

Center for Strategic and International Studies

TRANSCRIPT
Energy 360

“Just Transitions: Environmental remediation”

RECORDING DATE
Tuesday, February 8, 2022

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Sandeep Pai

Thank you, Mzila and Raju, for coming to the podcast. It's a very important topic, the environmental remediation, and I'm really excited to talk to you both about this in the context of South Africa and India. I will start with Mzila first. So, what have some of the key priorities of just transition in an emerging economy like South Africa, and how is environmental rehabilitation featuring as part of country's transition planning?

Mzila Mthenjane

So, the conversation in South Africa around just transition has really been around the issues of justice in terms of firstly, ensuring that we don't leave those communities and members of society that are vulnerable behind economically, socially, and certainly where we could impact on the environment such that there's no ability for those communities to rely on that environmental status for livelihoods. So, in regard, what has been quite important is to ensure that where coal mining used to take place, which to a large extent is the primary economic activity, is that there's economic succession planning. In that there's an economy that is locally based that can continue to support those communities. And so, to be able to achieve that, it's important that we then have a conversation about the kind of skills that will be required for those new economies that will be developed locally. And so, education and skills programs are quite important.

And in order for people to be able to start new businesses, you will also be aware of the fact that in embarking on these transitions, there needs to be science and nature-based solutions to be able to withstand and respond to climate change. And so, making communities aware of those capabilities in that regard is important. And then the important aspect of that is as part of the skills and education is awareness of the applications of new technologies, in being able to transition. So, the combination of all of that is quite important to the just transition. And I've made reference to nature-based solutions. So, environmental rehabilitation is at the center of this just transition. But it's not environmental rehabilitation for its sake. It is I think, firstly, to be able to support social livelihoods, I think more importantly as well, to be able to provide for the necessary biodiversity, which enables adaptation and provides for resilience to those communities that will have to stay in those communities.

Sandeep Pai

Okay. Same question to Mr. Raju. So, what are some of the priorities of just transition in India and how does environmental rehabilitation feature among that conversation?

Raju EVR

From my longstanding experience in Indian coal mining industry, I believe that the first and foremost variety of just transition in India or anywhere else in the world should be to bring in awareness of just transition into the minds of all the concerned stakeholders, and the relevant mining, and as well as the energy sectors, and also the governments and the policy making levels. Because we should understand that very few people are aware of this energy transition, how it's going and how it would impact their lives, their livelihoods, and their environment. Therefore, first let the people in these sectors know what this transition is all about. Tell them how it's going to happen, when it's going to happen, how long, how it'll impact their lives, what are the problems, what are the solutions, what are the industry sectors planning to do in this respect, what would the government do?

So, a detailed stakeholder mapping and an aggressive stakeholder program should be drafted. That is the first priority. Then the second priority should be to put forward a roadmap. So, you should have a direction say how to proceed, a roadmap for implementing just transition. If you don't have a document, then just going to get lost. Different sets of roadmaps need to be drawn. It's not a single generic roadmap. Roadmap at the national level, roadmap at the sub-national level, roadmap at the local level roadmaps for different sectors like mining, power, energy, transportation, etc, etc.

Then the follow up action. Once you've prepared the roadmap you go for, the follow action, which should be preparing an execution of and the implementary action plan. So, roadmap is a policy document. Next, you have an action plan, and it should be implementable.

And the final priority would be the post implementation benefit analysis. So, whatever we have done, has it benefited to the public or not? So, we have to, again, conduct a benefit analysis and compliance monitoring plan.

And your second part of the query is how environmental rehabilitation should feature as part of the country transition planning. At least we think thanks and the policy famous, ignore to include the most important stakeholder of the energy transition process. That's not the people that the environment itself, the environment itself should be considered stakeholder. It's high time we realize that just transition of environment and its remediation equally important, like just transition of the people.

So, let's also talk about environmental transition, ecological transition, mine closure transition. So, they should be justice to the environment, justice to the ecology as Mr. Mzila told, justice to the people of course. The policy makers, think tanks, and the government should focus more on environmental remediation. Repurposing of the land, reclamation of waste, and up scaling the opportunities in postman period of the region affected. This re remediation process itself would compensate for the livelihoods lost during the energy transition. See we are not aware unless you do the mapping, see what amount of livelihood it would generate. And during this remediation process, this huge scope in my longstanding experience, I've seen that ecological restoration, nature-based solutions, they themselves will generate lot of livelihood opportunities.

Mzila Mthenjane

Yeah, so maybe I could echo some of what Raju has said. Quite often when mine plan is approved, it is approved with an environmental management program report, an EMPR as we call it in South Africa. But that tends to be quite localized in terms of really looking at the limited extent that the mine has had an impact on the environment and rehabilitating that and hoping that the rest will then catch up.

But I think what we are talking about here is considering this environmental rehabilitation in the context of the whole environment, because there's been a huge disturbance into the environment as a result of introducing mine activity, whether it be coal or anything else. And so when we talk of environmental rehabilitation in the context of the just transition, we're already talking about how, not assuming that life will continue as per normal or as it was before, but rather being deliberate and considerate in ensuring that what you're doing is ensuring that life will continue socially, environmentally and economically to be able to support the livelihoods of people who now have come to live in that, in that location.

Sandeep Pai

That's great. That actually is a very good segue to my next question, which is, we recently conducted a study where we looked at environmental remediation as a subtopic for both Mpumalanga and Jharkhand. And basically, we see that there is a lot of scope for environmental rehabilitation and that could create lots of jobs, but it also could become an engine for economic diversification we can start with Mzila again first.

First of all, can you explain to our audience, what are some of the key challenges associated with environmental rehabilitation of coal mines in South Africa? And then we'll come to Dr. Raju with the same question.

Mzila Mthenjane

Now I think it's a great question. And the couple of challenges, I think the first one is that there's almost an opportunity missed in that. And so, the nearly missed opportunities that we didn't design for this transition earlier on, when we were designing the mines and building the mines such that when the mines get to their end, either planned or unplanned, we at least had a plan of how we would close down those mines and provide for an alternative economy. And as a result, the financial provisioning of this rehabilitation is inadequate and should a mine close now, it would demand a huge amount of capital, which the mine owner would have to bear on its own.

And I think the other challenge is that if you look at an area like Mpumalanga, there's been a huge concentration of mining. And so, the scale at which this rehabilitation has to take place is quite huge. And so individual mines will be challenged to be able to embark on this by themselves. Government on its own would be challenged to embark on this on themselves. So, I think there's an opportunity here now to turn this challenge around into an opportunity and to get into the second part of your question, as far as possible economic development. And this is a subject of strategy, as far as what we call mineral succession planning or what I called earlier, economic succession planning in terms of coming up with creative ideas of how we can rehabilitate the land, such that not only we are rehabilitating it environmentally, but it also provides for new economy opportunities.

And this talks to the issue of land, once you've exploited the resource of coal to in the absence of any other commodity or asset, land becomes the biggest asset that you can make use of and land use from an environmental perspective, it could potentially provide

for a carbon sink if you conduct agricultural activities in a way that is economically benefit, but it can also be environmentally benefit. And you could also generate carbon credits, which you could then use to raise funding to be able to reinvest in the continual rehabilitation on that land. And that can be a much more sustainable economic activity alternative to coal for those communities. So, where we see challenges at this point, I think when you look forward and you approach it in a collaborative way, we actually seen some great opportunities to do some really creative things as part of the rehabilitation of the mine.

Sandeep Pai

Excellent. Dr. Raju, your thoughts on the same.

Raju EVR

Recently in the COP26 summit, our honorable Prime Minister of India, Mr. Modi has announced a very ambitious, Transition plan. He just declared that India will bring its non-fossil energy capacity to 500 gigawatts by 2030, and will fulfill 50% of its energy requirement to renewable energy, and will carbonates net project or carbonates by one billion tons, will bring down the carbon intensity of the economy by more than 45% by 2030. See 2030 is just eight years only. And he's telling that 45% is going to be slash on, roughly 50%. So, by within eight years, we are going for an energy transition. So, 50% is a big, big figure. Therefore, India's governing bodies and policy framework, and think tanks have to act fast to accelerate it energy. This is a very big challenge.

What happens beyond 2030 to the societies and what happens beyond 2030 with environments. and how would the financial flows be affected. . What does the governments actually think about the people and the environment? What can the governments do during these eight years and beyond 2030? See, eight years, what's its roadmap. Then what can people and other stakeholders do during these eight years? What are the real and hidden threats impacts of energy transition? Then what will be the stand taken by the coal one state government? See, in India, you have the central government, and you have the state governments, which gain a lot of funds, then they have a lot of finances through royalties and all. So, are they ready? So, then what legal litigations for data is due to energy. See, you have a very strong judiciary in India, and they enter when your rights are infringed. So, the judiciary may take a different stance, so it's very necessary to educate the judiciary also about this. So, that's another important point.

Then what are the opportunities and strengths available and the impacted regions, will the governments really provide financial support to the impacted? It's a big question... And there's a lot of hype that the private entrepreneurs will come into the picture, and they'll help, and they'll do... And these are the real challenges. Therefore, a lot of research into the energy transition and just transition subjects need to be conducted to implement the transition purpose without much hitches.

The environmental and social baseline situation is not good in any coal mining area. So, you have to do the remediation measures very quickly. the problem with the coal mining in India is not due to absence of regulations, but due to the poor enforcement of the regulations. So, you need to strengthen regulations and especially the compliance part. So, you have the regulation, you have, but however, the compliance that compliance is not up to the mark. The regulatory bodies are ineffective in regulating.

The government of India's Ministry of Coals, mine closure guidelines does not match the global benchmarks and the climate change targets. There is no mind declamation act, no mention of just transition, mine closure costs are insufficient. So, this is one another big challenge.

Mzila Mthenjane

I just wanted to add a perspective to what Raju just shared with us, that I think we are approaching the topic of environmental rehabilitation from a challenge and almost saying a problem, especially in the context of just transition, but we've also made reference to the fact that it has possible opportunities in terms of a base for economic development. And what I'd like to put forward is that I think what I'm seeing is a lot of innovation developing and coming up in terms of what is currently a problem and a liability in terms of the required environmental rehabilitation, it's actually becoming a huge opportunity. And the reason that is so is because what we are seeing is how capital markets are now coming forward as a result of this emergence and increasing understanding of ESG and these very issues of environmental rehabilitation through the lens of ESG, such that it's not just environmental issues, but it's an understanding of the integrated nature of environmental, social issues and the need for leadership through governance to understand and act on these things.

So, I think what Raju has presented is a very valid point in terms of the need for increased awareness of the leadership of the industry, of government, of all sectors, all social partners of common knowledge and the need to actually be able to embark on this transition and how we need to do that. I think the conversations going forward are going to be more about the opportunities through environmental rehabilitation than actually the challenge.

Sandeep Pai

Great. Excellent. I think that's perfect because in the first two questions, we sort of covered about all the challenges, but now I really want to get into the opportunities part, which you just highlighted. So, let's start with Dr. Raju this time. Are there some good case studies of places where proper rehabilitation of coal mines has happened? And most importantly, in those case studies where local stakeholders consulted?

Raju EVR

Yeah. Before answering your question right away, what I believe is, and during the long associates with the coal mines and also my own PhD work. See the solutions should be need based, need based to resource and a need-based post mining land, use planning policy or regulation, unless the people of the society accept your, what we call solutions, there's no way. For example, I'll just give an example that we have been going for after the mining system we're going for the large-scale plantation deforestation, which is not very much accepted by the people. They want some other livelihood money, something different. And I don't think now this is not all the time to discuss my own PhD work, where I've done a very extensive survey, what the people needs and how it is to be embedded with the government policies and also the land capability also.

So, you have to look after the land capability also, and if the land is not capable and you can't just trust any remediation measure or opportunity on them regarding your good case studies, I feel very proud to quote my own work in this aspect. And of course, as of in India, also almost all the coal companies they're going for good remediation measures. So even the Coal India Limited which is the giant coal mining company, and you have the smaller companies like the Neyveli **Lignite** Corporation (NLC), which mines lignite in the

southern part of the country, so, it's a textbook type of Oracle success story. So, it's a complete package. What we did is we have a lot of degraded land due to mining. We have a lot of spoil dumps spread over here and there. Then we are doing earlier, we are doing the afforestation, block plantation, monoculture plantation. Then fortunately the judiciary involved in one of the cases, and they told that you have to approach the pioneer institutions who are masters in the subject. Then we approach the forest research Institute, it is what do you call, under the body of council forest, forestry research and education. It is a pioneer in India, as well as abroad also. We approach them.

The first thing is they prepared a roadmap. And before preparing the roadmap, they did a rapid ecological survey. Then we requested that, why don't you show us a model, just showcase, showcase one example. And we gave them, spoil them... And further, another study was done already the assessment of biodiversity. So how much biodiversity has come. . See the ecological distort method. What I talk here is creating something like a mini forest. In the plantation and the commercial afforestation process, you have single tree plants and monoculture, whereas in this method you have a three-tier plantation and the ground, you have the grasses and herbs and the middle, you have the shrubs and at the third tier up, it's for the trees.

And further so going ahead, we ourselves, we have restored about 600 acres. So, we started with eight acres, and we gone for 600 acres right now on the same model and spread over some various at, I think about 300 spots. And simultaneously we started this integrated farming system, eco-mining tourism, and then you have the ecological parts, some waste lands. We have converted into transforming into the ecological parts. And one very good thing, what I observe is now actually in the coal mining areas, people are aggressive.

They're not very much happy with the mining operations, but when they showcase them, they accept it as if it is their own property... So people's acceptance is a key to success of any environmental remediation or restoration.

Sandeep Pai

That's great. Let's ask the same question to Mzila. Are there some good case studies that either or other mining companies have done South Africa? And those were some of the good case studies of environment rehabilitation. What have they done in consultation with local stakeholders?

Mzila Mthenjane

So, I think broadly in the coal mining industry, I'm not aware of any in South Africa. From an example perspective, we recently completed a mine in one of the provinces in South Africa through actually exhausting the whole body, so there was nothing else to mine. And about three years ago, we then started a rehabilitation process, as we had indicated we would in our environmental management program report and that involved the rehabilitation of the mine dump, the removal of mine infrastructure that would not be required. But it happened to be a mine which was in terms of its location self-sufficient and therefore it provided housing for mine employees, some of the office infrastructure we decided to keep.

And so, we didn't destroy that what I can call the domestic infrastructure in terms of houses, because we started a conversation around what could that domestic infrastructure, if that's the right word, would be useful. And just to describe the setting for you of this mine, it's located close to the Kruger National Park, which is Africa's national park. And so, it provided then for an opportunity to set up those former houses and office infrastructure for an alternative economic setting that would be related to local tourism. And it's a mine infrastructure that was also located on community land and continued to be held by community. So, we were leasing from the community. And so that then require and provided the setting to engage community members in terms of what they could expect beyond this coal mine, as it had come to closure.

Now, I think as Raju has indicated, it is not without its challenges, because I think I mentioned earlier the challenge of potentially missed opportunity is to begin engagement early, so that there's alignment on what the community wants, because at the end of the day, as a mining operator, you're no longer going to be operating. So, you cannot develop this future economic state based on what you think should be there. It has to be on the basis of the community that's going to live there and what their expectations are. And so, we've been experiencing tensions in that regard. And so, the process has become a little elongated in terms of arriving at a final solution in terms of what can be developed, how it can be developed for the benefit of those communities. And so those are some of the challenges that we're having to deal with, but from the work that we've done so far, we feel that we've developed, I think a good test case of what rehabilitation can look like, especially in the context of the just transition. But I think what is also important is that it needs to take into account the local setting rather than trying to adopt from elsewhere and adapt it to the local setting. So, I think that really requires that you engage with all the social partners to come up with something that would be viable.

Sandeep Pai

Excellent. That is actually a very good context for our next and sort of our final question, which is, So how can global bodies, finances, international community support environmental rehabilitation of coal infrastructure. And how do you ensure that if the international bodies are supporting, you are actually consulting the local stakeholders, how do you actually do that process? So, the question has two parts. The first part is how can the international body support and how can we ensure that if that support comes through local stakeholders are still consulted?

Mzila Mthenjane

Yeah, no, thanks for that question. And I think we've got to take a step back and acknowledge that what we are dealing with here is a huge social issue and challenge, we're dealing with people. And so, we cannot expect that given the size of this challenge, we can try and address the risk to people's livelihoods without engaging those people on the ground at a local level. The second point is that I think as business we've been called upon to really play a leading role in how we embark on this, just transition in terms of enabling it and enabling it also in terms of empowering those communities that are going to be most affected. And we spoke earlier about how we will do that through skills and education and such that they're able to access these opportunities that will come up from the rehabilitation of projects.

Now we are talking rehabilitation of coal mines, but in essence it's about finding an alternative and a replacement economic activity to coal mining, which can be viable given

the activities of mining that have taken place there. And I think this is where I made mention of land use. And obviously that land has been the mine, or it has been rehabilitated where the mine pit has been closed. So, it also provides constraints in terms of what you can do on that land. And hence, the possible introduction of agriculture. And I also mentioned the scale at which this needs to happen, and this is where international institutions are actually coming forward. And this was the key outcome of COP26 last year, in terms of the various alliances that have come together in terms of the global financial alliance to make capital available, 130 trillion were spoken about, we saw the coming together of the global north in America, UK, Germany, France, in terms of making 8.5 billion available for South Africa, given the level of dependence on coal by, of economy.

And I think we're going to begin to see a lot of that from the international community in terms of providing the financial capital required. Because I think from a people skills and development perspective, countries can do that themselves, that needs to be matched by the capital that is required. And one of the key things that was spoken about in COP as well was that this has to happen from the ground up and so engagement with a local community or a vast array or collective of communities is at this center of that. We cannot even begin to imagine this taking place to any degree of success without the involvement of those communities. So, you're going to see the coming together of local communities and international communities who will bring the capital and the expertise in terms of how to empower local communities, such as they embark on, on the transition themselves.

Sandeep Pai

Great. Thank you to both of you for this really excellent conversation.