 500 GW by 2030.*
- 2) *India will meet 50 percent of its energy requirements from renewable energy by 2030.*
- 3) *India will reduce the total projected carbon emissions by one billion tones from now till 2030.*
- 4) *By 2030, India will reduce the carbon intensity of its economy by more than 45 percent.*
- 5) *By the year 2070, India will achieve the target of Net Zero.*

In order to monitor the progresses to attain the above commitments, specific input tables for collecting and collating information on progress on generation of new and renewable energy have been envisaged as Table 6.

## **2.8 Consultative Process**

To ensure wider consultation with diverse stakeholders, GASAB has constituted consultative group in GASAB headquarters consisting of ministries in Government of India, five State Governments and the Accountants General in these States, expert agencies like National Remote Sensing Center (NRSC), The Energy and Resources Institute (TERI), etc.

Idea of constituting the groups was to draw technical expertise and inputs from subject experts and academia while steering the implementation process following the action plans suggested in the Concept Paper, with special emphasis on the preparation of Asset Accounts on the Mineral and Energy Resources in the States.

## **2.9 Training and capacity building**

As the Concept Paper envisaged commencement of the project from States, it was important that proper training and capacity building was ensured for the Officers and staff members of not only the Accountants General Offices, but the State Government Department as well. Accordingly, virtual trainings/workshops were continuously held over the timeline of implementation of the project.

## **2.10 On boarding and hand holding the States**

In order to take the States on board as one of the most vital stake holders in the implementation process, the Additional Chief Secretary to the State of Maharashtra, Industry Department was demi-officially informed (September 2021) by the Deputy C&AG & Chairperson, GASAB about the endeavor of GASAB and vision of the project which was followed up with virtual presentation to the State. The views/ suggestions emanated at this meeting were taken into consideration in updating /modifying the templates.

## **CHAPTER 3**

### **INITIATIVES IN THE STATE**

#### **3.1 Formation of State NRA Cell**

A Natural Resources Accounts (NRA) Cell has been formed in the State on 18<sup>th</sup> June 2021, with members from both the Offices of the Pr. Accountants General Audit and A& E from the State Government Departments of Geology & Mining and Finance (Budget). (Detailed list in **Annexure - I**)

#### **3.2 Follow up, trainings and capacity building**

State NRA cell meeting-cum-workshop was held on 7.1.2022 and 4.4.2022, on preparation of the Asset Accounts including the Guidelines and Standard Operating Procedures (SOP) issued by GASAB that have been laid down for preparation of the Asset Accounts of the state.

## CHAPTER -4

### MINERAL PROFILE OF STATE AND SHORTLISTING OF RESOURCES

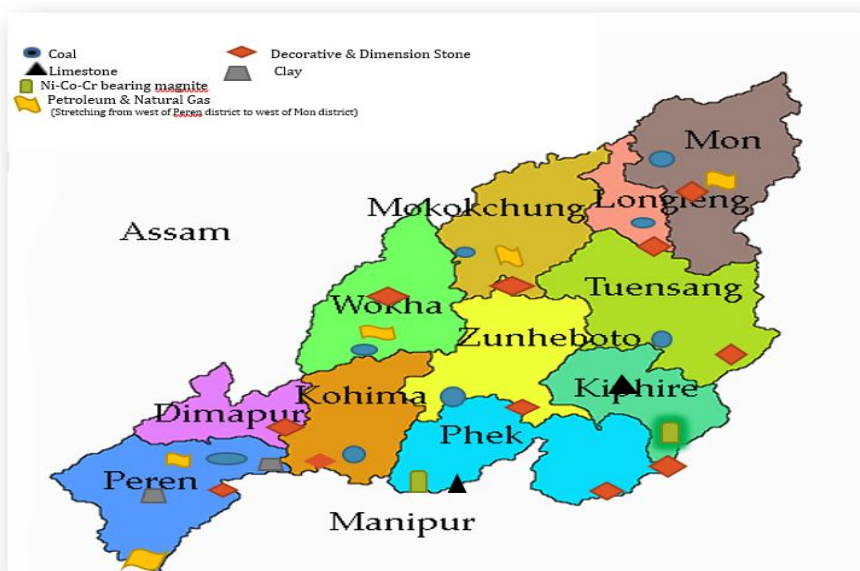
#### 4.1 Mineral profile of Nagaland and short listing of resources

All the seven minerals occurring in the State, namely Limestone, Coal, Petroleum & Natural Gas, Nickel Cobalt Chromium Bearing Magnetite (Ni-Co-Cr bearing Magnetite), Decorative and Dimension Stones & Clay was included in the Asset Account on Mineral and Energy Resources 2020-21. These minerals are found in the following districts of the State: -

Sl. No.	Name of the mineral	District where the mineral occurred
<b>Major minerals</b>		
1	Coal (Tertiary Coal/High Sulphur Coal)	Mokokchung, Mon, Tuensang, Wokha, Longleng, Kohima and Dimapur.
2	Limestone	Kiphire and Phek.
3	Magnetite Iron Cobalt Chromium	Kiphire and Phek.
4	Petroleum & Natural Gas	Stretching from West of Peren District to West of Mon District. ( Champang, Wokha District)
<b>Minor minerals</b>		
1	Decorative and dimension Stone	Kohima, Mokokchung, Tuensang, Phek, Mon, Zunheboto, Peren, Longleng, Kiphire, Dimapur and Wokha.
2	Clay	Dimapur and Peren ( Jalukie valley)
3	Sand, Gravel, Boulder etc.	Scattered all over the State along the river.

#### 4.1.1 Mineral Map of Nagaland

The State Government, Department of Geology & Mining is in the process of preparation of a mineral map in the State with geo tagging. However, a simple mineral map is depicted below:



## **4.2 Strategic importance of minerals for the State**

Mineral resources of the State were extracted by individuals/Companies by the virtue of mining leases granted to them based on the recommendation of the village committees on payment of royalties. Private individual/companies plays a vital role in the socio-economic development of the indigenous people in terms of Corporate Social Responsibility and it also help in generating employment of the indigenous people.

During the year 2020-21, the Geology and Mining Department has collected Royalty from Coal and Minor Mineral (minor mineral, specific mineral not mentioned) which are mainly contributing to the State's total non-tax revenue from these resources.

## **4.3 Mining process followed in the State**

Under the Mines & Minerals Development & Regulation (MMDR) Act 1957, no person shall undertake mining operations in any area except in accordance with the terms of a mining lease.

Under the Nagaland (Ownership and Transfer of land and its Resources) Act, 1990, the State Government has enacted the following Mining rules taking into account of the Special protection under Article 371-A\* of the Constitution:

1. The Nagaland Minor Mineral Concession Rules, 2005
2. The Nagaland Coal Policy, 2006
3. The Nagaland Coal Mining rules, 2006
4. The Nagaland Mineral Concession Rules, 2007
5. Nagaland Coal Policy (First Amendment), 2014

Due to unique land holding system under the Article 371 (1) (a) (iv) of the constitution in Nagaland, where ownership of the land belongs to the people and its administration is by Traditional System and Customary Law of each Tribe, mining activity in respect of coal has been traditionally carried out by community/individual landowners with mining leases/licensees and the role of the Government is confined to collection of royalties only.

As per Notification dated 17<sup>th</sup> December 2014 on Nagaland Coal Policy (First Amendment) 2014, the Village Council is allowed to collect 10% tax called Naga Commission which is payable to land owners/village council from the concerned Coal Mining Engineer at the District level.

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\* Nagaland State is covered under Article 371-A of the Indian Constitution, where no Act of Parliament in respect of ownership and transfer of land and its resources shall apply to the State.

### 4.3.1 Coal Reserve Estimation

**Reserve Estimation:-** Due to structural complexities and lateral variation in sedimentary facies, the Coal Seams of Nagaland exhibit frequent pinching-swelling characteristics and restricted strike continuity. Drilling towards dip extension is also not possible as the coal seams dips against the slopes of the hills. Thus, estimation of the coal reserves is rather difficult and may be calculated by considering the extend of the coal mines being operated by the private parties. The Coal deposit of Nagaland falls under small pockets deposit due to inconsistency and its erratic nature.

#### District wise Coal Reserves of Nagaland

Name of the District	Resources in Million Tonnes				Grand T
	G1 Proved (331)	G2 Indicated (332)	G3 Inferred (333)	G4 Reconnaissance (334)	
<b>Mokokchung</b>	0	21.83	111.26	144.97	278.06
<b>Mon</b>	0	0	22.2	60.39	82.59
<b>Tuensang</b>	0	0	3.26	30.54	33.8
<b>Wokha</b>	0	0	0	78.15	78.15
<b>Longleng</b>	0	0	0	13.28	13.28
<b>Kohima</b>	0	0	0	5.2	5.2
<b>Dimapur</b>	0	0	0	1.6	1.6
<b>Total</b>	<b>0</b>	<b>21.83</b>	<b>136.72</b>	<b>334.13</b>	<b>492.68</b>

Thus, the total quantity of coal stock which has been assessed in different district stands as on 31<sup>st</sup> March 2021 at **492.68 million tones in Nagaland**.

#### 4.3.1.1 Assessment of Coal resources – viability and mining prospect and its Utilization

The department of Geology & Mining has issued six Coal Prospecting License (CPL) and 11 Coal Mining License (CML) to individuals which are active at present. No Manufacturing Unit license has been issued till date. No license has

been issued for Lime stone and other Minerals. The exploration of Petroleum & Natural Gas in the state is under litigation in the Hon'ble Gauhati High Court. Petroleum and Natural Gas production in Nagaland has been halted since 1994.

The Geology & Mining Department in its report on Assessment of Coal Resources its economic viability and mining prospect in Nagaland has stated that in view of the overall industrial backwardness of the area, the coal presently being extracted by private coal miner are sold to the nearby brick fields and tea gardens at very cheap rates which in the long run will greatly affect the gainful utilization of the coal resources. In such a scenario, the best approach may perhaps to be attempt with all efforts for generation of thermal power to meet the power need of the State and also find suitable market for the private coal mining operators.

### 4.3.2 Limestone

**Introduction:** - The Geological Investigation of Limestone deposits were carried out in 14 locations under Kiphrie and Phek Districts of Nagaland by various agencies to assess the quantity and quality of limestone resources and other preliminary logistic support. The exploration details were depicted separately for each location report by the exploring agencies and Directorate of Geology and Mining, Government of Nagaland.

#### District wise Limestone Reserve in Nagaland

Name of the District	Resources in Million Tonnes				
	G1 Proved (331)	G2 Indicated (332)	G3 Inferred (333)	G4 Reconnaissance (334)	Grand Total
<b>Kiphire</b>	0	25.901	30.531	333.817	390.249
<b>Kiphire ( addition 2020-21)</b>	0	0.99	5.55	1.05	7.59
<b>Phek</b>	3.5	0	0.5	29.56	33.56
<b>TOTAL</b>	<b>3.5</b>	<b>26.891</b>	<b>36.581</b>	<b>364.427</b>	<b>431.399</b>

Thus, the total quantity of limestone stock which has been assessed in different districts stands as on 31<sup>st</sup> March 2021 **431.399 Million Tonnes** in Nagaland and no production/ extraction activities of limestone in the state has been reported.



### 4.3.3 Multi-Metal Magnetite and Ni-Co-Cr-Magnetite

**Introduction:** - The Geological Investigation of Multi-Metal Magnetite & Ni-Co-Cr Magnetite deposits in Naga Hills Ophiolite were carried out in two locations under Kiphrie and Phek Districts of Nagaland by Directorate of Geology and Mining, Government of Nagaland to assess the quantity and quality of resources and other preliminary logistic support.

#### District wise Ni-Co-Cr bearing Magnetite Reserve in Nagaland

Name of the District	Resources in Million Tonnes				Grand Total
	G1	G2	G3	G4	
	Proved	Indicated	Inferred	Reconnaissance	
Kiphire	5.00	-	-	8.31	13.31
Phek (addition 2020-21)	-	-	-	5.38	5.38
<b>TOTAL</b>	<b>5.00</b>	<b>-</b>	<b>-</b>	<b>13.69</b>	<b>18.69</b>

Thus, the total quantity of Ni-Co-Cr bearing Magnetite stock which has been assessed in two districts stands as on 31<sup>st</sup> March 2021 at **18.69 Million Tonnes** in Nagaland and no production/extraction activities of the same has been reported in the state.

### 4.3.4 Decorative and Dimension Stone

**Introduction:** - Nagaland, befittingly described as ‘land of the Stone Culture people’ is endowed with varieties of dimension and building stone. From simple grinding to massive monoliths, stones are blended in the “way of life” of the Nagas. As a part of the ‘realisation of a tradition’, the Directorate of Geology and Mining, undertook the study and ‘assessment of dimension stone and its commercial prospect in Nagaland’ funded by North Eastern Development Corporation Limited (NEDFi), Guwahati.

Total quantity of Dimension Stones of 317.03 MMT (207.64 MMT inferred, and 109.39 MMT measured) stock which has covered 12,117 sq. km assessed in 11 district of Nagaland. Detailed below:

Sl. No.	Name of District	Reserve Estimate(MMT)
1.	Kohima	61.24
2.	Mokokchung	14.10
3.	Tuensang	29.25
4.	Phek	84.32
5.	Mon	8.40
6.	Zunheboto	29.50
7.	Peren	40.50

8.	Longleng	1.30
9.	Kiphire	5.40
10.	Dimapur	8.80
11.	Wokha	34.22
<b>TOTAL</b>		<b>317.03</b>

No production/extraction activities of Dimension Stone in the state has been reported.

#### 4.3.5 Clay

In Nagaland, total quantity of 20.00 Million Tonnes of G-4 (Reconnaissance) Clay stock has been assessed in Dimapur and Peren (Jalukie valley) and no production/extraction activities of Clay in the State has been reported.

#### 4.3.6 Sand, Gravel, Boulder etc.

During the year 2020-21, approximately 3.5-4 lakhs metric tonnes of Boulders were extracted by the land owners. However, no concrete information/data in regard to riverine resources like sand, gravel, boulder, shingle etc. has been furnished either by the Geology & Mining department or the Forest department.

Further, out of the seven minerals shortlisted for the Asset Accounts, addition to stock during the year was furnished in respect of Limestone and Ni-Co-Cr bearing Magnetite. No data on extraction is available in respect of any mineral & energy resources except Boulders despite 11 licenses were issued for mining Coal. Thus, closing stock in the Asset Accounts on Mineral and Energy Resources of Nagaland for the year 2020-21 remain same.

#### 4.4 Contribution of mineral resources in the revenues of the State

During last 5 years, receipts from mineral resources and their share in total non-tax receipts of the State Government from royalty of mineral resources were as detailed below:

(₹ in crore)

Receipt Head	2016-17	2017-18	2018-19	2019-20	2020-21
Royalties on Coal	0.8	0.88	0.81	0.72	2.19
Minor Mineral	0	0.11	0.14	0.12	0.21
<b>Total</b>	<b>0.8</b>	<b>0.99</b>	<b>0.95</b>	<b>0.84</b>	<b>2.4</b>
<i>Total Non-tax revenue of the State</i>	<i>345.52</i>	<i>388.53</i>	<i>255.54</i>	<i>339.29</i>	<i>242.6</i>
<i>Percentage of receipts on coal &amp; boulders vis-à-vis State's non-tax revenue</i>	<i>0.23</i>	<i>0.25</i>	<i>0.37</i>	<i>0.24</i>	<i>0.99</i>

Source: State Finance Accounts



Thus, during last 5 years, receipts from mineral resources and their share in total non-tax receipts range between 0.24 to 0.99 %.

*Source: Data provided by the Geology & Mining department.*

#### 4.5 Short-listing of resources for this study

This being the first year of preparation of the Natural Resource Account, all the data related to mineral available in the State could not be immediately included in the Asset Accounts. Efforts would be made to include the remaining resources (Riverine resources) in the future Asset Accounts.

## CHAPTER 5

### ASSET ACCOUNT OF MINERAL AND ENERGY RESOURCES OF NAGALAND

#### 5.1 Scope

The Asset Accounts on Mineral & Energy Resources of Nagaland for the period from April 2020 to March 2021 was prepared between December 2021 and February 2022. Six minerals (except sand, stone, boulders, etc.) were selected as mentioned in the preceding chapter on which information/ data on stock reserve/extraction/production during 2020-21 was furnished by the concerned Departments as under:

Sl. No.	Name of the mineral	Classification	Name of the Department furnishing the data/ Information
1	Coal	Fossil fuel	Geology and Mining Department
2	Petroleum & Natural Gas	Fossil fuel	
3	Limestone	Major mineral	
4	Ni Co Cr Bearing Magnetite	Major mineral	
5	Decorative and dimension Stone	Minor mineral	
6	Clay	Minor mineral	

#### 5.2 Criteria:

The Asset Account was prepared based on the following:

- i. GASAB's Concept Paper on NRA and instructions
- ii. GASAB's Templates of Asset Accounts on Mineral & Non-Renewable Energy Resources in States
- iii. Nagaland Coal Mining (First Amendment) Rules, 2014
- iv. Assessment of Coal Resources its Economic viability and mining prospect in Nagaland (Technical publication DGM/fs 2008/no.28)
- v. Geographical Report on Detailed Exploration for Limestone
- vi. Report on large scale geological mapping of longpotrop of (Mimi limestone deposit, Tuensang District.) (Progress report for the field season 1987-90-1990-92 and 2016-17)
- vii. Geological Report on G3 Exploration of limestone in Salumi Block, Kiphire District, January 2021
- viii. Assessment of Multi-Metal Magnetite deposit in Naga Hills Ophiolite

- (Technical publication DGM/FSP/2012-14/No.06)
- ix. Geological Report on G-4 Level Exploration of Ni-Co-Cr-Magnetite, Phek District, Nagaland, January 2021
  - x. Project Report on Assessment of Dimension Stone and its commercial Prospect in Nagaland, Technical Publication No.5, February 2007

### 5.3 Objectives

The objectives are as follows:

- To prepare the Asset Account of mineral and energy resources of the State for better monitoring of resource extractions, usage, contain illegal mining and revenue optimization in the interest of the State.
- To assist the country/State in attaining the international commitment on becoming SEEA framework compliant and for effectively mapping the SDG indicators
- To assist the policy makers with comprehensive data-set on availability, usage and sustainability of mineral for evidence-based decision making.
- To provide inputs for monitoring the progresses towards national commitment made at the COP 26 increase in generation and usage of renewable energy resources.

### 5.4 Methodology of data collection and compilation of physical flows

The physical flow of the accounts on Mineral and Energy Resources in Nagaland was prepared and compiled by the State Government with the assistance of the office of the Principal Accountants General, Nagaland.

- (1) **Information/data supplied by Government Departments** - On 12 October 2021 and 10<sup>th</sup> November 2021, advance copy of Chapters VI and VII of the Booklet on Templates of Asset Accounts on Mineral and Energy Resources for implementation in the States issued by GASAB has been forwarded to the State Government of Nagaland along with requests for advise on the list of resources to be covered during the first year of Asset Account (2020-21) and directions to the concerned departments for immediate commencement in preparation of the Accounts. Copy of Chapters VI and VII has also been forwarded to the concerned departments and members of State NRA Cell on the same day.

Requests were also made (16th November 2021) to the concerned (December 2021) departments, namely, Geology and Mining, Forest Departments, Land Resources, Economics & Statics for data/information required in preparation of the Asset Accounts. The Directorate of Geology and Mining Department and New and Renewable Energy Department has prepared their Assets Accounts with Physical flow of the Accounts in Table 1-Basic asset account, Table 2-Asset Accounts on physical of Mineral & Energy Resources along with sustainability of the resources and Table 3-Subsidiary Asset Account linking detailed physical flows in respect of Mineral and Energy Resources with the valuation of resources. The information provided by the concerned Departments was:

- i. Information/data for physical flow in respect of Coal, limestone, Petroleum & Natural Gas, Ni-Co. Cr bearing magnate (major mineral) and Decorative and dimension Stone and Clay (minor minerals) were prepared by Geology and Mining Department.
  - ii. Notifications/orders regarding applicable rate of Royalty for major minerals, Royalty compiled by Mining & Geology Department
  - iii. Mineral map of Nagaland on 1:250,000 scale prepared by Directorate of General of Geology & Mining, Nagaland and approved on 20th June 2012 is being used as reference/base map of the state by the Geology & Mining Department. However, the map does not include mine area location and resource wise maps or geo-tagging of actual mine areas.
- (2) Information/data on requirement of energy in the State and generation of renewable energy resources was collected from the Offices of Directorate of New & Renewable Energy (NRE, Nagaland).
- (3) **Additional information/ data**—the following information /data was collected by the Office of the Pr.AG (Audit):
- i. As per Information of IBM website, no proved reserve of minerals of Nagaland is available.
  - ii. Average sale price for any minerals is not available either in the IBM website or with the State Government. As there was no extraction/production of the resources during the period covered in the Asset Accounts, monetizing the Opening and Closing Stock Balance could not be made.

- iii. Revenue (Royalty) collection of the State from Coal and Minor minerals during last five years collected from the State Government for the years 2016-17 to 2020-21.

The opening balance for the Asset Accounts in respect of each resource has been compiled based on data/information of the concerned department. Cross checking of the figures supplied by the concerned departments could not be done with that of IBM, as data/ information is not available on its website.

### 5.5 Methodology of monetization of physical flows

Attributing money value with reference to the royalties/revenues combined with the market value would aid in continuous analysis of the royalty/duty/taxes to help the public exchequer. Monetising the physical flows on two accounts – first being the revenue involvement method while the second is the average sale/market value of produces. This actually serves one of the targets of the building the Asset Accounts, i.e. providing information on revenue streams for the policy makers.

Physical flows on extractions are monetised based on two parts, i.e. on Government Revenue and on Average market/Sale price.

- i. **Government revenues:** Royalty rates, fee, etc. applicable to the respective resources during the year was used for working out the revenues attributable to the resources extracted/transported. However, it is reported by the Geology and Mining department that no such data was generated so far.
- ii. **Average market/sale price:** The coal royalty is fixed at ₹420/- per tonne but data regarding production/sale quantity is not available with the department.
  - a) **Major minerals** – As there is no information available on the IBMs website, Average sale price could not be ascertained.
  - b) **Minor Minerals** – In Nagaland, the Geology and Mining, Forest & State Economic & Statistic Department has informed that it does not have the information on Average market price on minerals.

### 5.6 Dual stage validation and limited verification of data

The Natural Resources Accounts of Nagaland for the year 2020-21 has been prepared by the State Government and the Office of the Principal Accountants General assisted the State Government in preparing their first draft NRA, based on data collected from the Geology and Mining Department, and New and

Renewable Energy Department of the Government of Nagaland. Further, second stage limited verification of the draft NRA was done by the Offices of Pr. AG Nagaland.

### **5.7 Challenges and limitations**

Since this is the first exercise for the State, there has been numerous challenges and limitation in preparation of the Natural Resource Accounts, some of which are discussed below:

- *Delay in validation of data* – There has been delay in furnishing of reply to queries issued by joint NRA team during validation carried out at the offices of the Geology & Mining department as well as validation by the State Government resulting in delay in the processing of this report.
- *Extraction and royalty figures* – These were to be readily available as per the system in place where the Reserve Stock of Minerals, Demand Collection and Balances records should capture all data. However, the same are not readily available with the concerned Departments resulting in delay of compiling the Asset Account. The production figure/quantity could not be ascertained by the department due to erratic and inconstant deposit of coal.
- *Stock of minerals* - Though data on stock of minerals as on the opening date of the year of Asset Account was furnished by the concerned Departments, the data is not uploaded on IBM.
- *Information on minor minerals* –information on minor minerals, both physical flows and market prices was not available. These figures had to be collected from the various departments of State Government.
- *Geo-tagging/fencing not yet complete* – Due to unique land holding system {Article 371A(1)(a)(iv)} of the constitution in the State where ownership of land both surface and sub-soil vest with the community/individual, satellite monitoring of all the mineral resources is difficult. Geo-tagging/fencing is yet to be initiated by the department.
- *Uploading data in IBM-* Data yet to be uploaded in the IBM.
- *Non-availability of ready-to-use data* - The State is yet to develop/adopt electronic mechanisms for issuance of mining permits, nor any system for automatic periodic reporting of extraction/transportation of minerals had been initiated so as to make



the data on extraction/transportation readily available.

- *Absence of cross verification mechanism* – Even though both Geology & Mining and Forest Departments have their departmental check gates/weighbridge points, there is no data available for cross verification. Since, no mechanism exists for measuring actual extraction of coal/minerals by Departmental agencies other than Village Councils, chances of illegal mining of mineral/coal and transportation/exporting from the State of the same cannot be ruled out.
- **Other challenges:**
  - Royalty receivable and royalty actually received not readily available.
  - Non-availability of Average market value with the State Economics & Statistics Department.
  - Manpower crunch in the concerned departments.

### 5.8 Asset Accounts on Mineral & Energy Resources

Effective implementation of a system of generating Asset Accounts on Mineral and Energy Resources in the State would aid in evidence-based good governance and have the following specific advantages:

- *Preparation of NRA and meet the commitment made to meeting SDGs and SEEA framework.*
- *Resources at a glance - a one pager document on State-wise major and minor minerals.*
- *Compilation of physical and monetary values to enable cross verification of revenues vis-à-vis actual extractions.*
- *Provide pace of exploitation – to bring out sustainability of resources.*
- *Analysis of revenue vis-à-vis market value/export value will make it easier to assess and review the royalty rates – to protect State's revenue interest.*
- *Enable assessment of revenue streams for the future.*
- *Mine-wise data on resources – pan India.*
- *Enabler of identification of alternate resources (economic as well as energy).*
- *Close monitoring on illegal mining, and*
- *Progress on commitment made at COP 26.*

Consolidating the Asset Accounts will help with an outline of resource bases across the State adding immense value towards the planning for resource exploitation and policy framing for the present as well as sustainability of resources for the future generations.

## 5.9 Asset Account –the tables

The Natural Resources Account on Mineral and Energy Resources for the period from April 2020 to March 2021 the core data on opening stock, addition, reduction and closing stock (Part one). Part two deals with physical flow of the resources along with its sustainability and Part three deals with valuation of the resources could not be work out. Besides these three parts, analysis and use of renewable energy in the State was attempted. These are mentioned in succeeding paragraph.

### 5.9.1 Asset Account –Table 1

**Basic Asset Account** - The basic data capturing the physical flow of the resources was prepared in Table 1 below:

Table 1							
Basic asset account on Mineral & Non-Renewable Energy Resources							
Particulars	Name of Resources						
	Coal	Limestone	Petroleum & Natural Gas	Ni-Co-Cr bearing Magnetite	Decorative and Dimension Stones	Clay	Sand, Gravel, Boulder etc.
<b>Opening stock of environmental asset</b>	492.68	423.809	598.98	13.31	317.03	20.00	NA
<i>Growth in stock</i>							
<i>Discoveries of new Stock</i>		7.59		5.38			
<i>Upward reappraisals</i>							
<i>Reclassifications</i>							
<b>Total addition of Stock</b>	<b>0</b>	<b>431.399</b>	<b>0</b>	<b>18.69</b>	<b>0</b>	<b>0</b>	<b>NA</b>
<i>Extraction</i>	0	0	0	0	0	0	NA
<i>Normal loss of Stock</i>							
<i>Catastrophic loss</i>							
<i>Downward reappraisals</i>							
<i>Reclassification</i>							
Total reduction in stock	0	0	0	0	0	0	NA
Valuation/Revaluation of Stock * (revenue receivable/actual market price) as in table 3							

Closing Stock of environmental assets	492.68	431.399	598.98	18.69	317.03	20.00	NA
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The above Table was prepared on basis on data provided by Geology & Mining Department.

### 5.9.2 Asset Account –Table 2

**Physical flow of the resources** - The Subsidiary Asset Accounts on physical flow of the resources along with sustainability of the resources is prepared in Table 2 below:

Table-2									
Asset Accounts on Physical flow of Minerals and Non-Renewable Energy Resources for the year 2020-21									
Classification	Name of minerals with grade (wherever available)	Opening Stock of proved reserves	Addition to Stock (G1/G2/G3/G4)	Reduction in Stock (Qty. Tonne/Cum)				Closing Stock of proved reserves	Sustainability of resources in years (closing stock vis-a-vis total extractions )
				Govt. Sector	Private Sector	Other Extra-ction	Total Extracti on (in Million Tonne/C um)		
(In Million Tonne/Cum as the case may be)									
Major Minerals	Coal	492.68	0	0	0	0	0	492.68	***
	Lime Stone	423.809	7.59	0	0	0	0	*431.399	***
	Ni-Co-Cr bearing Magnetite*	13.31	5.38	0	0	0	0	*18.69	
	Petroleum & Natural Gas**	598.98	0	0	0	0	0	598.98	
Minor Minerals	Decorative and Dimension Stones	317	0	0		0	0	317	***
	Clay	20	0	0		0	0	20	***
	Sand, Gravel, Boulder etc.	N/A	0	0	0	0	0	0	***
*No production/extraction activities of limestone and Ni-Co-bearing Magnetite in the State									
** Extraction of Coal by the Land Owners in the State									

\*\*\* Sustainability could not be worked out

**Addition to stock** – During the reported period, no data on addition to stock in respect of Coal, Petroleum (Major Mineral), Decorative Stone and Clay (minor minerals) was provided by the concerned Departments. However, addition in stock of Limestone (7.59 million tonnes) and Ni-Co-Cr bearing magnate (5.38 M.T.) were reported.

**Reduction in stock** –Extraction/reduction in stock comprising of Extraction by/for Government Sector/Private Sector, Other Extraction and Mining Activities are maintained and reported by the State Government Department.

As no extraction was reported by the State Government, sustainability could not be worked out.

### 5.9.3 Asset Account –Table on riverine resources

**Riverine resources** - Sand, Boulder, Shingle & Others which is mainly found in river beds is renewable resources. However, information/ data could not be provided by the Geology & Mining and Forest Department for riverine resources except extraction of Boulders. No physical flow of riverine resources was reported.

### 5.9.4 Asset Account –Table 3

**Valuation of the resources** - Subsidiary Asset Accounts linking detailed physical flows in respect of Mineral and Energy Resources with the valuation of resource attempted. However, only the data on Government royalty is available. Hence, valuation of the resources could not be worked out.

Royalty –During the period 2020-21, State collected royalty of ₹2.19crore from coal and ₹0.21crore from minor minerals at the applicable rate.

### 5.9.5 District Mineral Foundation

Section 15A of MMDR Act 1957 (as amended in 1915), the State Government have been empowered to create District Mineral Foundation in the district where minor mineral extraction is carried out wherein the holders of concessions related to minor minerals would make payments to be used for the benefit of the persons or areas affected by mining.

There is no District Mineral Foundation in Nagaland. Extraction of Minerals and other Natural Resources are carried out by land owners/Village Council after obtaining licenses from the Government. On the basis of extraction of Natural

Resources, royalty is paid by the licensees who are collected by the Village Council and in return the village council collects Naga Commission @ 10%.

### 5.9.6 Generation of renewable energy resources

Information/data on progress of generation of renewable energy resources in the State during 2020-21 as provided by Nagaland New & Renewable Energy department is in Table 4.

(Table -4)

#### Progress in generation and use of renewable energy resources

Sector	Energy requirement by sector during the year (in MWH/GWH)	Total energy requirement in the State (in MWH/GWH)	Generation/additional generation of energy during the year (in MWH/GWH)							Percentage Share of non-renewable energy resources vis-à-vis total requirement		Energy surplus or deficit including total MWH/GWH of deficit/surplus power
			Non-renewable (N/R) energy/Fossil fuel sources (MWH/GWH)	Renewable energy					Total	NR	Renewable	
				Solar	Wind	Hydel	Others incl Bio Mass, Waste to energy, Geothermal etc.					
Industries	62.68 MW	854.54MU	763.54 MU	3.37 MW	NIL	1.45 MW	0.58 MW	5.76 MW	Nil	0.67 %	Nil	
Domestic	233.06 MW										Nil	
Agriculture	0										Nil	
Commercial	98.58 MU										Nil	
Traction and Railways	0										Nil	
Others	282.90 MU										Nil	

Against the total energy requirement of 854.54 MU of the State during the year 2020-21, installed capacity of generation of renewable energy (solar/wind/hydel) was 5.76 MW and it is 0.67 percent in total requirement of the energy.

*Note: The above data has been verified and revised by the department and will be adopted in the next Asset Account.*

## 5.10 Findings of the study

From the above Asset Accounts prepared, the following points emerged:

- **Royalty** –There is no data available with the State Departments and IBM on item wise quantity allowed for extraction (gross).
- **Gaps between the royalties and market prices** –attributing money value with reference to the royalties/revenues combined with the market value which would aid in continuous analysis of the royalty/duty/taxes to help the public exchequer while keeping at tab on windfall gains on commercial exploitation and resale/consumption. The State Government could not provide the average market prices in absence of which such an analysis could not be carried out.
- Reduction/extraction of major minerals is not recorded by the State Government as well as IBM.
- **Illegal mining**– Errection of Mineral Check gates and mobile check gates for detection and collection of Royalties from illegal transporters was envisaged in the Nagaland Coal Policy 2014 with penalty of 50% of royalty rate per tonne over and above actual rate of royalty at the spot shall be imposed but no data is found on erection of such Check Gates. Similarly, setting up of Coal Depots and installation of Weigh Bridges within the zone of extraction of coal and boundaries of the Nagaland to conduct trade and export of coal is required but no data is available with the Department of Geology & Mining regarding setting up of Coal Depots and Weigh Bridge. Resultantly, the department could not monitor illegal mining effectively.
- Cross-verification mechanism to prevent misuse of resources and optimize revenue yields from exploitation of minerals is absent at present and needs to be implemented.
- All mining Lease holders/Trading license holders are to register themselves with Taxes Department and pay GST as per rule but no data is available for remittance of such taxes with the Geology and Mining department.
- The State is yet to introduce a mechanism to measure the energy resources.

## CHAPTER 6

### FUTURE CONTINUITY PLAN

#### 6.1 Guidelines/SoPs issued by GASAB

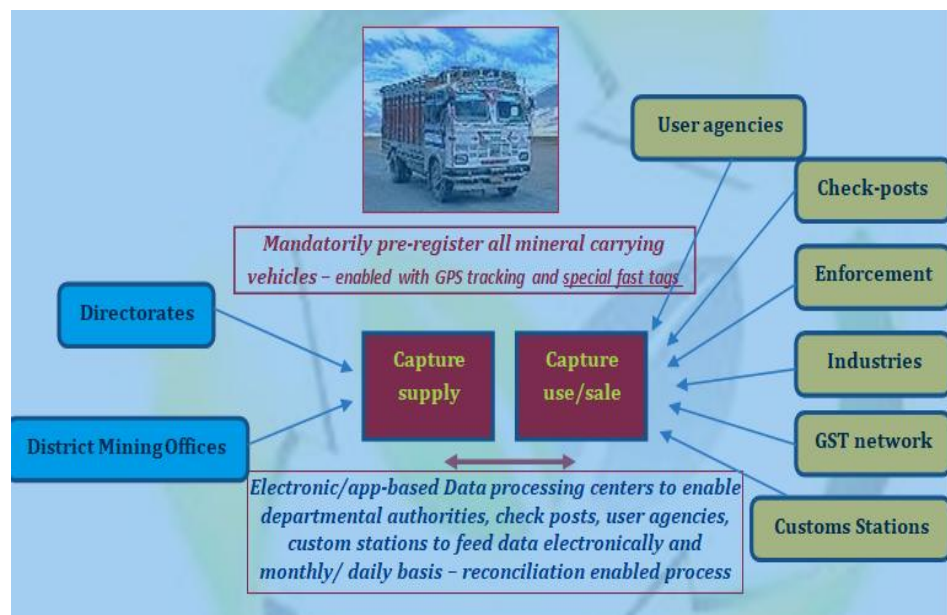
Asset accounting process for Mineral and Energy Resources is to be a continuous process now onwards. Hence, there is a need for instituting systems and procedures for regularly capturing the data on physical flows of resources, while other inputs like addition in stock, average revenues, market prices, extractions not approved by the DGM and subsequently detected by various agencies could be collected from different sources while finalizing the Asset Accounts.

GASAB has issued Guidelines/SoPs in June 2022 suggesting methodologies for quarterly reporting framework and novel initiative of mapping the supply and use of resources. This will ensure timely collection and collation of data for the Asset Accounts. The mapping of supply use of resources will enable 360 degrees profiling of mineral extraction and their use of effective management and optimisation of resources for the State exchequer. These are discussed in the succeeding paragraph.

#### 6.2 Need for mapping the supply and use/sale/export

Revenues from minerals and energy resources consists of substantial part of State's receipt and largely help the entities welfare fund and other planned activities of the States. Hence, it is imperative to implement cross-verification mechanism to prevent misuse of resources and optimize revenue yields from exploitation of minerals. A robust framework must be put in place to ensure zero tolerance on resource and revenue pilferage. There is a need for automating the systems and processes for capturing the supply/dispatch of resources allowed by the administrating department.

**Map 2:** A suggested mechanism for enhancing the control measures for optimizing monitoring on resource sale/use/consumption for better resource management and revenue yields to be adopted as per the following flow:



**Source:** Guidelines/SoPs issued by GASAB

### 6.3 Quarterly Reporting Framework

The DGM has agreed to implement the quarterly reporting framework for the Asset Account from April 2022. Prescribed formats have been circulated to District Mining Offices to submit their information on asset account on quarterly basis to DGM.

At present, the DGM will collect the information from all DMOs and submit the quarterly report to AG office manually. A meeting was held with Joint Director, DGM and all the points were discussed in detail for the preparation of Asset Account for the year 2021-22 and report for quarter ending June 2022. The department has assured their full co-operation in this regard.

From the April 2022, the quarterly reporting framework for Asset Account on Minerals and Non-Renewable Energy resources has been suggested by the GASAB.

### 6.4 Recommendations for improving management of mineral and energy resources of the State and optimization of revenue yields there from

The following approaches are recommended to make the system robust and inclusive in the best interest of conservation, sustainability of resources, optimization of revenues for the State exchequer.

#### a) Statutory approach

- The State as part of enhanced statutory controls over mining activities, extractions/ productions/ dispatch and revenue yields should automate the e-permit system, with bar-coding of permits real time information sharing on permits issued pre-registration, GPS tagging of carriage vehicles with



unladen weight and special fast tags for easy monitoring of minerals carried at the weigh bridges.

- The State may consider making it mandatory for the check posts (both intra and inter-State/customs check posts at international borders)/receiving points at industries to e-verify the permits – making them invalid for re-use. Else, movement/receipt should be allowed only upon full payment of royalty, fees, fines, etc.
- The State may consider enacting laws for making the lease holders/their personnel, departmental officials, industries/their personnel authorised to receive produces - personally liable for recovery of royalty, fees, fines, etc., in cases of movement/acceptance/consumption of minerals without valid permits/multiple use of permits. Also, enhancing the nature and quantum of penal measures to act as high deterrent on illegal mining activities.
- The State may consider introducing rewards scheme in the lines as prevalent in Central Excise and Customs Department for suitably rewarding the informers/Officers/whistle blowers leading to detection of illegal mining.

#### **b) Other approach:**

The following could consist of the probable steps (in addition to those taken/being taken by the States) leading to a complete monitoring mechanism on usage/sale of mineral produces.

- Statutory interventions for ensuring strict monitoring on permitted mining activities and deterring illegal mining and their sale/use as discussed under statutory approach.
- Mapping the contact points through which minerals are passed within and outside the State/country, user agencies, consuming industries, wholesale/bulk selling points (getting them registered similar to the practice in Forest Department to register the sawing mills).
- Establishing seamless flow of information from these sources to the Directorates managing the resources on usage and sale of resources and their continuous validation vis-à-vis the e-permit system.
- Installing systems for automated verification mechanisms as above to raise red flags on unauthorised supply/consumption of minerals – issuing notice for further action.

For further detail recommendation in Chapter VII of compendium of Asset Accounts on Mineral and Energy Resources released by GASAB in October 2022 may be referred ([https://gasab.gov.in/gasab/pdf/ Compendium-of-Asset-final.pdf](https://gasab.gov.in/gasab/pdf/Compendium-of-Asset-final.pdf))

#### **d) Need for GPS/geo-tagged district-wise mineral maps**

The GPS/geo-tagged district-wise mineral map would help in consolidation at the national level for providing precise data on availability of resources across

the country along with their pace of extractions, revenue generations, market values, available stock of resources. Mine and Resource wise collection of GPS co-ordinates will help in creation of resource-wise maps by each States with mine indicators as per their GPS co-ordinates.

Gradually, other data sets like that of Indian Bureau of Mines, Directorate of Hydrocarbons, etc. could be possible to be mapped into these GPS enabled mapping system for resources. Requisite mapping could be enabled navigating the readers to the latest Asset Accounts providing information on total stock of resources in the district, annual extraction, revenue realised, and other details captured through our Asset Accounting processes in the districts and compiled State-wise. State of Maharashtra has prepared district wise mineral map with GPS/geo-tagged.

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## Annexures

State NRA Cell-list and contact details	Annexure-I
Minutes of meeting of State NRA Cell	Annexure-II
Statement Showing the number of Mines/Block areas covered	Annexure-III

**Annexure-I**  
**List of NRA Cell**

Sl. No.	Name of the Office	Name of the Officer/Official	Designation	Email id	Mobile No.
1	O/o the Principal Accountant General (Audit).	Shri Vivek Kumar Bhaskar (Convenor)	Sr. Dy. Accountant General (Audit)	bhaskarvk@cag.gov.in	9318907782
2	O/O the Principal Accountant General (A&E)	Shri Kahoto J Yepthomi,	Senior Deputy Accountant General (A&E).	yepthomij@cag.gov.in	7005162971
3	Finance Department, Government of Nagaland	Shri Neiseru Miachieo	Deputy Secretary	Neiser. miachieo@gmail.com	9862011316
4	O/o the Principal Accountant General (Audit)	Shri Gautam Majumder	Sr. Audit Officer (FINAT)	gautam_mzdr.nld.sca@gov.in	9436434088
5	O/o the Principal Accountant General (Audit)	Smt. Nempi Khongsai	Assistant Audit Officer (FINAT)	Nempkh.nld.sca@gov.in	9436832674
6	O/O the Principal Accountant General (A&E)	Shri Shaji K	Senior Accounts Officer, (Book, VLC-I, GE-I)	shajik.nld.ae@cag.gov.in	9402035192
7	O/O the Principal Accountant General (A&E)	Shri Swapan Kumar Paul	Assistant Accounts Officer	swapankumarp.nld.ae@cag.gov.in	9402489710
8	O/O the Principal Accountant General (A&E)	Shri Ashim Kumar Dey	Senior Accounts Office, (Finance. WM, AC and Loan)	deyashimk.nld.ae@cag.gov.in	9101163683
9	Directorate of Geology & Mining, Nagaland, Dimapur	Er. Kerieszizo Sachu	Joint Director (Mining)	<a href="mailto:geominenaga@gmail.com">geominenaga@gmail.com</a>	9436000575
10	-do-	Shri Asingbow Newmai	Geologist	nasingbow@gmail.com	9856084075

## Annexure-II

### MINUTES OF THE MEETING OF THE STATE NATURAL ACCOUNTING CELL HELD ON 25.06.2020 AT 12.00 NOON AT 3 IN THE CONFERENCE HALL OF THE ADDITIONAL CHIEF SECRETARY & FINANCE COMMISSIONER, GOVERNMENT OF NAGALAND

The following were present:

Sl. No.	State Finance Department	Principal Accountant General (A&E & Audit)
1	Shri Sentiyanger Imchen, ACS & Finance Commissioner	Shri E. Mhonbemo Patton, Principal Accountant General
2	Shri V. Kezo, Special Secretary (Finance)	Shri Uttam Chanda, Deputy Accountant General (A&E)
3	Shri Taliremba, OSD (Finance)	Shri Chibemo Shitirie, Sr. Audit Officer
4	Shri R. N. Yanthan, Principal Director, Treasuries and Accounts	Shri Samar Mondal, Sr. Audit Officer
5	Shri Neiseru Miachieo, Deputy Secretary (Budget)	Shri Rajesh Pan, Sr. Audit Officer
6	Shri Ketoulhou Metha, Sr. Research Officer (Budget)	Shri Akum Chuba, Sr. Accounts Officer
7	Shri Vichiso, Sr. Treasury Officer, Kohima (North)	Shri Shaji K, Sr. Accounts Officer
8	Shri Noletho Nyuwi, Sr. Budget Analyst	
9	Shri S. Bhattacharjee, Budget Analyst	
10	Shri Aoyanger, Asstt. Budget Analyst	
11	Shri N. Imnalemba k char, Asstt, Budget Analyst,	

The Additional Chief Secretary & Finance Commissioner, warmly welcomed all present and requested to Principal Accountant General to initiate the discussion. PAG warmly congratulate the ACS&FC for taking over the new assignment and thanked him for meeting. PAG informed that such meeting between the Finance Department and PAG Office are held regularly to resolve outstanding issues and identify actionable points for way ahead. He stated that the last meeting was held on 4.3.2020 and thereafter this first meeting after partial relaxation of Covid-19 lockdown restrictions.

Thereafter the PAG briefly recapped the purpose of the meeting, which was to discuss (i) The State Government has been earlier informed that the C&AG office intends to include information on Natural Resources Accounting as additional information to the Finance Accounts Vol-I. The matter was once again discussed for obtaining the views/opinion of the State Governments. In this regard, the ACS&FC requested PAG to obtain due approval & share the draft NRA.

The meeting ended with a vote of thanks to all.

**ANNEXURE-III****Statement Showing the number of Mines/Block areas covered.**

Sl. No.	Name of the Mines	Name of the District	No. of mines covered	Block/ Mines Area
1.	<b>Coal</b>	Mokokchung.	3	1) Northern Khar, 2) Changki & 3) Merkiyong Coal Block)
		Mon	1	1) Borjan & Tiru.
		Tuensang	1	1) Konya
		Wokha	1	i) Coal bearing areas of Wokha Dist.
		Longleng	1	i) Coal bearing areas of Longleng Dist.
		Kohima	1	i) Coal bearing areas of Kohima Dist.
		Dimapur	1	i) Coal bearing areas of Dimapur Dist.
2.	<b>Limestone</b>	Kiphire	7	i) Mimi-Pyakatsu, (ii) Longpotrop (iii) Mimi Kheti, (iv) Khonga, (v) Kamku (vi) New Basti (vii) Salumi Block.
		Phek.	7	i) Wazeho, (ii) Satuza, (iii) Moke, (iv) Phokungri, (v) Ziphu, (vi) Mollen, (vii) Reguri
3.	<b>Magnetite Iron Cobalt Chromium</b>	Kiphire	1	i) Phokphur Block
		Phek.	3	i) Mollen, ii) Jopi & iii) Ziphu Block
4.	<b>Petroleum &amp; Natural Gas</b>			Stretching from West of Peren District to West of Mon District.
5.	<b>Decorative and dimension Stone</b>		11	11 District of Nagaland: Kohima, Mokokchung, Tuensang, Phek, Mon, Zunheboto, Peren, Longleng, Kiphire, Dimapur and Wokha.
6.	<b>Clay</b>		2	Dimapur and Jalukie Valley areas.

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