



सत्यमेव जयते

NATURAL RESOURCE ACCOUNT OF JAMMU AND KASHMIR FOR THE YEAR 2020-21 MINERAL & ENERGY RESOURCES



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Government of Jammu and Kashmir

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

November 2023



MESSAGE OF UT GOVERNMENT

Dr. Arun Kumar Mehta
IAS



Chief Secretary
Jammu & Kashmir

MESSAGE

I am pleased to see the publication of the first Natural Asset Accounts of the Union Territory of Jammu and Kashmir for Mineral and Energy Resources.

J&K is a storehouse of resources of economic importance like Limestone, Gypsum, Granite, Marble, Decorative Stone, Quartzite, Magnesite, Slate, Sapphire, Bauxite, Sand, Boulder, Sandstone and Clay. These resources provided by nature contribute significantly to the earnings of the Union Territory. The Government of Jammu and Kashmir is committed to the goals of environment sustainability and judicious use of these resources.

The Comptroller and Auditor General of India's initiative to compile the first Natural Asset Accounts for J&K is a welcome step being systematic way of capturing the database on periodic basis on available natural resources interlinked with important factors like revenue and cost in exploitation of such resources.

Presently, in J&K various mining leases of Limestone, Gypsum and River Bed Mining Blocks are being commercially exploited. Minerals play an important role in the development of economy by providing inputs of basic raw material for industrial growth. However, over-exploitation could lead to damage beyond repair to the existing deposits of minerals. Thus, the Asset Accounting shall give an input for the need of mineral conservation, optimum utilization and eco-friendly mining of mineral resources as well as to give thrust on exploration for depleting mineral assets.

Moreover, such Asset Accounts will supplement the UT Government's efforts in assessing the contribution of the natural resources to the revenues, monitoring the sustainability of such resources, besides effective policy making and achieving National and International obligations like the sustainable development and climate change goals.

I hope that the publication will prove of immense help for all the stake holders and will be taken forward for implementation. I extend my best wishes for great success to project NRA.

(Dr. Arun Kumar Mehta)

MESSAGE FROM THE PRINCIPAL ACCOUNTANTS GENERAL

Natural Resources are materials from the Earth that are reused to support people's needs. Any natural substance that humans use can be considered a natural resource. Oil, coal, natural gas, metals, stone and sand are natural resources. Other natural resources are air, sunlight, soil and water. Natural Resources play a pivotal role for economic development of a country and are crucial for their inbuilt values of inter-generational equity and sustenance. Natural Resource Accounting is a process of having a consolidated database on availability and physical extraction/use of natural resources, revenue generated therefrom, expenditure incurred on extraction and mitigation of environmental degradation viz-a-viz keeping necessary stock of resources for our future generations.

The Government Accounting Standards Advisory Board (GASAB) under the aegis of the Comptroller & Auditor General of India's spearheaded the implementation of NRA in India by proposing Concept Paper on NRA in July 2020 which would serve as the stepping stone for building up a robust framework of NRA in the Country which will not only help in meeting international commitments but would also aid in evidence based decision making by the policy makers.

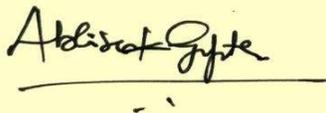
Jammu & Kashmir is the sole holder of country's sapphire resources. Coal, gypsum and limestone are the important minerals produced in the UT. As far as hydro-power potential is concerned it could exploit only about 16 *per cent* of the estimated 20,000 MW of hydro-power potential.

As per the Energy Statistics India Report 2022, with the potential of 1.1 lakh MWs of solar energy, J&K has the second-highest potential of harnessing renewable solar energy in India. However, the report mentions that despite having a capacity to generate a huge quantity of solar energy, the UT is generating only 20.73 MWs of installed capacity of grid-interactive renewable solar power.

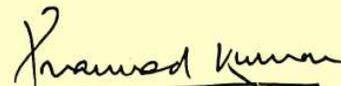
This exercise of preparation of Natural Resource Accounts (Mineral & Energy Resources in the UT of Jammu & Kashmir) is one of its kind in the UT, as it has been prepared through the joint efforts of the two offices of Pr. Accountant General (A&E) and Pr. Accountant General (Audit) and the UT departments. A NRA cell has been set up comprising of members from departments concerned and AG offices. The NRA cell has been meeting periodically to exchange information and ideas.

We are confident that in the years to come, the exercise of Asset Accounting will extend to all the known natural resources.

We would like to place on record our gratitude to GASAB wing of Hqrs, NRA team of this office and all stakeholders for their help and inputs while preparation of this report. This office will also like to express its appreciation to Mr. Sudipto Biswas, (Sr AO) GASAB whose continuous efforts at the Headquarters' level helped the office in the preparation of this draft report within the targeted timeframe.



(Dr Abhishek Gupta)
Principal Accountant General (A&E)
Jammu & Kashmir, Srinagar



(Pramod Kumar)
Principal Accountant General (Audit)
Jammu & Kashmir, Srinagar

Executive Summary

The GASAB Secretariat in C&AG's Office has come out with a Concept Paper on NRA in India in July 2020 which, inter-alia, envisaged a three-term plan for implementation of NRA in India in consonance with the strategy enshrined in the System of Economic and Environmental Accounting–Central Framework of the UN.

Besides the plans, the Concept Paper also suggested the templates for preparation of Asset Accounts on Mineral & Energy Resources. Simultaneous to the release of the Concept Paper, pilot studies were initiated (August 2020) in three States namely Goa, Meghalaya and Rajasthan which have successfully completed the studies, preparing the model Asset Account on Mineral and 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/UTs. First draft Asset Accounts was targeted for the year 2020-21 to be completed by 2022.

Subsequently, in view of the national declaration at the Conference of the Parties (CoP) 26, efforts were made by GASAB to incorporate templates for collating information on progress in generation of renewable energy in States/UTs. 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 CoP 26.

The work on preparation of the Asset Accounts in the Union Territory of Jammu & Kashmir commenced with joint efforts of the Accountants General Offices and the UT Government. This Report presents the first draft of the Asset Accounts on Mineral and Energy Resources in the Union Territory of Jammu & Kashmir.

Effective implementation of a system of generating Asset Accounts on Mineral and Energy Resources in the UT 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/UT-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/UT’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:

- A dedicated Natural Resources Accounting (NRA) Cell was formed comprising the officials of Principal Accountant General (Accounts & Entitlement), Principal Accountant General (Audit) and Nodal officer of UT Government to take initiatives for preparation of Accounts and coordinating with the UT Government Departments and also to sensitise the need for preparation of NRA.
- GASAB wing of C&AG's office identified Mineral and Energy resources first in the process of preparation of Asset Accounts and there after inclusion of other resources land, water, forest and wild life in phased manner. In order to prepare the Asset Account for Mineral and Energy Resources a Consultative process was developed with the Mineral Resources Department and Energy Department of Government of Jammu and Kashmir.
- The officials of Directorate of Geology and Mining and Energy Departments provided the requisite data/information to the office of Principal Accountant General (Accounts & Entitlement) for preparation of Asset Accounts.
- As envisaged in the Concept paper and also in Guidelines/Standard Operating Procedures (SOPs) validation and limited verification of accounts are done in two stages, first by the concerned Department and then by the Local Audit Office. The changes/modifications after the validation and limited verification were adopted in the Accounts before being finalised, physically and electronically.

Major findings

- i) District wise Market Value of the minor minerals was not available as such the accuracy of the true market value of the resources cannot be ensured.
- ii) Leasewise data about of extraction/production, sale of the minerals, royalty, dead rent, surface rent and other taxes receivable were not readily available in the Directorate of Geology and Mining (DGM).
- iii) There was no robust system of collection of data regarding royalties from District Mining Offices (DMOs) and lease holders and its reconciliation.
- iv) There is difference between Opening balances of proven reserve as on 01/04/2015 available with official site of Indian Bureau of Mines (IBM) and that provided by the Directorate of Geology and Mining.
- v) Variation between production/extraction as compiled/reported by the UT Government and Indian Bureau of Mines (IBM) was observed.

Exclusion:

- i) Opening Balance in respect of Sapphire and Coal are not available with the concerned Departments of UT of J&K.

Recommendation:

- i) The concerned UT Government Departments may maintain and update leasewise, mineral wise proper books of accounts of extraction/production, sale of the mineral and leasewise royalty and other taxes receivable and other allied records.
- ii) Automated/manual systems may be put in place for regular flow of information from the points of production, extraction/sale to ensure end-to-end veracity of actual extraction data.
- iii) Mineral wise details of collection under the DMF may be maintained.
- iv) A system to record regularly issue of market value of all the minerals by the District Offices may be developed to assess the correct market value of their sources of the UT.
- v) A system of regular reconciliation of data with IBM should be put in place to have greater reliability on data compiled.
- vi) District and mineral wise data of monthly production and dispatch of minor minerals by the quarry lease holders of the entire UT should be maintained on periodic basis for further facilitation in compiling the data for preparation of Asset Accounts.
- vii) Reporting mechanism should be established for all minerals to keep check on over-extraction of minerals against the permitted extractions during the year to have a greater control on illegal mining.
- viii) Separate Detail heads and Sub-detail heads may be opened in the UT budget to capture Mineral wise information on royalties, penalties, fees etc.

Disclaimer

Preparation of Asset Accounts is part of four-stage implementation strategy coined by the System of Economic and Environmental Accounting–Central Framework. This inturn 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 endeavour 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/UTs is only aimed at handholding the States/UTs 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 UT Government stabilizes, UT 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 UT Government and GASAB/CAG of India disclaims any responsibility for their correctness/inclusivity.

The limited verification done by Audit Office intends to check on a test basis that data/information is supported by primary document maintained in the offices of the concerned departments.

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 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 ecosystems and environmental resources for future sustainable economic and social development need to be understood for effective policy interventions.



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

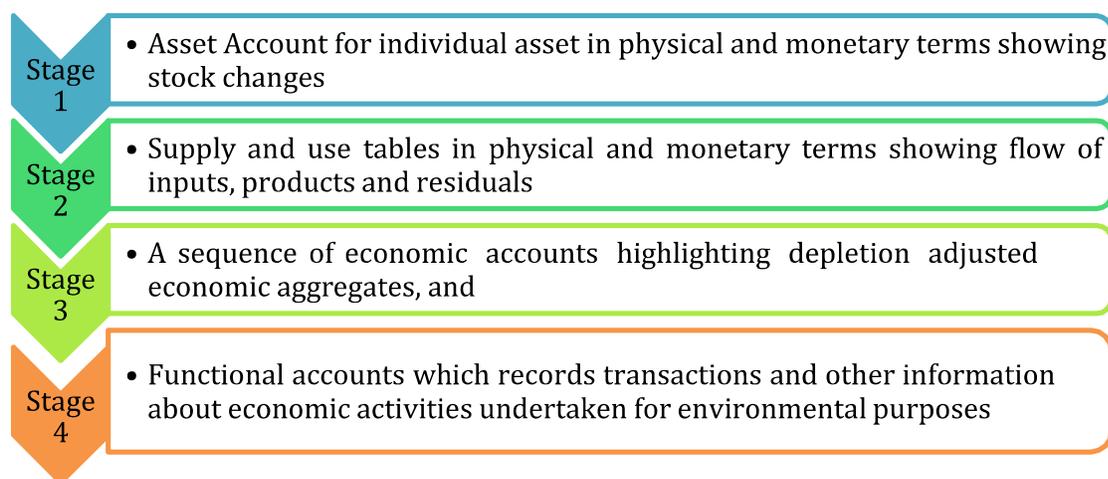
Natural resources play a vital role in the sustainable economic development of any country. They need to be exploited in a sustainable manner so that the future generations can also avail of their advantages. The rampant over-exploitation of these resources in recent times has resulted in harmful impact 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 shortcoming 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 GDP to arrive at Green GDP. It would assist in taking policy decisions in respect of matters affecting environment directly and indirectly and bring us in a position to use our resources on a more sustainable basis and reducing the negative impact on the environment.

In keeping with the developments, the United Nations has been working towards an universally acceptable framework on environmental resource accounting which culminated into release of the System of Economic and Environment Accounting - Central Framework (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 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

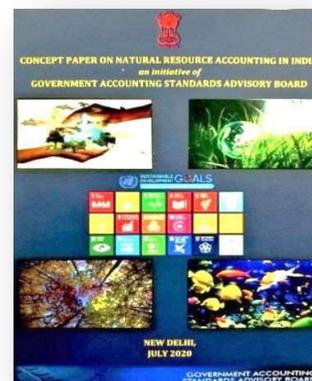
IMPLEMENTATION OF NRA IN INDIA–GASAB’S ENDEAVOUR

2.1 About (GASAB) Government Accounting Standards Advisory Board

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 SDGs and Climate Change, international progress on environmental accounting and merger of the concept with economic environmental accounting, progress in other countries. GASAB has suggested a well laid out implementation plan divided into three term goals inconsonance with the strategy envisaged by the SEEA–CF.

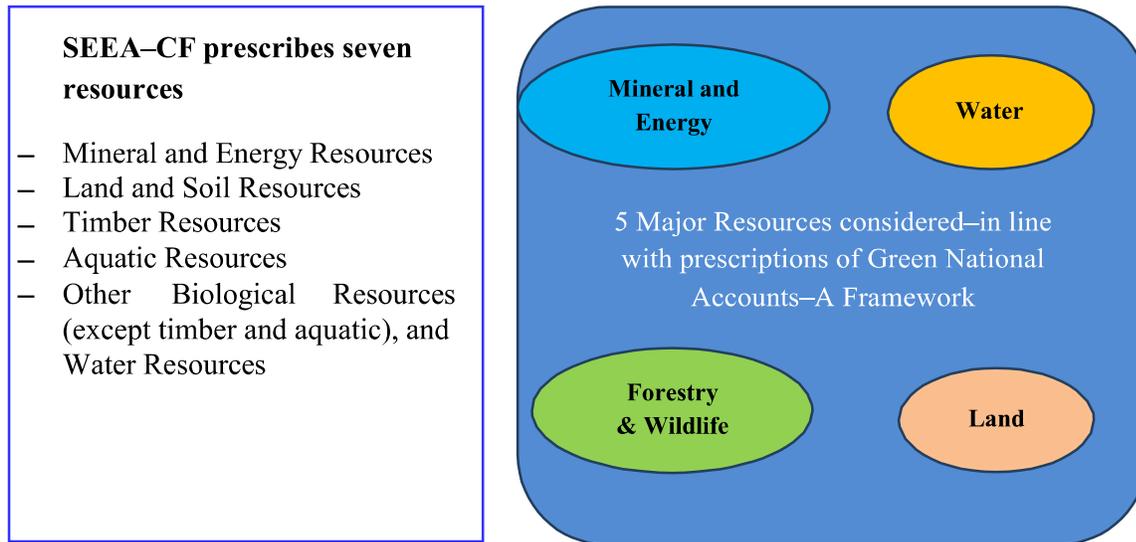


The Paper, *inter-alia*, envisaged short, medium and long term goals in consonance with the four stage strategy suggested by the SEEA Framework, as mentioned below:

Short term goals	Mid-term goals	Long term goals
1. Preparation of Asset Accounts on Mineral and Energy Resources in States/UTs 2. Initiation and preparation of disclosure statement on revenues and expenditure related to natural resources <i>(2019-20 to 2021-22)</i>	1. Preparation of National Asset Accounts on Mineral and Energy Resources 2. Preparation of Asset Accounts in respect of other four resources namely water, land and forestry & wild life resources in the States/UTs 3. Preparation of supply and use tables in physical and monetary terms showing flow of natural resource inputs, products and residuals. <i>(2022-23 to 2024-25)</i>	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. <i>(2025 -26 onwards)</i>

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 & Wild life 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 therein and the importance of non-renewable resources discussed above

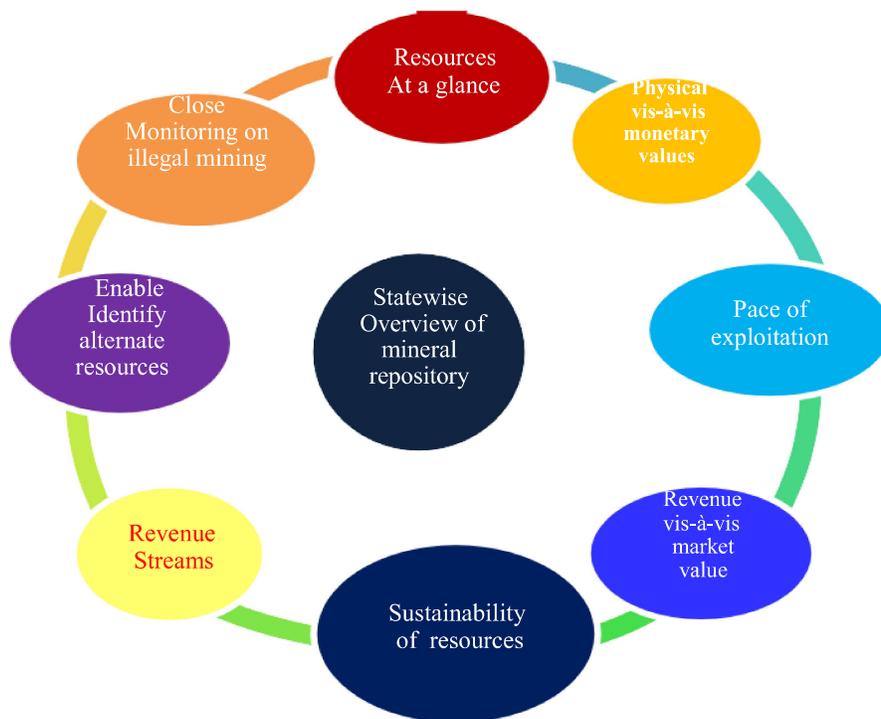
Mineral & Energy Resources, being non-renewable resources have been considered as the first goal

Coupled with the prescription of SEEA that a 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 data base 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 and ensuring evidence based good governance, adoption/adaption of SEEA besides attaining other pressing international obligations like the Sustainable Development Goals and Climate Change.

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



Thus, the Asset Accounts, once compiled, has the potential of multi-pronged advantages for the States/UTs in particular and the country at large as summarized below:

Resources at a glance: The Asset Accounts would enable a one pager document on their source availability of each State/UT.

Provide invaluable information and datasets on mineral repository and potential of States/UTs –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 realisation of revenues vis-à-vis extraction of resources to help in identifying case of leakage of revenue.

Pace of exploitation: Down the years, 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 - in years.

Revenue vis-à-vis market value: As cribbing 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.

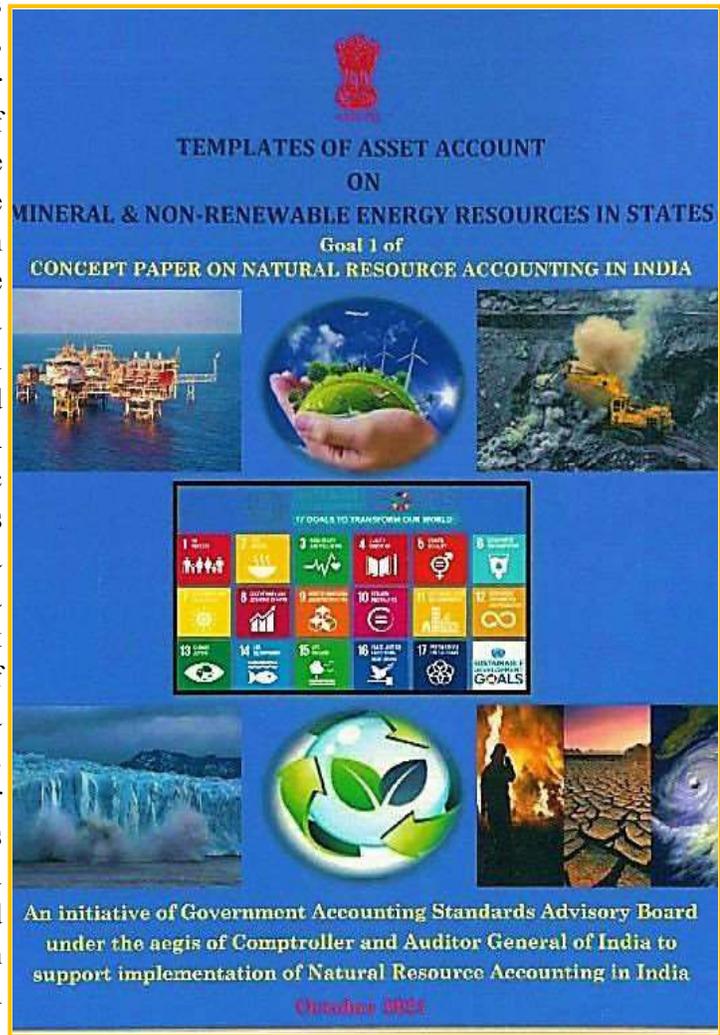
Sustainability of minerals in years – when analysed with revenues, has the potential to point towards revenue streams for future and will also enable States/UTs to identify alternate resources –both economic and energy resources.

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 thereby aiding in conservational efforts and restricting environmental degradation due to unscientific and unsustainable mining activities.

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 Energy Resources have been finalised 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 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 data base 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 Energy Resources in States/UTs in October 2021.



The formats were constantly updated with inputs and experiences gained through their implementation in the States/UTs 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), Information on illegal mining (Table 3A) analysis of extraction, production and dispatch of resources (Table 4), and collection under district mineral foundation (Table 5).

2.7 Additionalities—monitoring the targets committed to COP -26

At the United Nations Climate Change Conference of 2021 or the COP 26, the Government of India committed the following:

1. *India will take its non-fossil energy capacity to 500 GW by 2030.*
2. *India will meet 50 per cent of its energy requirements from renewable energy by 2030.*
3. *India will reduce the total projected carbon emissions by one billion tonnes 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 generation of new and renewable energy have been envisaged as Table-6

Jammu and Kashmir has a huge quantity of biomass by-products, which can be utilized for electricity generation by the use of solar energy, biogas, gasification technologies, etc. Jammu and Kashmir is fairly untapped in the field of the wind energy. However, there is a significant scope of harnessing wind energy in different districts.

Jammu and Kashmir has exploited only about 16 per cent of the estimated 20,000 MW of hydro-power potential even as the energy demand has been growing gradually creating a wider demand-supply gap,

As per the Energy Statistics India Report 2022, with the potential of 1.1 lakh MWs of solar energy J&K has the second-highest potential of harnessing renewable solar energy in India. However, the report mentions that despite having a capacity to generate a huge quantity of solar energy, the UT is generating only 20.73 MWs of installed capacity of grid-interactive renewable solar power.

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 Centre (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/UTs.

2.9 Training and capacity building

As the Concept Paper envisaged commencement of the project from States/UTs, 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/UT Government Departments as well. Accordingly, virtual trainings/work shops were continuously held over the time of implementation of the project. Besides, State specific workshops were also held in several States/UT like Jammu & Kashmir, Gujarat, Jharkhand, Karnataka, Punjab etc.

2.10 Onboarding and handholding the States/UTs

In order to take the States/UT authorities on board as one of the most vital stakeholders in the implementation process, the highest echelons in the States/UTs were demi-officially informed (September 2021) by the Deputy CAG & Chairperson, GASAB about the endeavour of GASAB and vision of the project which was followed up with virtual presentations to the States. Seven virtual meetings were held in August – September 2021 covering 28 States/UTs. The views/suggestions emanating out of these meetings were taken into consideration in updating/modifying the templates.

After release of the templates, monthly virtual meetings were held with all the 28 States/UTs in which the project was being run from October 2021 till March 2022 or such time the Asset Accounts were finalised in the States/UTs.

CHAPTER- 3

INITIATIVES IN THE UNION TERRITORY

3.1 Formation of UT NRA Cell

In 2019, GASAB has taken the initiative to develop a framework for implementing NRA as a nationally important project. All the States/UT's were directed to form an NRA cell in their respective States/UT's having representation from both State/UT and Accountant Generals office.

In the Union Territory (UT) of Jammu & Kashmir, a three member NRA cell was formed in February-2021 with the consent of UT Administration. The three-member cell comprises of Sr. Dy. Accountant General AMG-III (Audit Office), Sr. Dy. Accountant General Admn (A&E office) and Sh. Rajneesh Gupta, Additional Secretary to Govt. of J&K Finance Department (Nodal Officer). Besides, two Sr. Accounts Officers from O/o the Pr. Accountant General (A&E) (one each from H.O. Srinagar and one from Branch Office, Jammu) and one Assistant Audit Officer from O/o the Pr. Accountant General (Audit) are also part of NRA cell. The NRA cell is working in close coordination with all the concerned departments of UT Administration and it was with their cooperation that the first Asset Account of the Minerals and Energy Resources was prepared. The list of officers of NRA cell is at **Annexure-1**

3.2 Follow up, trainings and capacity building

The matter regarding preparation of Asset Accounts was taken up with the Additional Secretary to Govt. of J&K Finance Department (Nodal Officer) of the UT Administration, Director General Accounts & Treasuries, Director Geology & Mining, Managing Director J&K Minerals, Chief Executive Officer, Jammu & Kashmir Energy Development Agency (JKEDA), Managing Director, J&K Power Development Corporation Ltd (PDCL), Managing Director, J&K Power Transmission Corporation Ltd. (JKPTCL), Managing Director, J&K Power Corp Ltd (JKPCL), Executive Director, National Hydro Electric Power Corporation Ltd. (NHPC) Regional Office Jammu.

An interactive meeting on National Resource Accounting (NRA) *viz-a-viz* Preparation of Asset Accounts for Energy and Mineral Resources was organized by this office on 18th April 2022 at Srinagar. The meeting was attended by the officers from Directorate of Geology & Mining, Directorate of Accounts & Treasuries. The aforesaid meeting was also attended by the representative from NRA wing of O/o the C&AG of India. During this meeting a detailed outline of NRA account was presented to all the stakeholders. In continuation of this meeting several department specific meetings were conducted by the NRA team of this office to handhold the stakeholders at Srinagar. Minutes of meeting is attached as an **Annexure-2**.

In this series, similar department specific meetings were conducted at Jammu Province too to hand hold and sensitize the various stakeholders on May 19, 2022 and June 28, 2022. The meetings were attended by the Member Secretary (PCB), Regional Director (Social Forestry), Dy. Director (Ecology & Environment) and J&K Minerals. During these meetings, UT Administration was requested to train all the staff members working under their control so that the data/information for Asset Accounts in future is prepared as per the SOPs/guidelines.

These handholding exercises have also helped us instill confidence in the UT Government to enable the country become compliant to the SEEA – CF framework. It also provided a platform for effective discussions and doubt clarification.

Sensitization of the officers & staff and their training:

Being a new concept, the officers and staff were sensitized with personal discussions and trainings regarding overall concept of the project. The matter was discussed with Director General Accounts & Treasuries, Director Geology and Mining and the officers of concerned departments. They were explained about the scope of the project and its importance in detail. Project was discussed in detail, action plan was prepared and officials were also trained to collect and compile data while achieving the deadlines.

Capacities building: Frequent meetings were conducted, and necessary inputs were given to them from time to time. In addition, monthly meetings conducted by GASAB Wing of C&AG's office were attended by officials of Accountants General's offices and concerned UT Departments. In these meetings experiences of various offices involved in preparation of Asset Accounts were shared, which helped not only in alleviating doubts but also in developing sound understanding of the project.

3.3 Innovations and good practices

The Geology and Mining Department established in 1960 with the objective to explore the mineral wealth of the J&K by way of Geological investigation aided with Exploratory Mining, Drilling, and Chemical/Mineral testing techniques to prove the quality and quantity of deposits to promote the mineral based industry in J&K. The State of Jammu & Kashmir (now UT) was regulating the mineral concession in respect of Minor minerals interms of rules namely J&K Minor Minerals Rules, 1962 issued vide SRO 58 of 1962 dated 10.04.1962 framed in exercise of powers conferred under sub-section (i) of section 15 of the Mines and Minerals (Development and Regulation) Act 1957.

In the year 2012, the Hon'ble Apex Court in the case titled Deepak Kumar V/s State of Haryana, directed, all the State Governments and Union Territories to frame Rules in light of the guidelines issued/passed in the judgment itself. Accordingly, the State of Jammu and Kashmir (now UT of J&K) with a view to bring the scheme of Mines and Minerals within the ambit of the directions of the Hon'ble Apex Court and in exercise of the powers conferred under section 15 read with section 23-C of the Mines and Minerals (Development and Regulations) Act, 1957 thus framed the rules called "The Jammu and Kashmir Minor Mineral Concession, Storage, Transportation of Minerals and Prevention of Illegal Mining" Rules, 2016 notified vide SRO 105 of 2016 regulating the grant of various forms of Minerals Concession in respect of Minor Minerals and storage, transportation of mineral and prevention of illegal mining in the State now UT of J&K.

The main achievements during last two years are as under:

1. Switch over from open auction to e-auctioning of Mineral Blocks:

With an objective to invite healthy competition and transparency in allotment of minor mineral blocks, the Department of Mining, in a smooth and subtle manner switched over from open auction to e-auctioning, a dedicated e-auction Portal/Module was developed for the purpose and the department so far has successfully e-auctioned 378 Minor Mineral Blocks. This move has generated substantial direct and indirect employment besides ensuring mining on scientific lines. It has happened for the first time in J&K that the idea of transparent e-auctioning process has been construed and successfully implemented. Another take away from the e-auctioning is that it has allowed competition for all over the Country and not just restricted to the Permanent Residents.

2. Constitution of Single Window Clearance Committee:

For improving Ease of Doing Business, a District Level Single Window Clearance Committee has been constituted under the chairmanship of Deputy Commissioner concerned for facilitating the execution of mining leases of e-auction for project proponents where clearance/NOC applications have not been received or/are under process.

3. Increase in time period for securing Environment Clearance (EC) and other formalities:

In order to facilitate the process of securing many leases the time period for completing requisite formalities like submitting remaining 50% bid amount, approved Mining Plan and Environmental Clearance (EC), consent to operate, etc, By the successful bidders of e-auction after issuance of Letter of Intent (LoI) was extended from six months to one year.

4. Reserving Minor Mineral Blocks for PSUs:

To ensure the assured supply of raw materials to the Government agencies for the development of various prestigious projects in the Union Territory of J&K, 10 Minor Mineral Blocks were reserved for Public Sector Undertakings (PSUs), five each for M/s J&K Minerals Limited and M/s J&K Project Constriction Corporation (JKPCC).

5. Issuance of Short Term/Disposal permits:

For making Minor Minerals readily available to the projects of national importance operating in the Union Territory, the department has granted Short Term Permits to the executing agencies of such prestigious projects by bringing in the necessary changes in the rules governing the subject. The department, in the interest of Major Developmental Projects of Indian Railways, National Highway Authority of India (NHAI) and Airports Authority of India (AAI), including companies such as IRCON, KRCL and NHIDCL, subject to statutory clearances including environmental safeguards, has granted Short Term Permit to their Principal Executing Agencies as well.

6. Establishment of check post:

To control and monitor illegal extraction and transportation of minor minerals from the leased out areas, the department has so far established 11 Mineral check posts. There are 100 more such posts in the process of being made operational (July, 2021).

7. Regulating Stone crushers/Hot and wet Mixing Plants:

In a significant and major development, the Department of Mining dispensed with the requirement of License to start operation of stone Crushers/ Hot and wet mixing plants in UT of Jammu and Kashmir. The requisite formalities for operation of unit have been restricted to merely two things viz. Consent to operate from Pollution Control Board and NOC from Deputy Commissioner concerned with regard to the title of land and its usage. The department has removed the burden of double registrations where in the unit holders had to go through the rigorous procedures of registrations/ licensing in Mining as well as Industries and Commerce department. Earlier under the provisions of SRO 302, different NOCs were required from stakeholder departments thereby making the process cumbersome and had led to closure of many units. The department superseded SRO 302 and rolled out Notification S.O. 60 to ease the burden on the existing and prospective plant holders.

8. Relief to Brick kilns plant holders:

The Department, in a major step under Ease of Doing Business declared the extraction of brick earth in an area up to two hectares and up to a depth of two meters for making bricks in Brick Kilns as non-mining activity. The move has ensured the exemption of the activity from the requirement of prior Environmental Clearance as conferred under S.No.13 of Appendix IX of the Ministry of Environment Forest & Climate Change notification 1224 dated: 28th March 2020.

9. Geo-Tagging of Mineral Blocks:

The Department has geo-tagged all the Mineral Blocks (Major/Minor) already leased out/proposed for e-auction as part of Mine Surveillance System, a flagship Programme of IBM, GOI. This is a major achievement.

10. E-Auction of Mineral Blocks:

District Level Committees (DLCs) headed by respective DCs have been constituted to ensure compliance to all statutory requirements and transparent e-auctioning of Mineral Blocks at District Level.

11. District Survey Reports of all the Districts of UT:

DSR have been prepared for each district which serves as a model and guiding document for processing/consideration of the applications for Environmental Clearance of mining projects by the Environmental Impact Assessment Authorities.

12. A Multi Departmental District Level Task force:

To check the illegal mining activities and imposition of penalties, MDDLTF headed by DCs and Mineral Officer as Member Secretary is in place.

13. To prevent Black Marketing/Profiteering:

Department through District Level Task Force Cell have notified the **Sale Price of Minor minerals** and **processed minerals** excluding transportation charges in their respective Districts so that black marketing/profiteering of minerals is curbed and people get the supply of construction material at reasonable rates.

14. Transportation of the Minerals:

Allowed with **Colour** coded security featured challans **only**.

15. Consolidation of Reports:

The Department collects the **Mineral Production and Royalty details on Monthly basis from the District Offices**, consolidated at Regional Offices for onward submission to Directorate office and other Central/State/UT stakeholder Departments.

IMPORTANT OUTCOME:

1. Due to the above good practices, the overall Revenue collected in respect of Major Head 0853- Non-Ferrous Mining and Metallurgical Industries increased by ₹184.93 crore during the year 2020-21 as compared to the year 2019-20.
2. The revenue in respect of Mineral Concession Fees, Rents and Royalties also increased by ₹33.31 crore in the year 2020-21 as compared to 2019-20.
3. The system in place has also helped in curbing the illegal mining cases in the UT.
4. The single Window system has also helped in for speedy execution of mining leases of e-auction and thus facilitating ease of doing business.

CHAPTER - 4
MINERAL PROFILE OF
THE UNION TERRITORY OF JAMMU & KASHMIR
AND
SHORTLISTING OF RESOURCES

4.1 Mineral profile of Jammu & Kashmir

Jammu & Kashmir is the sole holder of country's sapphire resources and possesses 36% graphite, 21% marble and 14% of gypsum. Coal, gypsum and limestone are the important minerals produced in the UT.

The Kashmir valley comprises sedimentary, metamorphic and igneous rocks whereas the outer hill division covering Jammu comprises Siwaliks, Murees and Dogra slates. Boulder, bajri and sand are the most essential requirements for construction of infrastructure projects like real estate, roads, bridges, multiplexes, buildings and industrial units. The demand of sand is mainly met by river borne sediments of river Jhelum which is restricted between two stretches i.e., Lasjan bridge to Rajbagh and cement bridge to Panzinar.

Coal occurs in Poonch, Rajouri and Udhampur districts; gypsum in Baramulla and Doda districts; limestone in Anantnag, Baramulla, Kathua, Leh, Poonch, Pulwama, Rajouri, Srinagar and Udhampur districts; and magnesite in Udhampur districts. Other minerals that occur in the UT are bauxite, ball clay and china clay in Udhampur district; bentonite in Jammu district; diasporite in Rajouri and Udhampur districts; graphite in Baramulla district; lignite and marble in Kupwara district; quartz and silica sand in Anantnag, Doda and Udhampur districts; quartzite in Anantnag district; and sapphire in Doda district.

4.2 Strategic importance of minerals for the Jammu & Kashmir

MINING LEASES GRANTED THROUGH OFFLINE MODE IN J&K (UT)			
Mineral	District	No. of Mining Leases granted	Uses
Limestone	Anantnag	23	Manufacture of Cement, Calcium Carbide, Quicklime, Bleaching-Powder, Glass, Paper, Paints
	Pulwama	9	
	Srinagar	3	
	Poonch	1	
Gypsum	Baramulla	14	Cement, Fertilizer, Filler in Paper, Paints, Rubber, Textile industry, Plaster of Paris & Sanitary ware
	Doda	6	
	Ramban	3	
Coal	Rajouri (Kalakot)	-	As fuel
Magnesite	Udhampur, Reasi	1	Refractory Bricks for furnaces. Pharmaceuticals
Sand	Doda	1	Building Material
Sapphire	Kishtwar Sumcham (Paddar)	1	Precious Stone
Chinaclay	Udhampur	1	Ceramics, pottery

Mining Leases of River Bed Material granted through e-Auction mode			
S.No	District	No. of Blocks Granted (PSUs)	Uses
1	Jammu	31(29+2)	Building Material
2	Samba	19(17+2)	
3	Reasi	20	
4	Rajouri	21	
5	Poonch	13	
6	Kishtwar	2	
7	Doda	1	
8	Udhampur	6(4+2)	
9	Kathua	13	
10	Kupwara	13(12+1)	
11	Kulgam	18(17+1)	
12	Budgam	3	
13	Anantnag	3	
14	Shopian	19	
15	Baramulla	5	
16	Pulwama	4	
17	Ganderbal	2	
Total		185+(8 PSUs)	

At present, Jammu and Kashmir has 110 registered major and minor mineral-based units. Among these, Jammu province constitutes 46 units and Kashmir province has 64 units respectively. In the present time, mining is the basic factor for industrial development, because it alone provides means for advanced industrial operations.

4.3 Mining process followed in the Jammu & Kashmir

In the year 2012, the Hon'ble Apex Court in the case titled Deepak Kumar V/s State of Haryana directed all the State Governments and Union Territories to frame Rules in light of the guidelines issued/passed in the judgment. Accordingly, the Department reframed the rules called as "The Jammu and Kashmir Minor Mineral Concession, Storage, Transportation of Minerals and Prevention of Illegal Mining" Rules, 2016 notified vide SRO 105 of 2016.

Process of auction and Grant of Mining Lease:

1. Identification of Minor Mineral Blocks:

Director, Geology and Mining, J&K shall constitute teams of Geologists for identification of minor mineral blocks.

2. Clearances/NOCs required for Minor Mineral Blocks:

Vide Govt Order No 1145-JK (GAD) of 2021 dated: 28.10.2021, a District Level Single Window Committee for each District of the UT of J&K has been constituted under the chairmanship of Deputy Commissioner(s) of concerned District for facilitating the NOCs from stakeholding Departments. The composition of the committee is as under: -

1.	Deputy Commissioner	Chairman
2.	Additional Deputy Commissioner	Convener
3.	Assistant Commissioner (Revenue)	Member
4.	Divisional Forest Officer Concerned	Member
5.	Executive Engineer, Irrigation & Flood Control Department concerned	Member
6.	Executive Engineer, Jal Shakti Department concerned	Member
7.	District Mineral Officer	Member
8.	District Officer, Pollution Control Board	Member
9.	Assistant Director, Fisheries	Member
10.	Wildlife Warden Concerned	Member

3. Determination of Reserve Price:

Director shall constitute committees for fixing the reserve price for each block keeping in view the following parameters:

- i. Actual physical quantities of mineral produced and dispatched from the area concerned during last three years.
- ii. Collection of royalty during last three years from such deposits.
- iii. Expected increase in revenue in the proposed contract period due to increased consumption of mineral in future.
- iv. Potential of mineral reserves, feasibility, haulage facilities and other relevant matters about the area.

4. To accord Administrative approval in respect of Minor Mineral Blockside notified by Director, Geology and Mining, J&K regarding area & reserve minimum bid.

5. Conductance of E-auction through District Level Auction Committee:

Vide Govt. Order No. 175-GAD of 2016 dated 01.03.2016, a committee of following officers was constituted for each District for grant of Mineral Concessions through auction:

i.	Deputy Commissioner/Additional District Development Commissioner (concerned District)	Chairman
ii.	Superintending Engineer (R&B) (concerned District)	Member
iii.	District Treasury Officer (concerned District)	Member
iv.	Executive Engineer (I&FC) (concerned District)	Member
v.	Officer of the Mining Department not below the rank of Deputy Director/Mining Engineer.	Member
vi.	Officer Incharge of Mining Department (concerned District)	Member Secretary

6. **Environmental Clearance to be issued by J&K SEIAA:**
 - i) If the area of the block is less than 5 hectares, then J&K SEIAA has to directly issue EC.
 - ii) If the area of block is more than 5 hectares, then Terms of References and Public hearing is required wherein Environment Impact Assessment report/Environment Management Plan is to be prepared by Project Proponents/Consultants.
 - a) **Terms of References include** a detailed survey of the area/block viz-a-viz soil/water/air sampling, pre and post monsoon data and there-after draft EIA report/EMP is submitted to J&K SEIAA to conduct public hearing.
 - b) **Public hearing** is conducted by JK, PCB under the Chairmanship of Deputy Commissioner/Additional Deputy Commissioner of the concerned District, wherein consultation of peoples residing nearby prospected areas/ blocks is taken into consideration before issuing the EC.
7. Requirement of Consent to Operate from Pollution Control Board for operationalization of Mining Lease:
8. After completing all the formalities, (deposition of remaining 50% bid amount, Income Tax, approved mining plan, environmental clearances, consent to operate, security deposit, and other requisite documents etc) the Director, Geology & Mining grants mining leases in favour of successful bidders.
9. The regulation and monitoring of mining activities shall be in accordance with Mines and Mineral (Development & Regulation) Act 1957 and rules made thereunder.
10. The holder of a mining leases granted under these rules shall pay royalty in respect of any minor mineral removed by him from and/ or consumed, at the rate specified in the Schedule -I of J&K Minor Mineral Concession Storage, Transportation of Minerals and Prevention of Illegal Mining Rules, 2016 in respect of that mineral in the manner as ordered by the competent authority.
11. The lessee or any other person shall not remove or dispatch the minor mineral from the lease hold without proper challans in Form A.
12. The lessee shall furnish monthly returns in the Form ML-8 to Director/Designated Authority by 15th of the following month to which the returns relate and Annual Returns in the Form ML-9 by or before 30th April of each year.
13. Simple interest at the rate of 15% shall be charged on all dues in respect of dead rent, royalty, and royalty collection after one month from the date it becomes due.
14. Any person undertaking any mining operations without a valid mineral concession granted under the Act and the rules framed thereunder in any area shall be deemed to be indulging in illegal or un-authorized mining and shall be dealt in accordance with the provisions contained in this Chapter XII of SRO-105 dated 31-03-2016.

4.4 Contribution of mineral resources in the revenues of Jammu & Kashmir during 2020-21

Jammu & Kashmir			
Mineral	Royalty involved (₹ in Lakh)	Penalty received in illegal Mining (₹ in Lakh)	Total Royalty & Penalty Received (₹ in lakh)
Stone	12.58	2.26	14.84
Ordinary sand	69.09	256.69	325.78
Screened sand	13.32	47.03	60.35
Nallah			
Muck/RBM	560.01	75.12	635.13
N/Boulder	86.53	172.38	258.91
N/Bajri	12.64	27.71	40.35
C/Bajri	36.84	145.76	182.60
Crushing stone	103.24	111.53	214.77
limestone(R)	1.63	41.53	43.16
Clay	57.03	30.77	87.80
Dress/Stone	1.19	0	1.19
Deco/stone	0.35	0	0.35
Brick Earth	300.51	0.90	301.41
Sandstone	0.78	0	0.78
Masonry Stone	29.22	0.11	29.33
Dim/stone	0.43	0.15	0.58
Ordinary Earth	79.83	17.50	97.33
Gypsum	261.78	0.95	262.73
Limestone Major	1283.53*	0	1283.53
Wet Mix	0	0.59	0.59
Cr. Dust	0	0.68	0.68
Total:-	2910.53	931.66	3842.19

*includes an amount of ₹309.81 lakh outstanding/advance payment in respect of Limestone Major.

The revenue collected on production/illegal mining of minerals was ₹38.42 crore for the year 2020-21.

Total Revenue received on Royalty and illegal mining constitutes less than one percent of total Non-Tax Revenue of the UT J&K for the year 2020-21.

The value of mineral production was dominated by minor minerals contributing 99% of the total value. Coal, limestone and gypsum were the other minerals produced in the UT and their combined contribution to the total value of mineral production was 1%.

Jammu & Kashmir Cements Ltd, a UT Government Undertaking, a mineral-based Industry, operates a cement plant of 1.98 lakh TPY capacity at Khrew in Pulwama district. The company also owns a tiny cement plant of 20,000 TPY capacity located at Wuyan in Srinagar district, besides two other tiny cement plants that have a total capacity of 39,000 TPY. Khyber Industries (P) Ltd operates a cement plant of 3,30,000 TPY in the UT. The UT also has 1,800 TPY capacity Unit that manufactures ceramic and refractory products in District Kathua. A 3,000 TPY capacity calcium carbide plant is situated at District Pulwama.

4.5 Short-listing of resources for this study

There is a dedicated Department of Geology & Mining established in J&K responsible for exploration of the Minerals wealth. The Department has identified and established three Major Minerals *i.e* Limestone, Magnesite and Bauxite and seven Minor Minerals *i.e* Gypsum, Dolomite, Quartzite, Granite, Marble, Riverbed material and Sapphire. Similarly, two Fossils Fuel resources *i.e* Coal & Lignite are also found in the Region. All these resources have been taken into Natural Resources Account of the UT of J&K for the year 2020-21.

CHAPTER 5

ASSET ACCOUNT OF MINERAL AND ENERGY RESOURCES OF JAMMU AND KASHMIR

5.1.1. Scope

The scope of the project is to prepare the Asset Account for the Mineral and Energy resources for the year 2020-21. This involves the work of ascertaining the opening stock of minerals, growth /discovery of the mineral, reduction of minerals due to extraction, arriving at the closing stock of the mineral, ascertaining the market value of the minerals and sustainability of Minerals. Not all major minerals were included in the Asset Accounts as only proved reserves were to be included as per the Guidelines/SOPs issued by GASAB. In addition, seven minor minerals and two fossil fuels namely Gypsum, Dolomite, Quartzite, Granite, Marble, RBM, Sapphire, Coal and Lignite as preferred by the UT Government were also selected for the project.

The Asset Accounts on Mineral & Energy Resources of Jammu & Kashmir for the period from April 2020 to March 2021 has been prepared on the basis of information provided by Government of UT Jammu & Kashmir. The Union Territory possesses ten major/minor minerals and two fossil fuels. The Asset Accounts cover all minerals and fossil fuel available in the Union Territory. The Asset Accounts provides an overview of opening and closing stocks, extractions during the year and revenue generated from mineral resources of the Union Territory.

5.1.2 Objectives

The objectives are as follows:

- To prepare the Asset Account of mineral and energy resources of the State/UT for better monitoring of resource extractions, usage, contain illegal mining and revenue optimization in the interest of the State/UT.
- To assist the country/State/UT 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 on increase in generation and usage of renewable energy resources.

5.1.3 Methodology of data collection and compilation of physical flows

As the Department of Geology and Mining, J&K and J&K Minerals Limited holds the data of opening stock of mineral sand the extraction thereof in respect of Major and Minor minerals, accordingly, data/information regarding opening stock as on 01-04-2015 and extraction for the period 2015-16 to 2020-2021 received from Director, Geology and Mining, J&K and J&K Minerals Limited were considered. The closing balance as on 31-03-2021 in physical units were worked out by subtracting the extraction and adding the addition during 2015-16 to 2020-21 on the basis of data provided by Director, Geology and Mining, J&K and J&K Minerals Limited.

5.1.4 Methodology of monetization of physical flows

In case of “Revenue Receivable” the following methodology of monetization of physical flows was adopted.

- In case of major minerals, rate of royalty prescribed by the Mines and Minerals (Development and Regulation) Act, 1957 (BARE ACT) has been adopted.
- In case of minor minerals, rates prescribed by the Jammu & Kashmir, Minor Mineral concession storage, transportation of Minerals and prevention of illegal mining Rules, 2016 notified vide SRO-105 dated 31st March, 2016 has been adopted.

In case of “Average Market Value” the following methodology of monetization of physical flows was adopted.

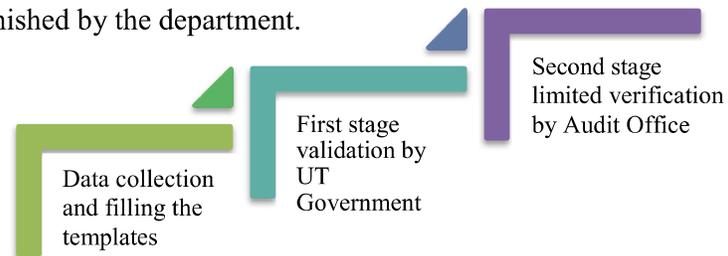
- In case of major mineral, average sale prices are released by IBM on monthly basis, therefore, the same has been taken into account for major minerals.
- In case of minor minerals, average sales prices are not released by IBM, therefore, the Department of Geology and Mining, Jammu & Kashmir charges 10 times of the royalty rates as Average Market Value and same is being taken into account.

5.1.5 Dual stage validation/limited verification of data

As per the GASAB guidelines, the Asset Accounts on Mineral and Energy Resources involved dual stages of validation/limited verification after data collection and filling in the templates. The first stage of validation is to be carried out by the UT Government and second stage of limited verification by the Audit Office.

The Pr. Accountant General (A&E) helped/assisted the UT Government to prepare the Asset Accounts in the templates prescribed by GASAB and has verified the data received from the Directorate, Geology & Mining Department. The Asset Accounts prepared was shared with the DGM for first stage validation process. On receipt of Asset Accounts, the DGM has validated the information shown in the Asset Accounts with respect to the data available with them and returned the same duly validated with some additions/modifications to Pr. Accountant General (A&E). The Asset Accounts received after first stage validation were again scrutinized with reference to the modifications suggested by the DGM. The revised Asset Accounts were forwarded to the Audit Office for second stage limited verification process.

For Second Stage limited verification, the draft asset accounts were forwarded to the Office of the Principal Accountant General (Audit), Jammu & Kashmir. The joint team of Principal Accountant General (Audit), Jammu & Kashmir and Principal Accountant General (A&E) Jammu & Kashmir conducted a test check of records of the concerned department to ascertain the correctness of figures furnished by the department.



5.1.6 Challenges and limitations

This being the pioneer project, the following challenges were faced during the collection and compilation of data:

1. Due to peculiar geographical situation of Jammu & Kashmir, some of the offices are being run from Jammu and some from Srinagar, resulting into difficulty in data collection from concerned departments/stakeholders.
2. Data for the Jammu Province is being maintained at the Jammu office and for Kashmir Province same is being maintained at Srinagar Office, resulting into absence of consolidated data at one place.
3. Restrictions in physical moment at time due to security related issues in the Kashmir Province, poses collection of data a big challenge.
4. Royalty receivable and royalty actually received not readily available.
5. Non-availability of Average market value with the Department for Minor Minerals.
6. Shortage of man power in the concerned departments as well as in Accountant General's Offices for dedicated staff for the purpose of NRA.

5.2.1 Highlights

- The Asset Accounts on Minerals and Energy Resources for the year 2020-21 was prepared on the basis of the information provided by the Directorate of Geology & Mining.
- Opening Balance in respect of Sapphire and Coal are not available with the concerned Departments of UT of J&K.
- All the minerals available in Jammu & Kashmir are covered in this report.
- The Asset Accounts for the year 2020-21 including methodology of working out opening balances of minerals as on 1st April 2020 as mentioned in para 5.1.3.
- Jammu & Kashmir is the sole holder of country's sapphire resources.

The formats:-

- The formats of Asset Accounts on Mineral and Energy Resources were last issued in October 2021 through the book on templates which is under use in the States/UTs. Subsequently, number of advisories has been issued leading to increase in numbers of tables. Besides, table has been introduced for monitoring the progresses on generation of renewable and non-renewable energy resources. Also, necessary modifications have been included at various places based on the deliberations during the 2nd Consultative Committee meeting held in June 2022. Based on the above, the updated formats of Asset Accounts are depicted as follows:-
 - Table 1: Basic Asset Accounts on Mineral & Energy Resources
 - Table 2: Asset Accounts on physical flows of Mineral and Energy Resources along with sustainability of resources.
 - Table 2A: Riverine resources –physical flows
 - Table 2B: Riverine resources-valuations
 - Table 3: Subsidiary Asset Accounts linking detailed physical flows in respect of Mineral and Energy Resources with the valuation of resources
 - Table 3A:- Information on Illegal Mining
 - Table 4:- Analysis of extraction, production and dispatch of resources
 - Table 5: Analysis of District Mineral Foundation/National Mineral Foundation
 - Table 6: Progress in generation and use of renewable energy resource

Note: - As the UT authority could not provide relevant data, Table-4 could not be generated.

5.2.2 Asset Account –the tables

Table 1: Basic Asset Account on Mineral & Non-Renewable Energy Resources for the year 2020-21

Particulars	Resources												
	Limestone (in MT)	Magnesite (in MT)	Bauxite (in MT)	Gypsum (in MT)	Dolomite (in MT)	Quartzite (in MT)	Granite (in MCm)	Marble (in MT)	RBM (in MT)	Sapphire (in KG)	Coal (in MT)	Lignite (in MT)	
	Major Minerals			Minor Minerals								Fuel Minerals	
Opening stock of environmental asset	3857.21	7.00	13.74	43.53	67.37	5.78	0.002	40.72	171.66	NA	NA	5.00	
Growth in stock	-	-	-	-	-	-	-	-	-	3.2	0.01	-	
Discoveries of news stock													
Upward reappraisals													
Reclassifications													
Total addition of stock													
Reduction of stock													
Extractions	1.32	-		0.66					1.24	3.2	0.01		
Normal loss of stock													
Catastrophic losses													
Downward reappraisals													
Reclassification													
Total reduction in stock	1.32	-		0.66					1.24	3.2	0.01		
Valuation of the stock*(revenue receivable) (₹ in crore)	11			6						5% of sale value	0.007		
Valuation/Revaluation of the stock*(Average Market Price) (₹ in crore)	54			60						Auction based	0.07		
Closing stock of environmental assets	3855.89	7.00	13.74	42.87	67.37	5.78	0.002	40.72	170.42	NA	NA	5.00	

*Only applicable for asset accounts in monetary terms.

MT---Million Tonnes; KG---Kilograms;

MCM -- Million Cubic Meters;

**Table 2: Asset Accounts on Physical flows of Minerals & Non-Renewable Energy Resources in the UT of Jammu & Kashmir along with Sustainability of Resources in years.
(For the year 2020-21)**

Classification	Sub-Classification	Unit	Opening Stock of Reserve (01.04.2020)	Addition during the year 2020-21	Extraction during the Year 2020-21			Total	Closing Stock of Reserve (31.03.2021)	Sustainability of Resources in years
					Govt	Pvt	others			
Major Minerals	Limestone	MT	3857.21	NIL	--	1.32	--	1.32	3855.89	2921
	Magnesite	MT	7.00	NIL	--	---	---	---	7.00	
	Bauxite	MT	13.74	NIL	--	---	--	--	13.74	
Minor Minerals	Gypsum	MT	43.53	NIL	0.41	0.25	-	0.66	42.87	65
	Dolomite	MT	67.37	NIL	---	-	--	--	67.37	
	Quartzite	MT	5.78	NIL	---	----	---	--	5.78	
	Granite	MCm	0.002	NIL	---	---	--	--	0.002	
	Marble	MT	40.72	NIL	--	--	--	--	40.72	
	Sapphire	KG	Not Available	3.2	3.2	--	--	3.2	Not Available	
Fuel Minerals	Coal	MT	Not Available	0.01	0.01	--	--	0.01	Not Available	
	Lignite	MT	5.00	NIL	---	--	--	--	5.00	

MT---Million Tonnes;

KG---Kilograms;

MCM---Million Cubic Meters;

Table 2A: Riverine Resources-physical flows

Classification	Grade-wise sub-classification	Available reserves at the beginning of the year (as per mining plans)	Accumulation during the year	Reduction in stock			Remaining reserves at the end of the year	Sustainability of resources (if ascertainable)	
				Extracted by/for	Other extraction including exports	Total extraction			
				Govt Sector	Private Sector				
<i>(In million tonnes/million cum-as the case may be)</i>									
Riverine resources	Sand	10.97			0.07		0.07	10.90	156
	Boulder	13.96			0.05		0.05	13.91	278
	Nallah Muck/RBM	134.03		0.04	1.05	0.01	1.10	132.93	121
	N/Bajri	12.70			0.02		0.02	12.68	634
	Total	171.66	Nil	0.04	1.19	0.01	1.24	170.42	

Table 2B: Riverine Resources- Valuations

Particulars	Grade- wise sub- classification	Physical unit extracted showing Govt, Private and other sector as in table 2A (in Million Tonnes)	Valuation of resources			District Mineral Foundation	
			Revenue receivable	Total revenue receivable	Average Market value	Amount receivable	Amount Received
			<i>(in crore)</i>				
RBM	Sand	0.07	0.17	0.17	1.68	0.02	0.02
	Boulder	0.05	0.11	0.11	1.08	0.01	0.01
	Nallah Much/RBM	1.1	2.73	2.73	27.27	0.27	0.27
	N/Bajri	0.02	0.04	0.04	0.45	0.004	0.004
Total		1.24	3.05	3.05	30.47	0.30	0.30

Table 3: Subsidiary Asset Account linking detailed physical flow in respect of Minerals and Non-Renewable Energy Resources with the valuation of Resources (April 2020 to March 2021)

Particulars	Classification	Physical Unit	Valuation of Resources			Total Average Market Price (₹ in crore)			
			Revenue Receivable (₹ in crore)	Total Revenue Receivables (₹ in crore)	Average Market value (₹ in crore)				
Opening Stock (01/04/2020)	Limestone	3857.21 MT	30858.00	32809.00	157760.00	178363.00			
	Magnesite	7.00 MT	103.00		3437.00				
	Bauxite	13.74 MT	218.00		873.00				
	Gypsum	43.53 MT	392.00		3918.00				
	Dolomite	67.37 MT	505.00		5053.00				
	Quartzite	5.78 MT	15.00		145.00				
	Granite	0.002 MCM	0.05		0.46				
	Marble	40.72 MT	285.00		2850.00				
	RBM	171.66 MT	429.00		4291.00				
	Sapphire	Not Available	Not Available		Not Available				
	Coal	Not Available	Not Available		Not Available				
	Lignite	5.00 MT	3.50		35.00				
	Addition during the year 2020-21	Limestone	NIL		NIL		0.007	NIL	0.07
		Magnesite							
Bauxite									
Gypsum									
Dolomite									
Quartzite									
Granite									
Marble									
RBM									
Sapphire		3.20 KG	5% of sale value	Auction based					
Coal		0.01	0.007	0.07					
Lignite		NIL	NIL						

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Particulars	Classification	Physical Unit	Valuation of Resources			
			Revenue Receivable (₹ in crore)	Total Revenue receivables (₹ in crore)	Average Market value (₹ in crore)	Total Average Market Price (₹ in crore)
Reduction during the year 2020-21	Limestone	1.32 MT	11.00		54.00	145.07
	Magnesite	NIL	--		--	
	Bauxite	NIL	--		--	
	Gypsum	0.66 MT	6.00	20.007	60.00	
	Dolomite	NIL	--		--	
	Quartzite	NIL	--		--	
	Granite	NIL	--		--	
	Marble	NIL	--		--	
	RBM	1.24 MT	3.00		31.00	
	Sapphire	3.2 KG	5% of sale value		Auction based	
	Coal	0.01	0.007		0.07	
	Lignite	NIL	--		--	
	Closing Stock (31/03/2021)	Limestone	3855.89 MT	30847.00		
Magnesite		7.00 MT	103.00		3437.00	
Bauxite		13.74 MT	218.00		873.00	
Gypsum		42.87 MT	386.00	32789.00	3858.00	
Dolomite		67.37 MT	505.00		5053.00	
Quartzite		5.78 MT	15.00		145.00	
Granite		0.002 MCM	0.05		0.46	
Marble		40.72 MT	285.00		2850.00	
RBM		170.42 MT	426.00		4260.00	
Sapphire		Not Available	Not Available		Not Available	
Coal		Not Available	Not Available		Not Available	
Lignite		5.00	3.50		35.00	

MT---Million Tonnes; KG---Kilograms; MCM Million Cubic Meters;

Revenue receivable is calculated based on royalty rates applicable to respective resources

Table 3A: Showing information on illegal mining

Name of the district	Authority which detected the offence (Deptt./Police/Enforcement/ Others)	Detection of illegal mining by the departmental authorities on which challans issued and offence report registered				Provisions under which compounding done
		Name of minerals with grades (if available)	Physical quantity/volume	Royalty involved (in ₹)	Amount recovered (in ₹)	
Jammu	District Mineral Officer, Jammu	Stone	25.00	500.00	47500.00	Under Rule 71 of SRO J&K Minor Mineral Concession Storage, Transportation of Minerals and prevention of illegal Mining Rules 2016 Notified Vide SRO-105 Dated 31-03-2016
		Ordinary sand	22,652.25	566306.25	10998618.75	
		Screened sand	449.00	13470.00	3831688.00	
		Nallah Muck/RBM	2,235.00	55875.00	1032750.00	
		N/Boulder	1,748.00	34960.00	663560.00	
		N/Bajri	141.00	4935.00	261285.00	
		C/Bajri	11,013.65	440545.80	6594003.80	
		Clay	665.00	13300.00	248300.00	
		O.Earth	4,635.46	92709.12	1662800.32	
		Total	43,564.35	12,22,601.17	25340505.87	
		Kathua	District Mineral Officer, Kathua	Stone	40.00	
Ordinary sand	1,063.00			26575.00	693325.00	
Screened sand	443.10			13293.00	274223.00	
Nallah Muck/RBM	12,325.00			308125.00	3783375.00	
N/Boulder	191.00			3820.00	191020.00	
N/Bajri	12.00			420.00	14620.00	
C/Bajri	2,173.00			86920.00	1592620.00	
Clay	245.00	4900.00	77900.00			

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Name of the district	Authority which detected the offence (Deptt/Police/Enforcement/ Others)	Detection of illegal mining by the departmental authorities on which challans issued and offence report registered				
		Name of minerals with grades (if available)	Physical quantity/volume	Royalty involved (in ₹)	Amount recovered (in ₹)	Provisions under which compounding done
Samba	District Mineral Officer, Samba	Crushing stone	1,988.00	49700.00	10601057.00	
		O.Earth	34.00	680.00	58480.00	
		Total:-	18,514.10	4,95,233.00	17307420.00	
		Ordinary sand	3,714.82	92870.45	3051774.95	
		Screened sand	42.00	1260.00	43860.00	
		Nallah Muck/RBM	131.00	3275.00	121025.00	
		N/Boulder	171.00	3420.00	148620.00	
Poonch	District Mineral Officer, Poonch	N/Bajri	4.00	140.00	14540.00	
		C/Bajri	1,256.00	50240.00	1030640.00	
		Clay	65.00	1300.00	85300.00	
		Crushing stone	330.00	8250.00	157750.00	
		Total:-	5,713.82	1,60,755.45	4653509.95	
		Stone	147.00	2940.00	62340.00	
		Ordinary sand	407.00	10175.00	333925.00	
Rajouri	District Mineral Officer, Rajouri	Nallah Muck/RBM	1,183.00	29575.00	403325.00	
		N/Boulder	99.00	1980.00	21780.00	
		N/Bajri	825.90	28906.47	805971.12	
		C/Bajri	6.00	240.00	32640.00	
		Total:-	2,667.90	73,816.47	1659981.12	

Name of the district	Authority which detected the offence (Deptt./Police/Enforcement/Others)	Detection of illegal mining by the departmental authorities on which challans issued and offence report registered				
		Name of minerals with grades (If available)	Physical quantity/volume	Royalty involved (in ₹)	Amount recovered (in ₹)	Provisions under which compounding done
Udhampur	District Mineral Officer, Udhampur	Ordinary sand	873.64	21840.93	733250.18	
		Screened sand	45.00	1350.00	50850.00	
		Nallah Muck/RBM	3,030.00	75750.00	1103250.00	
		N/Boulder	15.00	300.00	3300.00	
		N/Bajri	723.00	25305.00	745355.00	
		C/Bajri	3,653.00	146120.00	2020320.00	
		Limestone	20.00	800.00	32800.00	
		O.Earth	20.00	400.00	28400.00	
		Total:-	8,484.64	2,73,965.93	4791625.18	
Doda	District Mineral Officer, Doda	Ordinary sand	29.00	725.00	31975.00	
		Nallah Muck/RBM	1,403.00	35075.00	410825.00	
		N/Bajri	46.00	1610.00	17710.00	
		C/Bajri	608.00	24320.00	351520.00	
		Total:-	2,086.00	61,730.00	812030.00	

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Name of the district	Authority which detected the offence (Deptt./Police/Enforcement/Others)	Detection of illegal mining by the departmental authorities on which challans issued and offence report registered				
		Name of minerals with grades (If available)	Physical quantity/volume	Royalty involved (in ₹)	Amount recovered (in ₹)	Provisions under which compounding done
Ramban	District Mineral Officer, Ramban	C/Bajri	1,902.00	76080.00	878880.00	
		Crushing stone	500.00	12500.00	157500.00	
		Total:-	4,886.00	1,54,180.00	2237605.00	
		Ordinary sand	10.00	250.00	14750.00	
Ramban	District Mineral Officer, Ramban	Nallah Muck/RBM	36.00	900.00	9900.00	
		Total:-	46.00	1,150.00	24650.00	
Kishtwar	District Mineral Officer, Kishtwar	Ordinary sand	1,560.00	39000.00	656000.00	
		Screened sand	125.00	3750.00	41250.00	
		Nallah Muck/RBM	415.00	10375.00	114125.00	
		N/Boulder	15.00	300.00	30300.00	
		N/Bajri	60.00	2100.00	83100.00	
		C/Bajri	2,815.00	112600.00	1423600.00	
		Crushing stone	306.00	7650.00	114150.00	
Total:-	5,296.00	1,75,775.00	2462525.00			
Reasi	District Mineral Officer, Reasi	Ordinary sand	501.71	12542.75	666095.25	
		Screened sand	135.00	4050.00	114550.00	
		Nallah Muck/RBM	162.00	4050.00	79550.00	
		N/Boulder	21.00	420.00	44620.00	
		N/Bajri	388.00	13580.00	804380.00	

Name of the district	Authority which detected the offence (Deptt./Police/Enforcement/Others)	Detection of illegal mining by the departmental authorities on which challans issued and offence report registered			
		Name of minerals with grades (if available)	Physical quantity/volume	Royalty involved (in ₹)	Amount recovered (in ₹)
Ganderbal	District Mineral Officer, Ganderbal	C/Bajri	66.00	2640.00	83040.00
		Total:-	1,273.71	37,282.75	1792235.25
		Sand	422.50	10562.50	688488.00
Bandipora	District Mineral Officer, Bandipora	Limestone	56.00	1400.00	110300.00
		RBM	1384.50	37381.50	2884900.00
		Total	1863.00	49344.00	3683688.00
Kulgam	District Mineral Officer, Kulgam	Sand	141.00	3525.00	296050.00
		Limestone	309.00	7725.00	557950.00
		Clay	15.00	300.00	27685.00
Pulwama	District Mineral Officer, Pulwama	RBM	258.00	6966.00	719374.00
		Total	723.00	18516.00	1601059.00
		Sand	442.00	11050.00	110500.00
Ganderbal	District Mineral Officer, Ganderbal	Limestone	38.00	950.00	9500.00
		Clay	14.00	280.00	2800.00
		Gypsum	14.00	1260.00	12600.00
Pulwama	District Mineral Officer, Pulwama	RBM	982.00	26514.00	257800.00
		Total	1490.00	40054.00	393200.00
		Sand	922.00	23050.00	1411925.00
Ganderbal	District Mineral Officer, Ganderbal	Limestone	336.00	8400.00	757503.00
		Clay	1169.00	23380.00	852163.00
		Gypsum	115.00	10350.00	82182.00

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Name of the district	Authority which detected the offence (Deptt./Police/Enforcement/Others)	Detection of illegal mining by the departmental authorities on which challans issued and offence report registered				Provisions under which compounding done
		Name of minerals with grades (if available)	Physical quantity/volume	Royalty involved (in ₹)	Amount recovered (in ₹)	
Shopian	District Mineral Officer, Shopian	RBM	3560.00	96120.00	3646178.00	
		Total	6102.00	161300.00	6749951.00	
		Sand	124.00	3100.00	274300.00	
		Limestone	14.00	350.00	58930.00	
		Clay	92.00	1840.00	62540.00	
Budgam	District Mineral Officer, Budgam	RBM	665.00	17955.00	1120973.00	
		Total	895.00	23245.00	1516743.00	
		Sand	145.00	3625.00	928767.50	
		Limestone	38.00	950.00	928767.50	
		Clay	614.00	12280.00	928767.50	
Srinagar	District Mineral Officer, Srinagar	RBM	414.00	11178.00	928767.50	
		Total	1211.00	28033.00	3715070.00	
		Sand	603.00	15075.00	1336289.00	
		Limestone	165.00	4125.00	406647.00	
		Clay	133.00	2660.00	194289.00	
Kupwara	District Mineral Officer, Kupwara	RBM	867.00	23409.00	1574672.00	
		Total	1768.00	45269.00	3511897.00	
		Sand	315.00	7875.00	946252.00	
		Limestone	42.00	1050.00	89589.00	
		Clay	10.00	200.00	42565.00	
		RBM	1046.00	28242.00	2461179.00	

Name of the district	Authority which detected the offence (Deptt./Police/Enforcement/Others)	Detection of illegal mining by the departmental authorities on which challans issued and offence report registered				
		Name of minerals with grades (if available)	Physical quantity/volume	Royalty involved (in ₹)	Amount recovered (in ₹)	Provisions under which compounding done
Baramulla	District Mineral Officer, Baramulla	Total	1413.00	37367.00	3539585.00	
		Sand	1793.00	44,825.00	1458992.00	
		Limestone	538.00	13450.00	1054225.00	
		Clay	953.00	19060.00	513760.00	
		RBM	928.50	23212.50	2186457.00	
		Total	4212.50	100547.50	5213434.00	
Anantnag	District Mineral Officer, Anantnag	Sand	358.00	8950.00	681850.00	
		Limestone®	64.00	1600.00	146950.00	
		RBM	154.00	3850.00	353970.00	
		Crushed Bajri	289.00	11560.00	568830.00	
		Crusher Boulder	69.00	1725.00	122300.00	
		Clay	21.00	420.00	41020.00	
		Brick Earth	45.00	900.00	90300.00	
		Wet Mix	35.00	875.00	58640.00	
		Chisel Stone	7.00	245.00	14695.00	
		M.Stone	3.00	105.00	10825.00	
		Cr.Dust	35.00	875.00	68400.00	
		Total	1080.00	31105.00	2157780.00	
		Grand Total		31,91,270.26	9,31,64,494.36	

Table 5: Showing analysis of District Mineral Foundation

Name of Mine/Mineral/ District	Volume of minerals on which DMF was realisable (in Million Tonnes)	Rate at which DMF realisable	Total DMF realisable (in crore)	Total DMF realised (in crore)	Variations, if any	
					(in crore)	Percentage
Limestone (Anantnag, Pulwama, Srinagar)	1.32	30% of royalty in addition to royalty payable	2.91	0.07	2.84	97.59
Gypsum (Baramulla, Doda and Ramban)	0.66	10 % of royalty	0.59	0.26	0.33	55.93
Sand (All Districts of UT J&K except Kathua & Ramban)	0.07	10 % of royalty	0.02	0.02	Nil	Nil
Boulder (All Districts of UT J&K except Kathua, Samba & Rajouri)	0.05	10 % of royalty	0.01	0.01	Nil	Nil
Nallah Muck/RBM(All Districts of J&K)	1.10	10 % of royalty	0.31	0.31	Nil	Nil
Nallah Bajri (All Districts of J&K)	0.02	10 % of royalty	0.01	0.01	Nil	Nil
Total			3.85	0.68	3.17	82.34

Table 6: Progress in generation and use of renewable energy resources 2020-21

Sector	Energy requirement by sector during the year 2020-21 (in MWH)	Generation/additional generation of energy during the year 2020-21							Energy (+)surplus or (-) deficit including total MWH of deficit/surplus power (in MWH)	
		Non-renewable energy/Fossil fuel sources (in MWH)	Renewable energy (in MMW)				Others incl Bio Mass, Waste to energy, Geothermal etc	Percentage share of non-renewable and renewable energy resources vis-à-vis total requirement		
			Solar	Wind	Hydel	Total (in MWH)		Non-Renewable energy %		Renewable energy %
Industries	4870165.25									
Domestic	15196717.86									
Agriculture	284152.32									
Commercial	2730836.67	0.00	22884.90	0.00	17520070.58	0.00	17542955.48	0%	68.97	(-7893902.89 (deficit))
Traction and Railways	73000.00									
Others	2281986.26									
Total	25436858.37	0.00	22884.90	0.00	17520070.58	0.00	17542955.48	0%	68.97	(-7893902.89 (deficit))

The validation of data in Table-6 from one of the wing viz. Kashmir Power Development Corporation Limited (KPDCL) of energy department of UT J&K was received after the due date. As such, the correction could not be carried out in National Compendium whereas the updated figures after incorporating the corrections are depicted in the table below:-

Table -6
Progress in generation and use of renewable energy resources
2020-21

Sector	Energy requirement by sector during the year 2020-21 (in MWH)	Generation/additional generation of energy during the year 2020-21					Percentage share of non-renewable and renewable energy resources vis-à-vis total requirement		Energy (+) surplus or (-) deficit including total MWH of deficit/ surplus power	
		Non-renewable (N/R) energy/ Fossil fuel sources (in MWH)	Renewable energy (in MMW)				Non-Renewable energy %	Renewable energy %		
			Solar	Wind	Hydel	Others incl Bio Mass, Waste to energy, Geothermal etc				G. Total (in MWH)
	Total (in MWH)	Total (in MWH)	Total (in MWH)	Total (in MWH)	Total (in MWH)			(in MWH)		
Industries	5299463.95									
Domestic	14159192.83									
Agriculture	474029.17									
Commercial	2797381.33	0.00	22816.00	0.00	17520070.58	0.000	17542886.58	0%	68.98	
Traction and Railways	73000.00									
Others	2628956.05									
Total	25432023.33	0.00	22816.00	0.00	17520070.58	0.000	17542886.58	0%	68.98	(-) 7899136.75 (deficit)

5.2.3 Findings of the study

- There were variations in the opening/extraction figures of UT Government Departments and those maintained by the IBM. The figures furnished by the UT Government were taken into account while preparing the Asset Account.
- **Variation between Revenue and Market value:-** There is huge variation between the Royalty Rate and Market Value in respect of most of the Major/Minor minerals ranging between 300 to 3233 *per cent*.
- **Short collection of District Mineral Fund:-** In order to fund the welfare measures towards the people living in mining and nearby areas affected by mining activities, the GoI had enacted District Mineral Foundation in January 2015 at 10 *per cent* and 30 *per cent* of royalties to be paid by the lessees in cases of leases granted after and before 2018 respectively. Similarly, the GoI also enacted National Mineral Exploration Trust at 2 *per cent* of the royalty amount for boosting the exploration activities. The funds are to be kept separate and spent as per the guidance of the GoI. It has been noticed that during the year 2020-21, there had been shortfall in collection under District Mineral Fund to the tune of ₹3.17 crore.
- **Extractions:** Of the three major minerals (Limestone, Magnesite and Bauxite) for which accounts were prepared, extraction of only one mineral i.e Limestone was reported during the reporting period and there were no extractions in respect of other 2 minerals.
- **Illegal Mining:** An amount of ₹9.32 crore was collected in the form of fines and penalties during the year 2020-21.
- The UT has huge potential to generate energy through renewable energy resources but this sector has not been utilized to its fullest resulting in huge deficit (31%) between the demand and consumption.
- There is a significant scope of harnessing wind energy in different districts. As far as Renewable Energy Scenario in J&K is concerned, the estimated hydro power potential of the UT is 20,000 Megawatts (MW), of which about 16,475 MW have been identified. This comprises 11,283 MW in Chenab basin, 3,084 MW in Jhelum basin 500 MW in Ravi Basin & 1,608 MW in Indus basin. Out of the identified potential, only 3,263.46 MW i.e. 19.80% (of identified potential) has been exploited so far, consisting of 1,211.96 MW in UT Sector from 21 power projects, 2,009 MW in Central Sector from 7 projects and 42.5 MW in private sector from 4 projects. During FY 2020-21, JKPCCL has purchased 18,091 million units of power (worth ₹6,317 Cr) as against 17,079 million units during FY 2019-20, marking an increase of around 6% in the energy supplied. The UT is facing power crisis due to untapped renewable energy, high rate of AT&C losses including pilferage.

J&K is one of the 14 Himalayan States/UT that have a combined small hydro power potential of around 7,550 MW. It is estimated that more than 300 small hydro power sites with a capacity of around 1,311.79 MW have already been identified in J&K. However, during the year 2020-21, 33.573 million units were generated by these SHPs. The UT has huge potential to generate energy through renewable energy resources but this sector has not been utilized to its fullest resulting in huge deficit (31%) between the demand and consumption.

5.3 Recommendations

- In order to minimize the difference of the figures in respect of extraction between the IBM and the UT authorities, a system of regular reconciliation of data with IBM should be put in place to have greater reliability on data compiled. Further, the miners and other parties involved in trading, end-usage, exports to report monthly and annually to the IBM as well as the UT Government so that there is nil difference between the two sets of figures. As per Rule 45 (1) - (5) of the Mineral Conservation and Development (Amendment) Rules, 2011, the owner, agent, mining engineer or manager of every mine, or any person or company engaged in trading or storage or end-use or export of minerals mined in the country, shall register with the IBM and get a registration number allotted to be used for all purposes of reporting and correspondence connected therewith. These registrations were required to be completed within one month from the date of the above amended Rules coming into force on 9 February 2011. The rules prescribed penal measures like cancellation of licenses for falsification in reports submitted by the above parties. Further, the mapping of supply and use as suggested above needs to be considered for implementation.
- The Mining policy needs to be reviewed to bridge the gap between the Royalty rate fixed and Average Sale Price of the minerals. The royalties may be reviewed at specific periodic intervals or when variation exceeds a predecided level while keeping the transportation cost separate and on actual.
- A system needs to be installed for assessment of the DMF realisable to ensure that the amounts due is promptly collected and remitted to proper head of account for usage for the desired purposes. Closer monitoring is needed for DMF to prevent cases of short/non-realisation of DMF. Regular reconciliation needs to be put in place.
- J&K has abundant mineral wealth but due to lack of exploration, delayed approvals, bad weather conditions, improper machinery and equipment, the valley suffers from a static growth as can be seen that out of three proved major minerals only extraction in respect of one mineral is being carried out. Hence the Government needs to come up with solid and simplified policies to extract minerals and open employment opportunities for the youth. The government should provide proper road connectivity for the safe and efficient transportation that will enhance the supply chain of minerals.

- In order to curb the illegal mining in the UT, it is recommended that vehicles carrying all the minerals should be enabled with GPS tracking and special fast tags. There should also be some incentives from the government to the leaseholders for the purchase of heavy/light machinery components enabled with GPS tracking systems that are used for the extraction of varied minerals. There should be a system in place to incentivize whistle blowers and other agencies that assist in curbing the illegal mining. A 360 degree profiling of the minerals exploited and their actual consumption/use/sale should be placed to curb the illegal mining. UT to institute more streamlined system of recording the details of illegal mining cases detected to include mineral involved, volume of mineral detected, royalty involved, statute under which penalty levied, quantum of penalty levied and collected. Also, discretion on quantum of penalty may be dispensed with. Further, Geo-mapping and Geo-fencing of mines and routes may be prioritized and completed within a fixed time frame through Union/UT coordination.
- The wide gap between demand and supply of energy can be reduced through private sector participation and FDI. Considering the region's vast potential to harness renewable resources and the Central Government's efforts to promote clean energy, investment in this sector promises high return. Jammu and Kashmir has a huge quantity of biomass by-products, which can be utilized for electricity generation by the use of solar energy, biogas, gasification technologies, etc. Jammu and Kashmir is fairly untapped in the field of the wind energy.

In addition to the above recommendations it is also suggested that:-

- The Guidelines/SOPs released by GASAB in June 2022 suggested for instituting systems of quarterly reporting framework for collation and collection of information from the last layer of the hierarchy, i.e. the district mining offices to the Directorates to ensure that the UT Government have more effective control on the mining activities, revenues therefrom, market prices of the produces, optimization of revenues and sustainability of resources for the future generations. District offices need to submit quarterly reports as per the standard formats **(Annexure-3)** to directorates and the Directorates to add additional information and build/update the data base of Asset Accounts with copy to AG Offices. Further, the same forms of reports and monitoring mechanism of average sale prices as applicable for major minerals administered by IBM may be devised by the UT to control and monitoring of minor minerals.
- **Grade-wise resources:** There are different grades of mineral resources which attract different rates of royalties. The accuracy of revenues to be realised and actual realisation can be ascertained only if details of grade-wise extractions are maintained in the department. Hence, the department may develop proper mechanism to capture the grade-wise mineral extraction and revenues.

- **Opening of Sub Head/Detailed Head:** Separate sub head under Major Head 0853 (Non-Ferrous Mining and Metallurgical Industries) for segregation of receipts viz. royalty, rent, fees, penalty etc. needs to be opened.

CHAPTER 6

FUTURE CONTINUITY PLAN

6.1 Guidelines/SOPs issued by GASAB

In order to ensure continuous flow of data and to capture data on physical flows of resources, the districts level offices play a vital role as they are the most important layers that control and monitor the resource extractions, data compilers, and generators. Accordingly, quarterly datasets should flow from the district offices. The first and second drafts of the Guidelines/Standard Operating Procedures for preparation of Asset Accounts on Mineral and Energy Resources in States/UT, as circulated by GASAB wing of O/o the Comptroller & Auditor General of India, New Delhi, in December 2021 and January 2022 had already been circulated to all the concerned Departments and series of meeting and workshops were held with the various stakeholders to hand hold them in this endeavor. Detailed guidelines/SOPs may be seen at GASAB's website at <http://www.gasab.gov.in>. The Guidelines/SOPs received from GASAB wing was forwarded to the UT Government vide below letter Nos.

1. TM-J/NRA/2021-22/S-1/F-44/894-908 dated 17-12-2021
2. NRA-Cell/2022-23/02-04 dated 26-04-2022
3. NRA-Cell/2022-23/15-18 dated 27-04-2022
4. NRA-Cell/2022-23/64-68 dated 20-06-2022

The guidelines/SOPs envisage capturing the data/information at the last point of field formation, i.e. the district mining offices alongwith suggestive check-lists, certifications and supporting documents to make the system robust and inclusive. In order to capture the use/consumption/transport/export of resources alongside the supplies, the guidelines/SOPs suggest a set of mechanism to prevent misuse of resources and to optimize revenues for the State/UT exchequer.

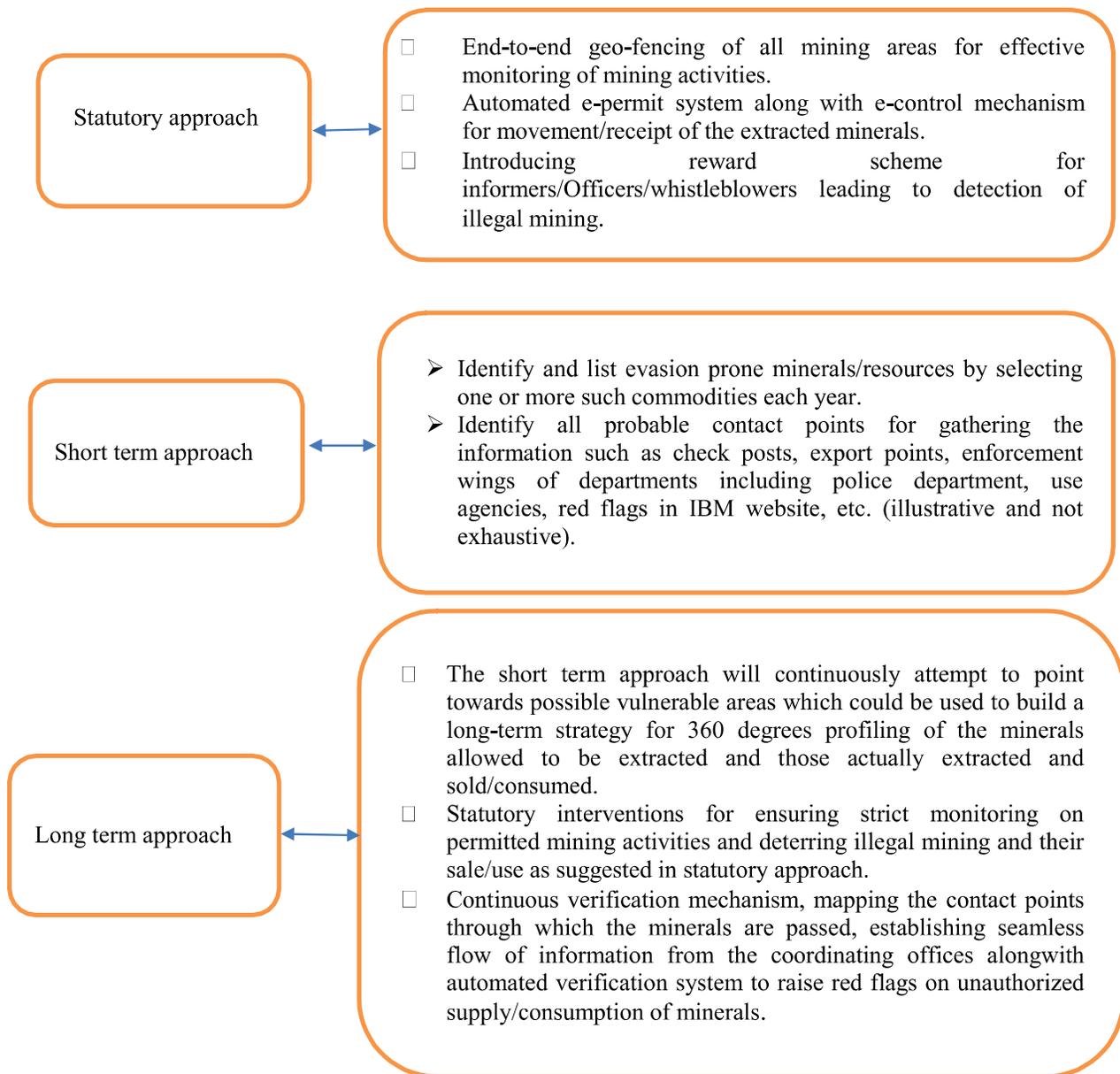
6.2 Need for mapping the supply and use/sale/export

1. Revenue yields from exploitation of minerals and energy resources consist of substantial part of State's/UT's receipt and largely help the entities to fund the welfare and other planned activities of the States/UT. Hence, it is imperative that a robust framework is put in place to ensure zero tolerance on resource and revenue pilferage. Ministry of Mines, Government of India has taken initiative to curb illegal mining through amendment of the Mines and Minerals (Development and Regulation) Act in 2015 which inter-alia enhanced the penalties under section 21(1) & (2) from twenty five thousand rupees to five lakh rupees per hectare and the term of imprisonment increased to five years. Provisions for establishing special courts in respective States/UT have been introduced under section 30(B) and (C) for providing speedy trial of the offences. However, as per information on setting up of special courts in exercise of powers conferred by the amended Act, no special court has been setup in any State/UT.

2. As per the amended Act, 21 States/UTs have framed Rules under Section 23C of the Act to curb illegal mining. Also, 22 States have set up task forces at State/UT and District level to control illegal mining. Further, States/UT's are required to submit quarterly reports on illegal mining to the Indian Bureau of Mines.

3. Apart from the above legislative changes, the Ministry has also developed a Mining Surveillance System (MSS) to use space technology and curbing illegal mining activity in the country. The Ministry has advised the States/UT's to develop similar system for minor minerals. The MSS generates triggers which are sent to the State/UT Governments for action against the offenders. While the Ministry and the States/UT's have already endeavored various controls and punitive measures, yet a 360-degree profiling of the minerals exploited, and their actual consumption/use/sale is yet to be put in place in any State/UT.

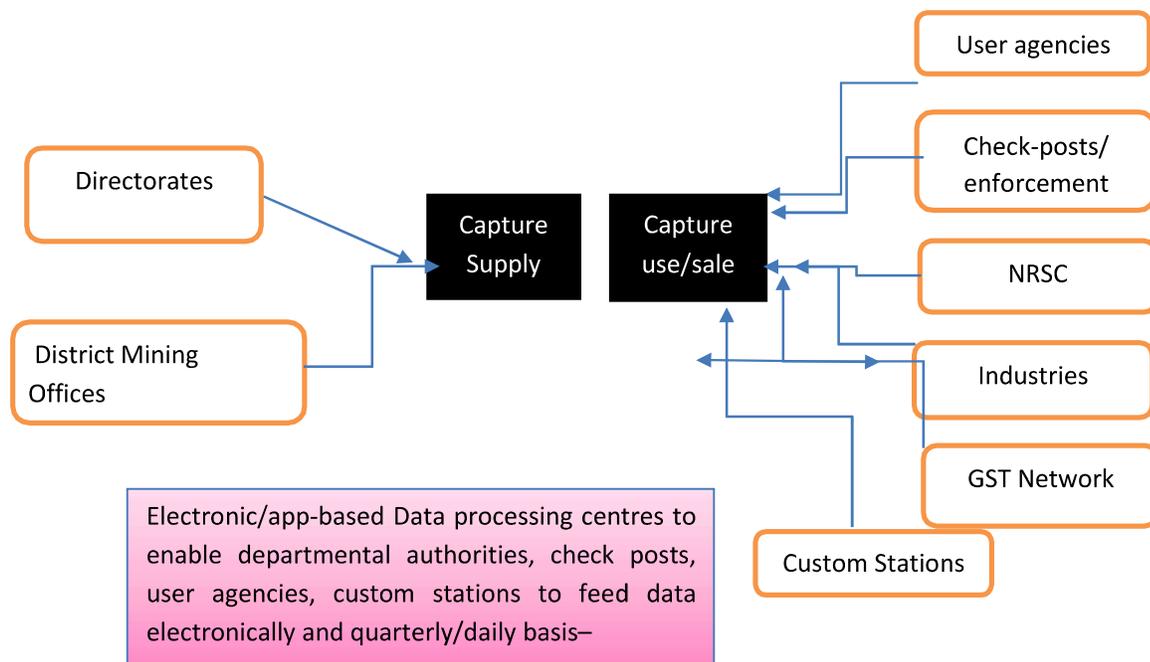
The Concept Paper on NRA prepared by GASAB has discussed illegal mining as a major constraint towards effective management of resources. Consequently, Chapter VII of the book on templates has projected a suggestive mechanism for enhancing the control measures for optimizing monitoring on resource sale/use/consumption for better resource management and revenue yields. As the overall mechanism for 360-degree profiling may involve resource and time constraints, a phased approach is envisaged for capturing the information as detailed below. These are in addition to complying with the requirements and suggestions of Ministry of Mines as discussed above.



The need of automating the systems and processes for capturing the supply/dispatch of resources allowed by the administrative departments and also the use/sale of resources has been elaborated as under:



Mandatory pre-register all mineral carrying vehicles-enabled with GPS tracking and special fast tags



The UT of Jammu & Kashmir has an existing mechanism to prevent the illegal mining, by virtue of which a total number of 5,370 cases of illegal mining have been reported in the UT during the year 2020-21. However, in order to curb the illegal mining activities, a 360 degree profiling of the minerals exploited and their actual consumption/use/sale need to be put in place in the UT.

Annexure-1

The members of NRA Cell of UT J&K during 2020-21

S.No	Name	Designation	Department
S/Shri			
1.	P.C.S.Negi	Sr. Dy. Accountant General (Admn/AMG-III),	O/O Principal Accountant General (Audit), Jammu & Kashmir
2.	Ranjeet Singh	Sr. Dy. Accountant General (Admn)	O/O Principal Accountant General (A&E), Jammu & Kashmir
3.	Rajneesh Gupta	Additional Secretary (Nodal Officer)	Finance Department, Govt of UT Jammu & Kashmir

In addition to the above members, the following Officers/Officials of UT Government, PAG (A&E) J&K & PAG (Audit), J&K were also involved in this project

S.No.	Name	Designation	Department
01	Shri Mahesh Dass	Director General	Accounts & Treasury, Jammu & Kashmir
02	Shri Vikram K Gupta	Managing Director	J&K Mineral Limited
03	Shri O.P. Bhagat	Director	Geology and Mining, Jammu & Kashmir
04	Shri H.L. Langeh	Joint Director	Geology and Mining, Jammu
05	Shri Nisar Ahmad	Joint Director	Geology and Mining, Kashmir
06	Shri Ramesh Khunda	Sr. Accounts Officer	O/o the Principal Accountant General (A&E), J&K
07	Shri Ashok Kumar Koul	Sr. Accounts Officer	O/o the Principal Accountant General (A&E), J&K
08	Shri Sandesh Kumar Talwar	Assistant Audit Officer	O/o the Principal Accountant General (Audit), J&K

Annexure-2

Minutes of meeting of UT NRA Cell

GOVERNMENT OF JAMMU AND KASHMIR
DIRECTORATE OF GEOLOGY AND MINING,
UT of Jammu and Kashmir,

Minutes of interactive meeting on National Resource Accounting (NRA) viz-a-viz Preparation of Asset Accounts for Energy and Mineral Resources (J&K UT Chapter) held on 18th April 2022 at SKICC, Srinagar J&K UT. An interactive meeting on National Resource Accounting (NRA) viz-a-viz Preparation of Asset Accounts for Energy and Mineral Resources (18K UT Chapter) was organized by O/o the Pr. Accountant General, Kashmir on 18th April 2022 at SKICC, Srinagar. The meeting was attended by the officers from the O/o the Pr. Accountant Generals Audit and A&E, Directorate of Geology & Mining, Kashmir and Director Accounts & Treasuries, Kashmir.

The meeting commenced with a formal welcome to all the participants by Sh. Ashok Koul, Sr. Accounts Officer and was presided by Sh. Ranjit Singh, Sr. Dy. Accountant General (A&E) as Chairman. Sh. Ranjit Singh, Sr. Dy. Accountant General introduced the main resource person of the session Shri Sudipto Biswas, Sr. AO, GASAB, O/o C&AG, New Delhi and highlighted the background of conducting this interactive session. Shri Sudipto Biswas, Sr. AO, GASAB, O/o C&AG, New Delhi, made a power point presentation on the theme "Preparation of Asset Accounts for Energy and Mineral Resources" detailing the background and concept paper prepared by GASAB on NRA. He elaborated that Government Accountings Standards Advisory Board (GASAB) Secretariat in Comptroller and Auditor General of India office came out with a Concept Paper on National Resource Accounting (NRA) in India in July 2020 which inter-alia envisages a three term plan for implementation of NRA in India in consonance with the strategy enshrined in the System of Economic and Environmental Accounting Central Framework of the United Nations. This shall develop a repository of vital information on resource bases and their sustainability and enable the country to enter the group of elite countries and generation of Annual Asset Accounts on Natural Resources, both in physical and monetary terms Nationality and State/UT wise. Shri Sudipto Biswas appreciated the Department of Geology and Mining, J&K UT (NRA cell) and Accountants General office, J&K for being one of the few states/UTs of the country for submitting the details of Asset Accounts of Minerals (Major & Minor) in terms of quantity and valuations as per the prescribed formats in the given stipulated time period.

Discussions and Decisions: At the end of the presentation, the representative from O/o C&AG of India, Sh. S. Biswas held detailed discussions with all the participants' wherein the following suggestions/way forward were proposed.

- The Department of Geology & Mining, J&K UT through Direction offices submits the reports on Asset Accounts for Energy and Mineral Resources on quarterly basis as per the prescribed formats to O/o C&AG of India.
- The certified returns of the mining leases, geo tagged maps, treasury receipts etc. shall be provided to the O/o C&AG, as and when required.
- The G&M Department shall share with O/o C&AG, the good practices adopted by the Department in regulation and management of mineral resources of the UT.
- The O/o Pr. Accountant General (A&E) J&K shall incorporate different sub-heads for application Challan fee, mining plan processing fee, consultancy charges, compounding in the major revenue head 0853-Non ferrous Mining and Metallurgical Industries for deposition of the collected amount in the respective heads.
- The Accounts and Treasuries, J&K shall consider the relaxation in expenditure restrictions in respect of printing of inevitable transportation challans/permits and other similar matters.

The meeting ended with the vote of thanks by Shri Nisar Ahmad Khawaja, Joint Director, Geology & Mining Department, Kashmir for organizing the interactive meet which was highly fruitful for the participants and assured full cooperation of the Department for preparing and submitting the information as required for National Accounting of Mineral Resources.

Sd/-
Joint Director
Geology & Mining Dept.
UT J&K

Annexure-3

Quarterly Report Format

As the district mining/petroleum/forest Officers are the most important layers of control and monitoring on resource extractions, data compilers and generators, the following information, resource-wise and mine-wise, may be compiled by the district offices and channelized quarterly to the directorates:

- Name of resource/mine—showing separately major minerals, fossil fuels, minor minerals and other resources (as the case may be) including their grades wherever available
- GPS co-ordinates of the mine area
- Whether the mine area is geo-fenced. If not, target for completion of geo-fencing
- Proved reserve as on 1-4-2022
- Name of lease holder, their Aadhaar and PAN numbers
- Periodicity of lease
- Quantity allowed for extraction(gross)
- Qty extracted till previous month (with detailed grades of minerals, subject to availability)
- OB of extracted resources/finished products for the current month (with detailed grades of minerals, subject to availability)
- Quantity extracted during the month (with detailed grades of minerals, if available)
- Grade-wise quantity dispatched during the month— showing separately Government sector, Private sector, others usage, exports
- ✓ *For this, suitable mechanism needs to be evolved at the district level for monitoring dispatch/usage of resources for various sectors like Government, Private, Export etc need to be installed, if not in place*
- Revenue remitted on account of resource extraction/dispatch—to be verified/reconciled with the treasury figures supported with schedule of receipts
- Variations/percentage variations
- Closing stock of extracted resources/processed minerals(with detailed grades of minerals, wherever available)
- Amounts collected under district mineral foundations and other such trusts and their utilization (if available)
- Comments (if any) including detailed information on detection of illegal mining in the area
- **Certification**
- ✓ That all resources/mining areas including dormant mines are covered in the report
- ✓ Data has been verified with the records of the district office

- ✓ Data is reconciled with that of the leaseholder's records
- ✓ Resources have been extracted/dispatched after prior payment of requisite royalties and other Government dues
- ✓ The receipts mentioned in this report tallies with that reported through the quarterly accounts and verified/reconciled with the schedule of receipts

These data may be compiled by the month after every quarter and submitted by the district Offices to the directorates and the directorates may submit the same to the AsG Offices.