

MINERAL ECONOMICS AND BUSINESS

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Week 12

Lecture 58 : National Mineral Policy - II

Hello everybody, welcome once again. We are going to ah go through the national mineral policy once again and this is the part 2 of the ah lectures on the national mineral policy. As ah you can see that ah in the first part there were certain ah issues related to mining and mineral development was done, we will continue with that in ah this this parts part 2. And we will also talk about the policy matters related to the foreign trade, foreign investment, what we have said research and development, there are intergenerational equity is a very peculiar term which I will explain.



The slide features a dark blue background. On the left, a white rounded rectangle contains the title 'CONCEPTS COVERED' in bold black text. Below the title is a list of six bullet points in blue text. On the right, a white rounded rectangle contains a photograph of a mining operation at sunset, showing a large open-pit mine with yellow excavators and trucks.

CONCEPTS COVERED

- Mining and Mineral Development
- Foreign trade and foreign investment
- Research and Development
- Inter-Generational Equity
- Inter-Ministerial Mechanism for Sustainable Development
- Expected outcomes of NMP

Then about the ah different ah exchange or collaboration between the different ministries for sustainable development and a short note on the expected outcomes of NMP. Let me give you one point here I must touch that this is not an exhaustive document, this is not the entire national mineral policy here. So, not only that we are not talking everything

about all the points that we have here. It is to give you the structure of the national mineral policy 2019 as adopted by the government and the country and in which direction we are going. You will have an idea of the policies that the government has adopted not all the things because then then it becomes too big. So, it will it is not an exhaustive things, but most of the important ideas have been covered in this lecture. As you can see that ah I have said in the earlier lecture that I will I will specially mention about the welfare of the project affected persons. So, the mining projects must include a thorough assessment of the economic, cultural and environmental and social impact of the affected individuals. Whenever you are taking a taking up a mining project then you must carry out the probable the futuristic assessment of the impact on the all this ah on these things.

National Mineral Policy

Mining and Mineral Development

Welfare of Project Affected Persons:

(a) Relief & rehabilitation of displaced and affected persons:

- Mining projects will include a thorough assessment of the **economic, cultural, environmental, and social impacts** on affected individuals, with **appropriate relief and rehabilitation packages** to improve their living standards and ensure sustainable incomes.
- **Special attention will be given to tribal and weaker communities** in mineral-rich areas, following the provisions of the RFCTLARR Act, 2013, and other relevant laws to ensure fair compensation, resettlement, and rehabilitation.

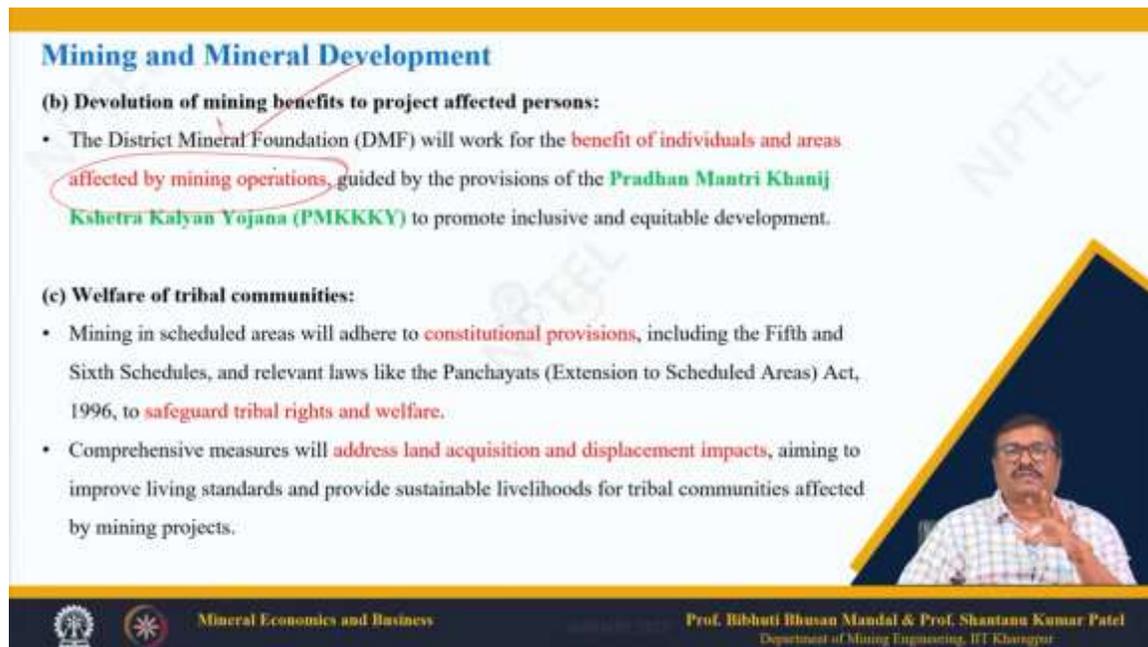
Right to fair compensations and transparency in land acquisition, rehabilitation and resettlement Act, 2013

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So, if you are doing that then what do you propose? for appropriate relief and rehabilitation that you has to be a part of your project, what packages you are offering and how you are improving their living standards. So, that we have a they can have a sustainable income source. Now, special attention must be given to the tribal and the weaker communities there are certain act also in regard to the rehabilitation and the resettlement of the displaced people that we must keep in mind when you are you are displacing some people when you are taking up any mining project in remote areas especially in forest. Now the devolution of the mining benefits, we have important

establishment called the district mineral foundation which has been specifically established for the purpose of providing benefit of the to the individuals and areas which are affected by the mining operation specifically.



Mining and Mineral Development

(b) Devolution of mining benefits to project affected persons:

- The District Mineral Foundation (DMF) will work for the benefit of individuals and areas affected by mining operations, guided by the provisions of the Pradhan Mantri Kshetra Kalyan Yojana (PMKKKY) to promote inclusive and equitable development.

(c) Welfare of tribal communities:

- Mining in scheduled areas will adhere to constitutional provisions, including the Fifth and Sixth Schedules, and relevant laws like the Panchayats (Extension to Scheduled Areas) Act, 1996, to safeguard tribal rights and welfare.
- Comprehensive measures will address land acquisition and displacement impacts, aiming to improve living standards and provide sustainable livelihoods for tribal communities affected by mining projects.

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And, this is guided by the provisions of the Pradhan Mantri's Kanishkshetra Kalyan Yajna PM KKKY as we call it to promote inclusive and in equitable development. I will give you just an idea how it works that if a district is affected or the people of a district is affected, then we have we calculate a particular fraction of the royalty or percentage of royalty. As, as a fund that has to be deposited to the district mineral foundation or district mineral fund which will be exclusively used for the social and economic benefit of the people who are affected in that district. That means, it is not to be submitted to the to the central government and for general use. It is specifically and it is a very important development in the national mineral policy that we have adapted.

that you do not have to wait for the general fund to come to see that the social and economic benefits take place in a in in any area where it has been severely affected by the mining activity. So, here the PMKKKY gives a provision that the fund comes from the mining itself and and a part of that comes for for the social and economic development of the project affected people. So, broadly we will definitely be guided by the constitutional provisions including the 5th and 6th schedules, where we are supposed to

safeguard the tribal rights and welfare. Now there has to be a comprehensive measures that has to be adopted to address the land acquisition and the displacement impacts. So, that we can improve the living standards and provide the sustainable incomes to the tribal communities which are supposed to be affected which are likely to be affected by the mining projects.



Mining and Mineral Development

Mine closures:

- Mine closures will focus on **restoring ecology, regenerating biodiversity, and addressing socio-economic impacts**, ensuring an orderly and systematic process to minimize disruption to mining communities.
- The government will ensure that **financial provisions for mine decommissioning and land reclamation** are prioritized, making these integral to the mine development process for efficient and effective rehabilitation.



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During the mine closures, this will focus on restoring the ecology that was disturbed due to the mining activity. This will also regenerate the biodiversity that was affected. It is preferable not to disturb the biodiversity in the first place. If for any reason it must be done, then we have to regenerate the biodiversity. We have to address the socio-economic impact and ensure there is an orderly and systematic process to minimize this disruption.

We have to restore all these things that we have disturbed during the mining operations. So, for mine decommissioning and land reclamation, financial provisions are to be made. There are specific provisions in the mine closure rules that have been framed by the Government of India, and the mining companies are supposed to follow all these guidelines so that closure actions are integrated into the mining operations before closure. And when the mining operation is completed, the closure actions should also be

completed. For that, financial provisions are already made, and the mining companies are supposed to follow the government rules regarding these closure actions.

Mining and Mineral Development

Safety of mines and mine-workers:

- Efforts will focus on **developing and adopting safer mining methods** to reduce accidents, **minimize occupational health risks**, and improve overall safety for workers and nearby communities.
- The Directorate General of Mines Safety (DGMS) will be reinforced with adequate manpower, equipment, and skills to effectively regulate and ensure the safety and health of mine workers.

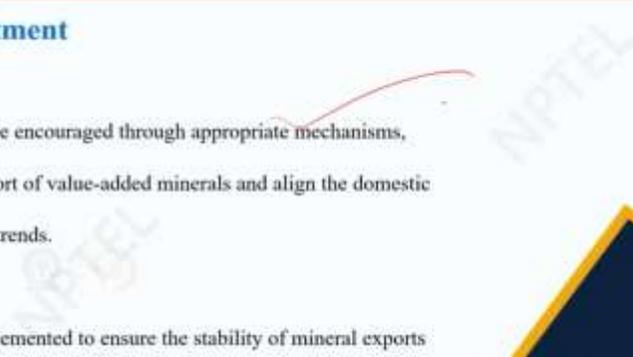
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Even though we are mostly talking about mineral conservation and development, we must ensure that we adopt safer mining methods—not only advanced but also safe—so that overall accidents are reduced. It has to minimize occupational health risks because mining is not only unsafe, but there are many occupational diseases related to mining operations. For that, as part of the policy, the DGMS is supposed to be reinforced and strengthened with adequate skilled manpower and equipment so that they can effectively regulate and ensure the safety and health of mine workers. As part of the policy again, foreign trade and foreign investment are strongly encouraged through appropriate mechanisms. This is to promote the export of value-added minerals and align the domestic mineral industry with international economic trends.

And the focus is that the whole thing is to be very smooth, transparent, and fast to expedite the entire process; otherwise, foreign direct investment cannot be encouraged. The long-term import-export policy is to be implemented. Why? Because we want to ensure the stability of mineral exports and coordinate imports. This is to streamline and stabilize the supply of minerals and their use in the countries.

There are different fiscal aspects, but I am just trying to highlight one aspect that is very important. The policy states that all efforts shall be made to benchmark and harmonize the royalties because when you are fixing the royalty percentage or what royalty is to be paid by the mining companies. All other direct taxes, like surface rent and dead rent, as well as corporate taxes. Then we have to see what the mining companies are doing in other countries. Otherwise, what will happen? People will try to shift to attractive destinations.



Foreign trade and foreign investment

Foreign investment

- Foreign investment in the mining sector will be encouraged through appropriate mechanisms, while efforts will be made to promote the export of value-added minerals and align the domestic mineral industry with international economic trends.

Import-export policy

- A long-term import-export policy will be implemented to ensure the stability of mineral exports and coordinate imports with the development of indigenous mineral-based industries, fostering international cooperation for mutual benefit.

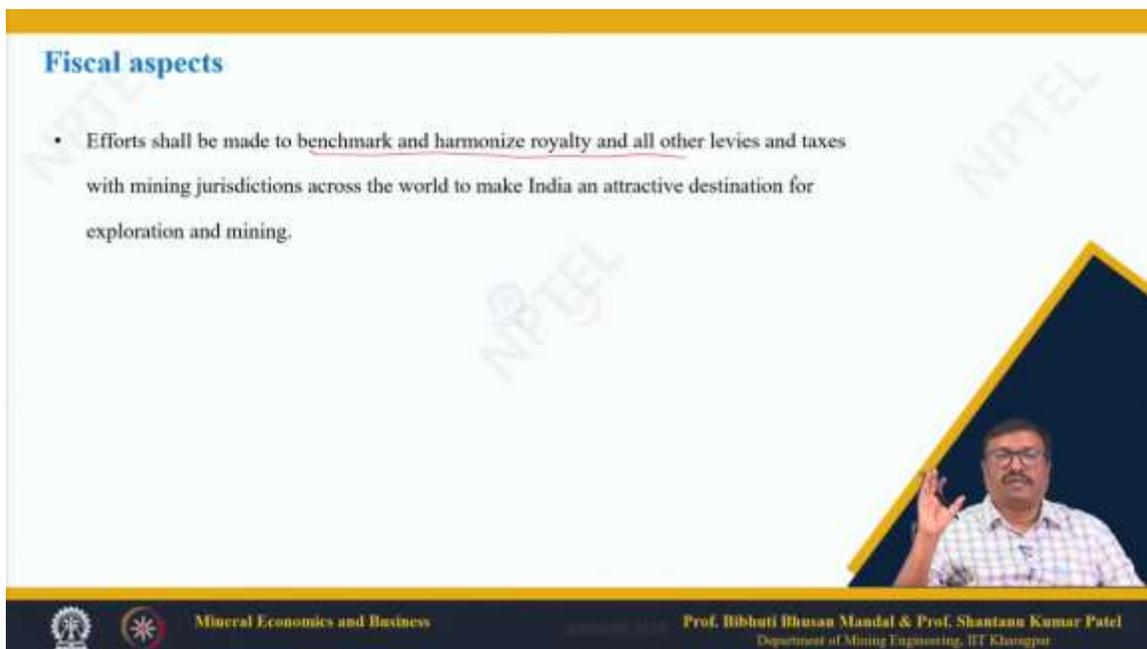


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So, our royalties and taxes should be comparable to those in other parts of the world so that we do not discourage people, at least. India should be considered an attractive destination for mining investment. So, we must benchmark, compare, and harmonize the rates of royalties and other levies with those of other countries in the world. The research and development part has been given a lot of importance in the National Mineral Policy: that we must develop good mining methods for safety, greater efficiency, and better ore recovery, and we must emphasize important areas like rock mechanics, ground control, and mine design engineering. The Ministry of Mines is inviting—you will see on their website—S&T project proposals in these fields and other fields to do more research and, of course, they are also encouraging proposals where the proof of concept already exists, such as small startup proposals.

So, there that also the Ministry of Mines and the Government of India is encouraging So, the innovations in the energy conservations, environmental protection and advanced technology these things the government is continuously encouraging in this field. So, that we have sustainable and the cost effective mining operations as I have said earlier also that in critical minerals also and energy critical minerals also who the government is giving very much importance especially in the research and development. The mineral mining of mineral is followed by the mineral processing and manifestation. So, here we must be able to utilize the low grade minerals and do not throw them as waste.



Fiscal aspects

- Efforts shall be made to benchmark and harmonize royalty and all other levies and taxes with mining jurisdictions across the world to make India an attractive destination for exploration and mining.

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And the finer size material wherever it is creating the metal I mean difficulties in metallurgical process, then we should have technologies to how to utilize the fine size material for the purpose of further utilization. So, the the Indian Bureau of Mines, the private sector, public sector they should the policy said that they should cooperate and they should develop the state of the art beneficent technology and process and establish the process in our country. So, that we can utilize the low grade ore and the finer size material. Effectively we do not we do not want to waste anything. So, this is also ah ah an ah an implementation of the zero waste strategy that the government has adopted.

So, the efforts also will aim towards the maximizing the economic recovery of the associated minerals that is along with the principle value mineral, we also have associated

Research and Development

Research in mining methods

- Research efforts will be directed towards enhancing mining methods for improved safety, efficiency, and ore recovery, with emphasis on areas like rock mechanics, ground control, and mine design engineering.
- Innovations will focus on energy conservation, environmental protection, and the adoption of advanced technologies to ensure sustainable and cost-effective mining operations.



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minerals that is for for different uses also. So, how to promote that, how to promote the advanced processing technology of this associated mineral. So, again we are coming back to the zero waste and we are not only targeting the value mineral also how to utilize the associate minerals. Even I have seen that how the waste rocks that was taken out from a copper mine and that was lying for decades that was fully utilized for road constructions. I mean now we have to think about the total utilization of the so called waste and we must adopt the zero waste so that everything has an economic value.

Research and Development

Mineral Processing and Beneficiation

- Research will focus on beneficiation and agglomeration techniques to utilize lower-grade and finer-sized materials effectively.
- Cooperation among research organizations, including the Indian Bureau of Mines, public and private sectors, will be strengthened to develop state-of-the-art beneficiation technologies.
- Efforts will aim at maximizing economic recovery of associated minerals and valuable metals while promoting advanced processing technologies.



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It contributes to the economy of the business and the country as a whole. Automation robotics—the government wants to give more attention and investment in the development of robotics and automated equipment for mining operations, particularly in deep mining. So, to avoid the chances of accidents and working in adverse mining conditions, we can use robotics. And also for the transportation of the material to the surface. So, appropriate import facilities are also encouraged at this moment for the quick development and implementation of automation in equipment, machinery, and mining robots.



Research and Development

Development of Automated Equipment

- To meet the objective of safety and economic production, attention will be given to the development of robotics, automated equipment for mining, especially for deep mining and transportation to surface.
- While efforts shall be made for indigenous development, Government shall also consider an appropriate fiscal measure to facilitate import of automated equipments, machinery and mining robots etc. which are not available in the country, which can be used for exploration, mineral development and value addition in the downstream industry.



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So, we are, of course, already doing a lot of things in our country, but the policy says that, if required, apart from indigenous development— We are giving full force to indigenous development, but the government also encourages importing these technologies and utilizing state-of-the-art artificial intelligence and robotics in mining in our country. As I said earlier, deep-sea mining has great prospects beyond what we already know; we must explore the resources in the deep seabeds. So, the prospecting, exploration, extraction, mining, and processing of these special types of resources—which are deep-ocean resources.

The government is giving great importance to these things because they provide an alternative and additional resource to the known mineral resources. So, in the future,

when surface or known resources are depleting, this will give us stability in the supply of minerals. Also, importance is being given to the production of high-purity materials. These minerals are especially important for the production of semiconductors, solar cells (photovoltaics), lasers, sensors—as these are part of modern technology—thin films, superconductors, and mineral fibers. So, special importance is being given to the production of all these minerals associated with these technologies.

Research and Development

Deep Sea Mining

- Deep ocean resources represent an exceptionally large and potentially important mineral resource.
- Integrated systems for **prospecting, exploration, extraction, mining and processing of these resources shall be expedited** with the development/acquisition of necessary technologies.

Production of Materials of High Purity

- Research will focus on raw materials for high-purity advanced technologies, including semiconductors, photovoltaics, lasers, sensors, high-temperature ceramics, superconductors, thin films, and mineral fibers.

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To understand the need for natural resources, including minerals. So, we understand one thing: this is basically a matter of shared inheritance. That means we are not only enjoying these things, but we are also creating a situation or developing these things to such an extent that future generations receive the benefit of this inheritance. That is why we are so much interested in stopping environmental degradation and developing sustainable business practices. So that it continues, and future generations must not say that our previous generations spoiled the environment and they cannot do any more mining. So, everything will be disrupted.

So, here the state governments will ensure, as per the policy, that the full value of the extracted mineral is received by the state, and the assessment of this intergenerational equity in respect of each mineral is part of this approach. This approach has to be adopted in such a way that the reserves or resources are not unnecessarily wasted and the potential

is fully utilized. And so that you can continue from one generation to the other. And you must not think that the throwaway use of these things is to be discouraged. So that we improve our recycling more and more.



Inter Generational Equity

- There is a need to understand that natural resources, including minerals, are a shared inheritance where the state is the trustee on behalf of the people to ensure that future generations receive the benefit of inheritance.
- State Governments will endeavour to ensure that the full value of the extracted minerals is received by the State. However, for assessment of inter generational equity in respect of each mineral, a disaggregated approach shall be adopted considering aspects like reserves/ resources and potential for reuse through recycling, which are relevant and suitable in the Indian context.



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Our recycling efficiency is very poor at the moment. The government is giving a lot of importance to recycling. So that we conserve the minerals, which is very much relevant in our context. For unified development, we expect that all the ministries, right from the Ministry of Mines to different ministries, will interact with each other. So that this can ensure sustainable mining, and we can address the environmental and socio-economic concerns more effectively than ever before.

Inter Ministerial Mechanism for Sustainable Development

- A unified inter-ministerial body under the Ministry of Mines, including members like Ministry of Coal, Ministry of Earth Sciences, Ministry of Tribal Affairs, Ministry of Rural Development, Ministry of Panchayati Raj, Ministry of Steel, and state governments, will be established to ensure sustainable mining while addressing environmental and socio-economic concerns.
- It will advise the government on royalty rates and mining limits, conducting detailed studies on resource availability, regional carrying capacity, and environmental impact, ensuring sustainable development and intergenerational equity.



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This also, this inter-ministerial mechanism will not only look into the technology and the process being adopted, but also we will, from time to time, discuss the royalty rates, the mining limits, and they will also ensure that they conduct detailed studies on the resource availability. That means more exploration and an information database so that they will reduce environmental impact and ensure sustainable development from one generation to another. This is, overall, the perspective—that means sustainable development and the benefits being transferred from one generation to the next. Overall, what do we expect from this National Mineral Policy? As I said in the beginning, it strongly encourages making India. That means our own domestic resources must be encouraged for more and more production.

So, this will also help our manufacturing sector because minerals—the metals and other things—are very much required for the manufacturing sectors. So, if you develop this thing, this will also support the downstream industries. So, successful implementation of the policy depends on achieving a national consensus. So that everybody believes in these things and adopts them, and this will secure all stakeholders' commitment to the objectives for which this mineral policy has been framed. So now, the outcomes should be in some quantitative terms.

For example, the outcomes expected from this policy are an increase in the production of the MCDR minerals—that means the minerals listed in the MCDR—in value terms by about 200 percent in the next 7 years. On the other hand, it will reduce the trade deficit—

the difference between exports and imports—by 50 percent in 7 years. These are quantitative targets—quantitative. That means whatever we have said so far—to increase domestic production, reduce import dependency, improve exports, ensure sustainable mining, and benefit society.

Expected outcomes of NMP

- The 'Make in India' initiative aims to **expand the manufacturing sector**, requiring sustainable mineral development **to support downstream industries**. Successful implementation depends on achieving a national consensus and securing stakeholder commitment to its objectives.
- The outcomes expected from these policy proposals are, an increase in the production of MCDR (*Mineral Conservation and Development Rules, 2017*) minerals (in value terms) by 200% in 7 years; and on the other hand, reduce the trade deficit in minerals sector by 50% in 7 years.

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But in terms, we have kept a short-term target also that in 7 years, what do you see, and then keeping in keeping in this thing view, the overall policy can we achieve this thing? This we have kept as a target. In 7 years, we will see that the production is increased by 200 percent and our trade deficit is reduced by 50 percent. As I said earlier, this is not an exhaustive discussion on the National Mineral Policy. The most important parts and paragraphs I have lifted from the National Mineral Policy are for your knowledge. From there, you can have an idea of what is the philosophy behind this national policy, what are the broad objectives, and why this has been framed.

So, from here, you will have ideas about this policy. For detailed knowledge, you can go through the National Mineral Policy. There are many discussion forums or websites where this has been reviewed, and how this is changing over the years. Also, for previous references, you can use this book. So, with this, we come to the end of the discussion on



The slide features a dark blue background with a large white speech bubble containing the text. The title 'REFERENCES' is in a white rounded rectangle at the top left. Below it, a list of references is provided. To the right of the text is a rectangular image of dark, crystalline mineral samples. In the bottom right corner, there is a small inset video frame showing a man with glasses and a mustache, wearing a checkered shirt, gesturing with his hands as if speaking.

REFERENCES

- National Mineral Policy, 2019 (Ministry of Mines)
- *Mineral Economics*, RK Sinha and NL Sharma, Oxford & IBH Publishing, New Delhi

the National Mineral Policy 2019, part 1 and part 2, which I think you must have enjoyed. This is very informative and important in the context of mineral economics and business as a whole. Thank you very much.