

MINERAL ECONOMICS AND BUSINESS

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Week 12

Lecture 57 : National Mineral Policy - I

Hello, welcome everybody. Today, we will be discussing the National Mineral Policy. The lectures on the National Mineral Policy are divided into two parts. Today, we will have part 1 or the first part of these topics. We are towards the end of the entire course and we are now summing up whatever we have covered in this course.



The image shows a presentation slide with a dark blue background. At the top left, a white rounded rectangle contains the text "CONCEPTS COVERED". Below this, a white rounded rectangle contains a bulleted list of topics in blue text:

- National Mineral Policy of India
- Scope and Vision of NMP
- Regulation of Minerals
- Role of State in Mineral Development
- Database of Mineral Resources and Tenements
- Mining and Mineral Development

To the right of the list is a vertical video inset showing a landscape with a sunset over hills and a mining site with yellow machinery. In the bottom right corner, there is a small video inset of the professor, Prof. Bibhuti Bhusan Mandal, wearing a checkered shirt and glasses, gesturing with his hands.

And I personally think that this is the time when we can talk about the adoption of the National Mineral Policy by our Government of India. And from there, we can also visualize the effect of this National Mineral Policy on the achievement or performance of the mineral sector. Now, here we will be covering certain basic concepts like the National Mineral Policy of India, what is the idea behind it, and what is the scope and vision. Then we will be going through the important part of the National Mineral Policy—not the entire thing, but the important part, like what it says about the regulation of minerals and

what it says about the role of the state in mineral development. And we have some very important information, or rather policy, regarding the information resource or the database on the mineral resources and the tenements that we have.



Need of National Mineral Policy

- A national policy represents the **long-term vision and collective needs of a country**, unlike government policies that focus on short-term goals and change with leadership.
- Formulating a national policy **requires careful planning, future forecasting, and public approval, ensuring stability, consistency in laws, and strengthening global standing.**
- India's National Mineral Policy was **developed over time as mining** was initially regulated by various laws. With experience and understanding of challenges, a **comprehensive policy was introduced to provide clear guidelines** and build confidence in the sector.



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And of course, we have detailed provisions of the mining and mineral development and how they have been included in the National Mineral Policy. Now, what do we need? Why do we need a National Mineral Policy for any country? So, the National Policy actually represents a long-term vision—not a year-to-year vision, but rather looking into the next 20, 30, or 50 years—where do we want to go? So, this is the long-term vision and the collective needs of our country, unlike government policies which focus on short-term goals like budget provisions, which change with leadership.

Where do you want to go and where do you actually want to achieve in next say 2 decades or 3 decades and what are our strengths, what are our weaknesses, why do you want to put more stress and how do we do that. So, that we actually include in the national mineral policies. So, that requires a careful planning and then we forecast the future of all these things and public approval it requires because we are going to implement through different agencies and industries through different government machineries. And we have to ensure the stability consistency in laws that is formulated about the mineral conservation and development. And of course,

we have to strengthen our own global strength in the world, so that we become an important player economic player in the ah in the in the trade and business of minerals.

Evolution of National Mineral Policy

Ancient period:

- In ancient India, as described in Chanakya's *Arthashastra* (4th Century B.C.), mineral policy granted **limited freedom to mine owners while the government retained significant regulatory power.**
- Mines requiring large investments were **leased on a royalty basis**, while smaller mines were directly exploited by the state.

British Period:

- During **British rule**, the **government held mineral rights in British territories**, while princely states managed their own resources. The British followed a **passive approach**, relying on indirect revenue from mining lands.
- The **Indian Mines Act** focused mainly on **worker safety**, leaving mineral regulations largely unstructured in princely states.

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Now see ah India's mineral ah policy, national mineral policy was developed over time and it was initially regulated by various laws. Now with experience and understanding of the challenges involved, a comprehensive policy was introduced which we are going to discuss now. This will provide us clear guidelines and build confidence in the mining sector sector. But, we will just go back to the 4th century BC, where we have clear cut description in Chanakya's Arthashastra very very famous book, famous text, where the mineral policy ah granted the limited freedom to mine owners.

It was there, but in the context of in those days administration or the or the political structure socio political structure, there they had given limited freedom to the mine owners. But the government retained significant regulatory power. So, they had total control that even so that the general people do not directly take away the minerals without giving a fair share of the benefits to the government. So, if the mines required large investment. So, there it was leased on royalty basis otherwise the smaller mines were in previous days were directly exploited by the state means the government.

In the British period, there were changes like, say, in the 18th century, 19th century, and so on. So, there, what we had was the government holding the mineral rights in the British territories. The princely states, which were not directly managed by the British government but reported to the British rulers, managed their own resources. So, what the British followed was actually a passive approach. That means if they received any royalty or benefit, they would get it through the princely states or the small kings and zamindars—all those intermediaries.



Evolution of National Mineral Policy

Post Independence Period:

- After independence, mineral rights gradually transitioned to state governments within 5–10 years, following the acquisition of Zamindari rights in Bihar and West Bengal.
- The Mineral Policy Conference of 1947 emphasized the need for planned development with central coordination, leading to the creation of the Indian Bureau of Mines in 1948.
- Instead of a dedicated mineral policy, the Industrial Policy Resolutions of 1948 and 1956, along with the MM(D&R) Act of 1957 and Mineral Concession Rules of 1960, codified government policies for mining and minerals.
- The first formal National Mineral Policy was introduced in 1990 after consultations with industry stakeholders and was later revised and reissued in 1993.



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But, as I have mentioned several times, the Indian Mines Act focused mainly on worker safety, while mineral regulation, conservation, and development were not properly structured in the princely states—that was absent. After independence, what happened? The mineral rights gradually transitioned to state governments within 5 to 10 years of our independence in 1947. But in 1947, again, we had a mineral policy conference. The importance was very well understood in those days.

And in the conference, the need for planned development with central coordination across the entire country was emphasized. And that led to the formation of the Indian Bureau of Mines in 1948. So, in those days, instead of having a mineral policy, we had policy resolutions. We had the MMDR Act of 1957 that followed, and again, the Mineral Concession Rules of 1960, which codified government policy in the form of rules and

regulations for mining and mineral development. The formal National Mineral Policy was introduced in 1990 and was later modified, revised, and reissued in 1993. What are the scopes—or rather, the ideal scopes—that should be part of the mineral policy?



Ideal Scope of a Mineral Policy

The objectives of a national mineral policy are:

- (i) to foster a viable mineral sector for ensuring mineral supplies
- (ii) to improve mineral conservation and use
- (iii) to harmonize multiple resource development
- (iv) to relate mineral development with social needs
- (v) to protect fragile environment
- (vi) to strengthen the overall contribution of minerals in the regional and national development.

- The policy options must be flexible enough to take care of the changing economic, technological, and social conditions.



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What is the essence of the mineral policy rather? So, the objectives of this kind of policies are to foster viable mineral sector for ensuring mineral supplies. This we say, but here in the policy we adopt certain practices or policies by which we ensure that we will have a viable mineral sector, which will supply the mineral according to the demand of the country and which will greatly involve in the development of the nation as a whole. Now also we have to improve the mineral conservation and use we have to harmonize the multiple resource development, multiple resource development as I said that it is there could be primary supplier, there could be secondary suppliers and there could be also

I mean our our import sources from other countries. So, if one sector supply sector is suffering or going down you can manage with the other resources. So, we have to have a harmonized multiple resources which we have to maintain. So, that we get uninterrupted supply of minerals according to our demand. And also we must relate how our mineral development is ah with the with the social needs.

We will come into this this particular thing when we study ah in details the specific provisions that we have in the mineral policy for the social needs and social development. Now we have to protect the fragile environment that means, everywhere whatever we are doing so far about the development about the social development about different import and export more production more benefit whatever we do we have to look into this aspect the environmental aspect with more important. So, that our business is not stopped on the plea that we are actually creating harm to the environment. For a sustainable business, we must protect the environment so that we continue the business as long as we want.

Vision of NMP 2019

- **Strategic Importance of Minerals:** Minerals are crucial for the economy, supporting domestic industries, reducing imports, and aligning with initiatives like Make in India.
- **Fair and Sustainable Mining:** Resource allocation must be transparent and equitable, ensuring environmental sustainability and benefiting local communities.
- **Regulatory Efficiency & Governance:** A simplified and transparent regulatory framework with e-governance will prevent illegal mining and improve ease of business.
- **Employment & National Coordination:** Mining will create jobs with a focus on gender inclusion, while a central authority will oversee mineral development.

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Now, we have to also strengthen the overall contribution of the minerals in the regional and national development. why as you must have known that we have around 2.5 percent in the our GDP contribution. So, we need to increase that. So, that means, you will see that many countries many developed countries and rich countries they have a good mineral contribution of the of the of the of the mining activities in their total GDP. So, we need to improve that and that will also help in the regional and overall national development, the overall contribution to the development of any region any state or say our national development.

Now the policies are we are not expecting should be very stringent. So, it will it will definitely change depending on the economic or say our need like the technological

things as we are changing from say diesel and petrol vehicles to the electric vehicles. So, now, how we are changing our policies or are we shifting our focus from one mineral to the other that we need to see because the policies cannot be stringent otherwise that will not be consistent with our development policies. Our goal is finally, the regional and national development. So, it has to be flexible.

So, we keep provisions we make the the policies in such a way that it can be in a modified suitably in the in due course of time. Now what are the strategic importance of minerals? So this is crucial for the economy because supporting domestic industries as I was saying just now that we have to support the domestic industries whatever we have. We have to reduce imports and import dependency. import that if if if we having we are having a import ah ah your relationship long term relationship with some countries and some of our geopolitical issues that is interrupted then the import dependency will create lot of problems in the supply and we have to depend on the domestic supplies domestic supplies.

Regulation of Minerals

- Mineral resource management is a **joint responsibility of the central and state governments** as outlined in the Constitution.
- **Transparent and seamless processes for granting mineral concessions** will ensure ease of doing business and foster sector development.
- Regulatory institutions like the Indian Bureau of Mines (IBM) and State Directorates will be strengthened with upgraded resources and skills for effective enforcement.
- **E-governance systems**, including satellite and remote sensing technologies, will improve transparency, enable supply chain monitoring, and prevent illegal mining.

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So, we want to improve rather the domestic supplies wherever possible and reduce the And of course, we improve our own production base, which will align with the general initiative of Make in India. That means we want to support the general principle of Make in India. So, we have to improve our own production so that we can meet the domestic demand as much as possible. Now, we are going for fair and sustainable mining.

The resource allocation should be transparent. That means it should also be in the knowledge of the public. That means it should be in the public domain. Everybody should be able to see who is getting the resource allocation, like the lease grants. And if there are many competitors, everybody should clearly be able to see why he has not got or somebody else has received the mineral allocation, the resource allocation, the lease, or when some auction is going on.

So, there will be a lot of parties. So, why somebody could not get this thing. So, how much was the other party quoted. So, it should be very clear, equitable, and because this will also ensure environmental sustainability and benefit the local communities. Here, not only fair mining but also sustainable mining, we have to ensure.

Now, what are the regulatory efficiency and governance here? It should be simplified, easy to understand, and a transparent regulatory framework. So, with e-governance, which is a revolutionary shift from the old days to the present governance style, we can see all these things. We can apply for information and get the information from the database all through the internet. So, the regulatory framework should be simplified so that people can easily understand it, and it should be transparent so that one can see what has happened to their applications and how many applicants there are for getting a lease

or what geological information is there or environmental information is there if I want to apply for a lease in a certain area. If I want to attract investors, the information database should be very clearly visible and available to those people; otherwise, they will not be easily attracted. This will also prevent illegal mining and improve the ease of business. Say we have a database or a GIS interface through which you can see where the mining is going on, and you can also superimpose the lease boundaries that are granted by the government. Anything being mined outside the granted lease areas can be easily understood as illegal mining.

We can investigate those areas and take actions to prevent such illegal mining. This will also improve the ease of business. Now, the very important point is the employment and the coordination part. If we are improving or rather increasing our business, the number of mines we had before and the number of mines we have now. If you are going on increasing, bringing more things under the purview of the regulatory framework, then we can officially understand that we will create

More jobs for the people, more leases, more mines, more production. And, of course, no discrimination. So, we will create jobs, and there will be no gender discrimination. So,

nowadays, you must have observed that more and more female employees are there, both in the management and also in the worker sectors, especially mining. There will be central authorities, different central authorities; they will oversee the mineral development. But generally, our idea is that we will have to create more jobs, and we will definitely focus on inclusion—that means all-inclusive.

It is an inclusive growth principle. Mineral resource management is a joint responsibility of the central and the state governments. As you must have seen throughout the MMRD, different provisions of the act, rules, and regulations show how they are jointly sharing the responsibility in the exploitation and management of the mineral resources. This is because, in principle, we have adopted this idea in our constitution itself. So, when you are granting mineral concessions, it has to be transparent; it has to be a seamless process.

That means if we are submitting an application somewhere, the process of movement of the application from one place to another has to be seamless, and a minimum number of interventions will be required for the smooth movement of our applications from the point of submission to the point where it is being disposed of. Because this has to be ensured, as this will, in turn, ensure the ease of business. Otherwise, if it takes—previously, it used to happen that you submit an application today and then after five years, you get a reply that you are not going to get this, or some reasons which were not very clear to the applicant. This cannot be good—this is not good for ensuring the ease of business. Anyone who has multiple options



Database of Mineral Resources and Tenements

- A national inventory of mineral resources will be created and maintained in digitized form, incorporating both a resource inventory and a web-based tenement registry for public access.
- A Mining Tenement System (MTS) will be developed to automate the entire concession lifecycle using advanced IT systems.
- Baseline and exploration data from government agencies and concession holders will be openly disseminated, with collaborations encouraged among research institutions, universities, and industry professionals.



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For doing business, either in pharmaceuticals, mining, or some other trade, they will see where the ease of business is and where it is more profitable—both things. To foster the development of the mining sector and ensure ease of business, you must have a transparent and seamless process for granting mineral concessions. Mineral concessions essentially mean leases, mining leases, and renewal of mining leases—all these things. Now, here, as part of the policy, the government wants to strengthen the Indian Bureau of Mines and the state directorates. So that they have upgraded resources and skilled manpower for effective enforcement of the Mines and Minerals (Regulation and Development) Act, rules, and regulations.

As I said, e-governance systems, including satellite and remote sensing technology, are used to monitor mining activities—how they spread from one zone to another, the rate of activity in any particular zone, and whether there is deforestation, which can be seen through satellite images. This will improve transparency and also enable supply chain monitoring to track where the minerals are being produced. If you can see visually, you can also plan how the mineral corridor is developed—how it will flow from one place to the point of sale, for example, to the port or to places where coal will be used. For power generation. If you can see through satellite or remote sensing technology, you can also plan how the mineral or coal will move from the place where it is produced to places where we have prospective customers.



Role of State in Mineral Development

- The state's primary role in mineral development includes facilitating exploration and mining activities, developing infrastructure, and ensuring efficient tax collection.
- States will prepare an Annual Business Plan or roadmap for mineral sector development, ensuring transparency and fair play while reserving areas for state agencies.
- Granting of mining operation clearances will be simplified with time-bound procedures via online public portals, including mechanisms to address delays.
- States will aim to increase trust between governments, miners, local communities, and other stakeholders through openness, fairness, and inclusive policymaking.



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Now, what is the role of the state in mineral development? The primary role of the state in mineral development is to facilitate exploration, mining activity, develop mineral infrastructure, and ensure efficient tax collection. That means revenue collection has to be very transparent, easy, and efficient. Nobody can evade tax. So, the system has to be formulated, and the machinery must be designed in such a way that it has an efficient tax collection mechanism already in place.

Now, the granting of mining operation clearances will be simplified as per the policy, and we have a time-bound procedure. by the online public portal. So, when you are, as I said, application processing, all these things are to be time-bound. You cannot say you cannot just keep a file there, sit on the file, and not process it. Those days are gone now. So, now if you submit an application, there is a processing time.

So, within that period, you must dispose of it—whether you decide to send back the proposal or forward it for further processing. There is a time-bound period: 7 days, 15 days, 30 days—everything is written there. So, it is a time-bound procedure so that mining operation clearances are granted much faster than before. Now, the states will aim to increase trust between governments and miners, meaning the coordination between local communities, miners, the government, and all stakeholders. So, how do we do that? First, it is through openness, fairness, and inclusive policy-making. See, if you are only focused on profit and forget about social development or the development of the local community, they will not support it.

Prospecting and Exploration

- Regional and detailed exploration will use advanced technologies like seismic 2D/3D systems in a time-bound manner.
- Public funds will focus on high-uncertainty areas, while private investment in exploration will be encouraged.
- Exploration will prioritize energy-critical minerals, fertilizers, precious metals, and deep-seated minerals where India has a poor resource base.
- Policies like Right of First Refusal, seamless licensing, and composite licenses will attract private investment, while collaboration between the Ministry of Earth Sciences and GSI will support offshore exploration.

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That means the government policy, the miners, the local communities around the mining area—all stakeholders must be involved through openness, fairness, and transparency. So that we have inclusive growth. We ensure inclusive growth—repeatedly emphasizing, inclusive growth is the keyword in all these policy matters. If we talk about technologies, the National Mineral Policy has given great, commendable importance to exploration matters because we all understand unless you expedite the exploration process and strengthen your resource database, you cannot think of a bigger mining industry. So, that is why the government has given a lot of importance and impetus to exploration activities. not only by making it big, but technologically also it is much more efficient and smart.

So, for example, as a seismics 2D, 3D systems and in within a time frame that within this time frame, this particular area, this particular state or this particular region has to be thoroughly explored as to what mineral content or resources available. Now public funds also will focus on the high uncertainty areas and we invite private investment in exploration with certain benefits that we ensure that if you do these things what benefit that they are getting. Exploration activities will also prioritize the energy critical minerals. what priority we have, we have option for mining different minerals. So, we give the policy gives specific importance or give priority on the energy critical minerals, those minerals which are critical for the energy generation.



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- Baseline and exploration data from government agencies and concession holders will be openly disseminated, with collaborations encouraged among research institutions, universities, and industry professionals.



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this the manufacturing and supply of fertilizers the precious metals and deep-seated minerals where we have poor resource base so unless we explore the the the resource base we don't know what strength we have so the the the the exploration has given enough priority on this page like the energy critical for the fertilizer the precious metals and deep-seated minerals We have policies as we have seen in the mineral auction rules, we have adopted and the policy depending on the policy that we had in national mineral policy. The right of fast refusal giving importance to the people who had captive mines. we have seamless we we we want to adopt seamless licensing and composite license. And of course, we we want to collaborate with different other important departments like the Ministry of Arts Sciences, GSI to support offshore exploration.

I mean this in as a whole will give much more strength to the mechanism that that that will ensure that there will be seamless licensing and then you get easily get the mineral concessions. And with the help of the ah different ministries we also as I said in the earlier earlier part that we want to go for the deep seated minerals. That means, in the critical areas we need much more transparency and much more faster processing. Because these are critical issues to be resolved as soon as possible.

This is very important and this is a very important development also so far what we have seen. If you open the IBM Indian Bureau of Mines website you can see it also. The national mineral inventory of the mineral resources. This the national I mean the NMP 2019 says that this will be created. Much of this job is done you can see it in the IBM website also.

that we have created and maintained in digitized form incorporating both the resource inventory and of course, the web based tenement registry. Tenement registry that means, which part has been leased out which part has not been leased out which are still there all registry will be available online. So, that you can easily see what kind of mineral and who are your the neighbours I mean who are already having the leases like that. So, this mining tournament system is a dynamic ah system is is where you can continuously update the changes that is taking place. If the mine is closed or finished or a new mine is coming somewhere, you can see everything in the mining tournament system.

This has been developed to automate the entire concession life cycle life concession life cycle from the day that you are getting the mineral concession of the list and to the date when the mine is being closed. Through the advanced information technology system the mining tournament system has to be developed and you can see it now that it is how how

we have we are doing it and if you visit the IBM website you can have a ah look on that. Now, for the purpose of the faster mining or getting much more many people involved in your mining business, the open dissemination of the exploration data must be there. For that whoever are involved in this including the the agencies who are doing this exploration jobs and the research institutions in universities, industry professionals all are supposed to collaborate and then develop this exploration data fully and it should be available to the public for the purpose of making decisions in respect of the investment specially. Now, the general strategy is that the mineral extraction and the management should align with the long-term national goal, as I have said earlier.



Mining and Mineral Development

General strategy:

- Mineral extraction and management will align with long-term national goals and be integrated into the country's economic development strategy, including supporting initiatives like "Make in India."
- Mining technology will be modernized to ensure efficient extraction and utilization of the entire Run-of-Mine (RoM), improving productivity and resource efficiency. Recycling processes will be developed to conserve resources, achieve energy efficiency, and derive economic and environmental benefits, supplementing primary mineral extraction.

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So, that means we strongly encourage initiatives like Make in India. And we want to modernize the technologies to ensure efficient extraction and utilization of the entire run of the mine, improving productivity and resource efficiency. And, of course, we want to go for recycling processes wherever applicable, so that we conserve our resources. We do not just use and throw; we see wherever possible, then we go for recycling. We should achieve energy efficiency and derive economic and environmental benefits.

So, this will ensure overall development, and these are the general strategies in relation to mining and mineral development. As we can easily understand, if you have a strong resource endowment, we give priority there itself to extract minerals where we already

have a good resource base. What that will do—if we have a good resource endowment, that means good resources. Also, we have knowledge about the external market demand. Then, if we give more importance to this in the beginning, it will quickly enhance the economic and social well-being. When there is demand and you have resources, you should give more importance to the extraction of those places where we have a strong resource base. And measures, as the policy says, will be adopted to ensure uninterrupted supply of minerals, so that if the lease expires, you do not see for 3 or 4 years doing all those paperwork. So, we have to see that the lease, after its expiration, has to be.

Mining and Mineral Development

- Efforts will focus on **extracting minerals where the country has strong resource endowment** to meet both domestic industry demands and external market requirements, **enhancing economic and social well-being.**
- Measures will ensure **uninterrupted supply of minerals**, particularly addressing lease expirations in 2020 (merchant mines) and 2030 (captive mines). Incentives will be introduced to encourage mergers and acquisitions of mining entities and facilitate transparent transfer of mining leases.

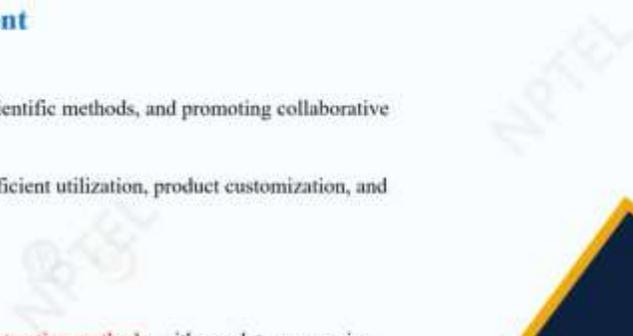
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It has to be quickly given to others, like addressing the lease expirations in 2020 for the merchant mines and again in 2030 for the captive mines. So, policies have been adopted where we can quickly take decisions on how to reallocate these mining leases. Now, to encourage, the government encourages mergers and acquisitions of mining entities. So, that it facilitates the transfer of mining leases from one to the other. If you are acquiring then you already become the owner of the lease that that the the the company that is going for the acquisition of the other existing mining companies.

we have to focus on zero waste mining. So, we used to have previously this is a low grade mineral. So, we have to use develop scientific methods. So, that we can promote zero waste mining nothing to be wasted some kind of use must be invented. So, that

whatever we are mining out even the waste material also some kind of use must be there.



Mining and Mineral Development

Conservation and Mineral Development

- Focus on **zero-waste mining**, preventing unscientific methods, and promoting collaborative mining in large belts.
- Fiscal and non-fiscal benefits to encourage efficient utilization, product customization, and optimal mineral extraction.

Scientific Mining:

- Mining will follow **systematic and efficient extraction methods**, with regulatory agencies working with R&D for better mining plans.
- Organizations like IBM and State Directorates will be upgraded with skilled manpower and advanced technology for sustainable mining enforcement.

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So, it has to be a zero waste mining. Now proper utilization, efficient utilization the government is all they are encouraging. What do you exactly mean by the scientific mining method? That it is a systematic and efficient and and and it is it always implies that it is a safe extraction method, efficient extraction method, systematic extraction method and the sustainable extraction method. So, the regulatory agencies are working with the R and D for better mining plans.

So, that it is it has to be systematic more efficient mining method, more modern technologies are being brought. Now, the mining methods are also changing previously some the old methods were going on. Now, we also adopted we are adopting the the modern mining method for faster and safe mining of minerals. Now, about the mining and machinery and mineral beneficiation we must have our own mining efficiency and safety and productivity, but the idea is that our capability should be there for both mining and beneficiation. Something like you are doing a huge amount of for example, iron ore and you do not have a smelting facility you are sending somewhere else or we are producing some concentrate you do not have the benefit.

I mean you have producing ore and for beneficiation you are going sending it somewhere else. Now, we should have the beneficiation and mining both. Previous we used to do that that the low grade ores were sent to some other country, they ah ah they they they use their own processing technologies and they they send it back to us. This is expensive and why we should not have we should not adopt technology where we can ah go for the beneficiation of the low grade minerals.



Mining and Mineral Development

Mining machinery and mineral beneficiation equipment:

- The use of modern equipment and technology will be encouraged to enhance mining efficiency, safety, and productivity, while fostering the development of indigenous manufacturing capabilities for mining and beneficiation machinery.

Enhancing human resource development:

- Efforts will focus on upgrading skills, improving gender balance, and fostering the adoption of advanced technologies like mechanization, automation, and digitalization in mining, with continuous training to ensure a competitive and well-equipped workforce.

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Most important again is the human resource development. We have to upgrade skills, the policy says. We must improve the gender balance, no discrimination at all. And so that the new the manpower which are now being utilized, they are trained in advanced technologies, automation and digitalization of mining. So, that we continue ah ah we we continue to be a part of the your competitive and we get competitive business and we must have the well equipped work force to do business in in in in mining industry which is now more advanced and having more for higher higher technologies to do faster mining safe mining and scientific mining.

we need specific training and skill development of the human resources to do these things. So, the mining the policy says that the mining companies should be encouraged or they will be encouraged to invest in infrastructure development including the rail, road, coastal. This is peripherals of the mining ah mining companies, but you will see that the

mining companies are all also investing in that. What happens if you if you depend on the government for the infrastructure development, then your mining process will be slowed down. So, what we do that we have a coordinated efforts from the state and central agency and we we also the the mining companies will involve in the infrastructure development.



Mining and Mineral Development

Infrastructure Development:

- Mining infrastructure will be developed in an integrated manner, including local evacuation networks, dedicated mineral corridors, and innovative solutions like slurry pipelines and closed-loop conveyors to enhance efficiency and minimize environmental impact.
- Mining companies will be encouraged to invest in infrastructure development, including rail, road, and coastal waterways, with coordinated efforts from state and central agencies to facilitate transportation and prioritize mineral movement.
- Infrastructure development will adopt an integrated approach to link mineral development with regional and peripheral development, ensuring social and economic benefits for local and tribal communities.



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So, that the mining business it moves faster much much faster than and in those in the previous days. Now this will as I said it would must adopt an integrated approach. So, that the mineral development and the regional and peripheral development as I was saying that that must ensure the social and the economic benefits of the local and the tribal communities also local. That means, you should not discriminate, you should not make profit and go away. So, all the development your own business infrastructure around and the social and economic benefits to should be given back to the local and the tribal communities.

This is a very important part of the our national mineral policy. We will have specific discussion on these things in the next part or part 2 of the national mineral policy which will continue. And the government also will encourage and see that the new projects which are coming if the industry is asking for financial support, it will promote the

financing beyond the machinery and infrastructure. So, that there will be broader mining sector growth. So, the financial



Mining and Mineral Development

Facilitating financial support for mining

- Efforts will be made to enhance financial support for all stages of mining, including prospecting, exploration, and mine development.
- The government will work to grant mining the status of an industry and promote financing beyond machinery and infrastructure to encourage broader sector growth.

Small deposits:

- Small and isolated mineral deposits will be developed for economic extraction, ensuring scientific mining practices and local employment. A cluster approach will be adopted, granting multiple deposits as a single lease with shared smelting and refining facilities.
- In scheduled areas, tribal communities will be involved in mining operations while ensuring their development and environmental protection.

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For example, loans and support, some tax holidays, some tax benefits, so the government will facilitate financial support in all those forms, so that the mining business is encouraged. Now, where as you must have seen that the mining is also done in small small sector. ah for for economic extraction and efficient ah your extraction. Of course, this is a very important point and a very critical point where we had we have seen that there are small mines in same area which could have been used as a cluster approach, but the policy says that this will be adopted. So, so that you do not have to leave ah minerals between two small leases.

So, can we do a cluster approach can we merge small things ah multiple deposits as a single lease multiple deposits as a single lease. So, the wastage is minimum and we can have a shared smelting and refining facilities for faster processing of the ore that we produce. We also the policy also says the in schedule areas, the schedule tribe, schedule caste must be involved in mining operations. So, that there is again the inclusive growth. The policy also gives specific importance on the replenishable beach and sand minerals for economic growth because this is very important as far as our national security requirements.

and the international protocols in regard to the specially in the radioactive minerals. So, we the ah the policy also give specific importance on the mining of these sand minerals. Overall as we are going through all the different steps or different policies one by one everywhere we have to must ah must have observed that the mining operations must provide protection of environment. It prioritizes the sustainable land use, it must conserve the biodiversity that means it must not destroy the biodiversity of the area where the mining is going on and it must not do any kind of environmental degradation.



Mining and Mineral Development

Beach Sand Minerals :

- Efforts will be made to promote the extraction of replenishable beach sand minerals for economic growth, ensuring coordination among various regulatory and environmental agencies while adhering to national security requirements and international protocols.

Protection of environment:

- Mining operations will prioritize sustainable land use, conservation of biodiversity, and prevention of environmental degradation through modern scientific norms, afforestation practices, and adherence to a Sustainable Development Framework.
- Mining will not be undertaken in ecologically fragile and biologically rich areas, which will be designated as "in-violate" or "no-go" zones, while Exclusive Mining Zones (EMZs) will be established with prior statutory clearances to streamline operations.

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So, for that we have to adopt the scientific norms and afforestation that means, if there is a deforestation we have to compensate with the afforestation practices and we should adopt ah SDF sustainable development framework which is very important development in the MMRD also that if you if you if you ah go through the mines and mineral regulation and development act, you will see that there is a specific provision of the sustainable development framework and how to adopt and how to practice by the by the mining sector. And ah the sustainable development is basically for the long term development goals. So, it the it has to see that the the sustainable development must incorporate all those practices for the environmental, economic and social considerations. So, right from the beginning to the end, we must follow long-term development goals, not short-term, and then we do not abandon the mining projects at all.

And the government has set benchmarks for mining operations to evaluate their performance. That is why we have introduced the 5-star rating system, which you can also see on the websites. So, the companies which are adopting certain practices, following the standard practices to incorporate environmental, economic, and social considerations. They will get better star ratings. So, this is a very important part that the government has set benchmarks, and you have to reach or achieve those benchmarks so that you can maintain the sustainable development of the mining sector.



Mining and Mineral Development

Sustainable development in mining sector:

- Mining operations will incorporate environmental, economic, and social considerations from the early stages to ensure financial viability, social responsibility, and environmentally sound practices with **long-term development goals**.
- The government will **set benchmarks for mining operations to evaluate their performance** on sustainability and enforce commitments from mining companies to adopt sustainable development practices.

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We will continue this discussion in part 2 of the National Mineral Policy 2019 lectures. And in the meantime, I must say that you can download and see the National Mineral Policy from the Ministry of Mines. And, of course, you can also read certain books. These are old publications, but they will still give you certain ideas about the basics of the National Mineral Policy. With this, we come to the end of the first part of the National Mineral Policy, and in the next lecture, we will continue with the second part of the National Mineral Policy 2019.

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Thank you very much.