

# The Future We Need

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In keeping with Constitutional provisions, and mindful of several recent judgments of the Supreme Court of India relating to alienation of natural resources for profit and related to Intergenerational Equity, we advocate that Intergenerational Equity (IE) be the core of the new National Mineral Policy, and that the following principles be adopted as its basis:

1. We, the people of India, own the minerals in common. The state is merely a trustee of natural resources for the people and especially future generations (Public Trust Doctrine).
2. As we have inherited the minerals, we are simply custodians and must pass them on to future generations (Intergenerational Equity Principle).
3. Therefore, if we mine and we sell our mineral resources, we must ensure zero loss, i.e., we must capture the full economic rent (sale price minus cost of extraction, cost including reasonable profit for miner). Any loss is a loss to all of us and our future generations.
4. All the money received from our minerals must be saved in a Permanent Fund, as already implemented all over the globe. Like the minerals, the Permanent Fund will also be part of the commons. The Supreme Court has ordered the creation of a Permanent Fund for Goan iron ore and already Rs. 250 crores is deposited. The National Pension Scheme should manage the funds.
5. Any real income (after inflation) from the Permanent Fund must only be distributed to all as a right of ownership, as a Citizen's Dividend.

## Safeguards

6. Minerals represent opportunities. Mining must be limited to ensure availability of the mineral & the income from extraction over multiple generations. For the environment, we must impose area-wide limits on extraction under the Precautionary Principle. We must first try to avoid any damage. If damage is inevitable, it must be fully compensated for under the Polluter Pays Principle.
7. FPIC ("Free prior informed consent") of the mining affected is necessary before mining. During mining, the District Mineral Foundation must be controlled by the mining affected, and the plans must be developed through participatory planning and budgeting.
8. As minerals are some of our most valuable assets, the state must implement a cutting edge control system. This includes satellite, drone and lidar imaging, system auditors, aadhaar tracking, fit & proper person tests, a whistleblower rewards and protection scheme, etc. Mining entities should also be audited frequently.

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9. The people, as the real owners, should be permitted to satisfy themselves at any time that their children’s inheritance is protected. This requires radical transparency including the ability to conduct social audits, and open access to the public to all data (including the data feeds) in real time at no cost.

These principles, implemented faithfully, will be a giant step towards achieving Justice, Liberty, Equality and Fraternity within our nation.

## **A. Supreme Court, Government of India perspective**

The Supreme Court ordered the review of the National Mineral Policy after a discussion on Intergenerational Equity. Earlier this year, the Government of India, in its Economic Survey 2016-17, Volume 1, Chapter 13 Box 1 (on page 297) had explained the new perspective forming for minerals:

### **Box 1: Supreme Court of India Judgement on Goa Mining**

The judgment of the Supreme Court of India in WP 435/2012 (*Goa Foundation vs UoI & Ors*, the Goa mining case), was the culmination of a series of landmark judgements on the subject of managing natural resources in public domain. In this case, the apex court ordered a cap on mining as well as the creation of a Goan Iron Ore Permanent Fund to meet the ends of inter-generational equity and sustainable development. When considered along with earlier SC judgments on the public trust doctrine, notably CA 4154/2000 (*Fomento Resorts & Anr vs Minguel Martins & Ors*), and on the disposal of natural resources, notably WP 423/2010 (*CPIL & Ors vs UoI & Ors, the 2G spectrum case*), a new picture emerges for minerals.

What implications does the SC judgment carry for natural resource management?

Natural resources, including minerals, are a shared inheritance that needs to be preserved for future generations. As sub-soil minerals are largely owned by the States, and offshore minerals by the Centre, the states are the trustees on behalf of the people. The cap on mining in Goa is to ensure the availability of minerals over several generations as well as to limit the environmental damage from permitted extraction.

The proposal for exploring the creation of a Goan Iron Ore Permanent Fund is notable for being the first that has potential to be established by judicial action. Norway and over 50 other countries / sub-nations have created Permanent Funds based on extracting economic rent from oil or other natural resources. The oldest of these funds, in Texas, dates back to 1876.

Our discussion and recommendations below are in line with the Constitution, Supreme Court judgments, the Governments’ perspective above, and above all, common sense.

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## **B. The Constitution on natural resources**

*Natural resources are our shared inheritance. It is our duty to ensure that we protect our inheritance for future generations. Only if we do that, may we consume the fruit. A loss is a loss to our children and all future generations.*

**Mineral Ownership**<sup>1</sup>: Under Article 294 of the Indian Constitution, sub-soil minerals are owned by the individual States, not the Center, not the mining leaseholder, nor the land owner. There are some exceptions,<sup>2</sup> but usually ownership vests with a representative entity such as a District Council or a Regional Council. Offshore minerals (chiefly oil & gas) are owned by the Center under Article 295. For simplicity of analysis, we assume States own the minerals.

Discussing the **Public Trust Doctrine**<sup>3</sup>, the Supreme Court held in Fomento Resorts and Hotels Limited case [(2009) 3 SCC 571],:

*“We reiterate that natural resources including forests, water bodies, rivers, sea shores, etc. are held by the State as a trustee on behalf of the people and especially the future generations.”*

In essence, natural resources are a commons. The Government owns natural resources in trust for the public and especially future generations.

The **Intergenerational Equity (IE) principle**<sup>4</sup> requires future generations to inherit at least as much as we did. In limited cases, the form of the inheritance may change, but the total capital must not diminish. Ideally, we would leave a bequest. In simple terms, the present generation is merely a custodian over what we have inherited.

**Alienation of Natural Resources.** Recent Supreme Court judgments have dealt with the process of disposal of natural resources. In the Meerut Development Authority case [(2009) 6 SCC 171], the Supreme Court held:

*“Whenever the Government or the authorities get less than the full value of the asset, the country is being cheated; there is a simple transfer of wealth from the citizens as a whole to whoever gets the assets ‘at a discount’.”*

In the 2G case (CPIL & Ors vs UoI & Ors, (2012) 3 SCC 1), the Supreme Court has held that (emphasis ours)

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<sup>1</sup> See <http://goenchimati.org/who-owns-title-to-minerals-in-india/> & <http://goenchimati.org/minerals-who-are-the-beneficial-owners/> for a longer discussion

<sup>2</sup> See the judgment in CA 4549 of 2000 (Threesiamma Jacobs) on Jul 8, 2013

<sup>3</sup> The Public Trust Doctrine has been ruled part of Art 21, Right to Life

<sup>4</sup> The Intergenerational Equity Principle has been ruled part of Art 21, Right to Life

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*“Natural resources belong to the people but the State legally owns them on behalf of its people... The State is empowered to distribute natural resources. However, as they constitute public property/national asset, while distributing natural resources, **the State is bound to act in consonance with the principles of equality and public trust and ensure that no action is taken which may be detrimental to public interest.** Like any other State action, constitutionalism must be reflected at every stage of the distribution of natural resources.”*

Further, in the said case, the Supreme Court held (bold emphasis, para breaks ours):

*“As natural resources are public goods, the doctrine of equality, which emerges from the concepts of justice and fairness, must guide the State in determining the actual mechanism for distribution of natural resources. In this regard, **the doctrine of equality has two aspects:***

***first, it regulates the rights and obligations of the State vis-a-vis its people and demands that the people be granted equitable access to natural resources and/or its products and that they are adequately compensated for the transfer of the resource to the private domain; and***

***second, it regulates the rights and obligations of the State vis-a-vis private parties seeking to acquire/use the resource and demands that the procedure adopted for distribution is just, non-arbitrary and transparent and that it does not discriminate between similarly placed private parties.”***

Note that there are two separate requirements to be met. The first standard for disposal of natural resources is **zero loss in value**, or “Get all”. In other words, the state must receive the full value of the assets. Any loss is cheating the nation.

The second standard requires **all parties be placed on an equal footing** to obtain these resources since access to minerals is valuable. Auctions are a good means to fulfill this second obligation. The Supreme Court held, in the Presidential Reference on the issue of Alienation of Natural Resources (2012) 10 SCC 1, that when:

*“precious and scarce natural resources are alienated for commercial pursuits of profit maximizing private entrepreneurs, adoption of means other than those that are competitive and maximize revenue may be arbitrary and face the wrath of Article 14 of the Constitution.”*

SC Justice J. S. Khehar (now retired), in his concurring judgment held that:

*“I would therefore conclude by stating that no part of the natural resource can be dissipated as a matter of largess, charity, donation or endowment, for private exploitation. Each bit of natural resource expended must bring back a reciprocal consideration. The consideration may be in the nature of earning revenue or may*

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*be to "best subserve the common good". It may well be the amalgam of the two. There cannot be a dissipation of material resources free of cost or at a consideration lower than their actual worth. One set of citizens cannot prosper at the cost of another set of citizens, for that would not be fair or reasonable."*

## **C. Implementing Intergenerational Equity**

How do we apply these Constitutional principles to the handling of mineral resources? The first step is to identify all the assets that will be impacted by mining. For each asset, we need to analyze how future generations can receive their rightful inheritance. There are quite a few assets impacted by mining, including:

(a) **Family gold:** Mineral, even when in the ground is valuable – the in-situ value of the mineral, also called economic rent, is the sale value minus all costs of extraction, including a reasonable profit for the miner;

(b) **Externalities:** a range of environmental and social assets that are damaged – flora, fauna, health, etc;

(c) **Mineral associated income:** the opportunity to have mining jobs and earn income (salary, wages, reasonable return on capital), which opportunity we have inherited with the mineral, and which opportunity depletes with the mineral<sup>5</sup>;

(d) **When to sell the family gold:** the usual advice is buy low, sell high – technically, the decision of when to sell the mineral & how much is a real option, valuable due to the long time to expiration and commodity price volatility; and

(e) **How to use:** many countries industrialized based on their access to natural resources. World wars have been fought over access to natural resources. The real option of using the mineral for value addition, creation of competencies and multi-use infrastructure is very valuable as well. Hence many nations have a preference for imports of natural resources, while treating their own as strategic reserves.

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<sup>5</sup> Imagine a person running a marathon. He has a bar of chocolate that can provide an energy boost (just as the extraction work boosts jobs and incomes). When in the marathon race does this person consume the bar of chocolate? Now consider a relay race of marathons, and the previous generation has handed the present generation the bar of chocolate. Does the present generation extract the mineral, consuming the inherited chocolate and receiving a temporary boost in jobs and income? Or should we pass it on to our children?

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### a. Dealing with the Family Gold

We deal first with the economic rent (in-situ value of the mineral).

*Consider the case of inherited family gold. Intergenerational equity can be met by keeping the gold as it is, but gold earns no income. An alternative is to sell the gold and invest the proceeds in land. Provided owners maintain the productivity of the land, by crop rotation or keeping it fallow, they can consume the harvests. And so could all future owners. Any loss of the initial capital is a permanent loss to all future generations.*

In a similar vein, mining is effectively the sale of the family gold. If we mine, three steps are required to implement IE.

- a) **Get all:** Each mineral owner must strive to sell the mineral for zero loss, i.e., its economic rent.<sup>6</sup>
- b) **Save all:** Whatever the owner receives must be saved in a new “non-wasting”<sup>7</sup> asset. Since this asset has been financed from the mineral commons, it should remain part of the commons. The owners must prevent theft or erosion of value of the new asset.
- c) **Share all:** Provided the capital is intact, the owners may consume the income. Since the minerals and the new asset constitute the commons, the income should be distributed equitably as a commons dividend.

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<sup>6</sup> Economic rent is the sale value minus cost of extraction minus reasonable profit for the extractor.

<sup>7</sup> A “non-wasting” asset is one that doesn’t depreciate. These are usually precious metals, precious stones and land, and inheritances are usually held in these assets. In modern times, Permanent Funds with inflation proofing are also considered “non-wasting” assets.

### Introducing the Goa Foundation Benchmark for minerals

1. We, the people, own the minerals in common. The state is merely a trustee of natural resources for the people and especially future generations (Public Trust Doctrine).
2. As we have inherited the minerals, we are simply custodians and must pass them on to future generations (Intergenerational Equity Principle).
3. Therefore, if we mine and we sell our mineral resources, we must ensure zero loss, ie. we must ensure capture of the full economic rent (sale price minus cost of extraction, cost including reasonable profit for miner). Any loss is a loss to all of us and our future generations.
4. All the money received from our minerals must be saved in a Permanent Fund, as already implemented all over the globe. Like the minerals, the Permanent Fund will also be part of the commons. The Supreme Court has ordered the creation of a Permanent Fund for Goan iron ore and already over Rs. 250 crores is deposited. The National Pension Scheme should manage the Permanent Funds.
5. Any real income (after inflation) from the Permanent Funds must only be distributed equally to all as a right of ownership, a Citizen's Dividend.

#### i) Get all: Zero Loss Mining

In this section, we will show how we are systematically cheating our children:

- *Goa case study*<sup>8</sup>

As we are familiar with Goa, we shall use it to demonstrate how mining violates the Constitution. This section draws on the paper “[Catastrophic Failure of Public Trust in Mining: Case Study of Goa](#)”.<sup>9</sup> The paper uses the annual reports of Sesa Goa over the 8-year period 2004-05 – 2011-12, along with the statistical reports of the industry body, Goa Mineral Ore Exporters Association (GMOEA) to estimate the in-situ value (economic rent) of the iron ore exported from Goa over those eight years. This is compared with the Mines Department revenue receipts.

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<sup>8</sup> This series of articles provided an overview: <http://goenchimati.org/full-series-of-articles/>

<sup>9</sup> [https://www.academia.edu/16342835/Catastrophic\\_Failure\\_of\\_Public\\_Trust\\_in\\_Mining\\_Case\\_Study\\_of\\_Goa](https://www.academia.edu/16342835/Catastrophic_Failure_of_Public_Trust_in_Mining_Case_Study_of_Goa)

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**State of Goa (eight years 2004-05 – 2011-12)**

<b>Value of the ore extracted</b>	<b>Units</b>	<b>Total</b>
Mineral value	Rs Cr	51,655
Royalty (Mines dept. revenue receipts)	Rs Cr	2,387
<b>Public Property Lost</b>	Rs Cr	<b>49,268</b>
<b>Loss Rate</b>	%	<b>95.4%</b>
Goa GSDP at current prices	Rs Cr	187,297
<b>Mineral depleted / GSDP</b>	%	<b>28%</b>
<b>Goa State Finances &amp; Mining</b>		
Goa GSDP at current prices	Rs Cr	187,297
GSDP from mining	Rs Cr	27,448
<b>Mining as a % of GSDP</b>	%	<b>15%</b>
Govt. revenue receipts	Rs Cr	27,402
Royalty (Mines dept revenue receipts)	Rs Cr	2,387
<b>Mining as % of total revenue</b>	%	<b>9%</b>
Mineral depleted	Rs Cr	51,655
Public Property Lost	Rs Cr	49,268
Govt total expenditure	Rs Cr	32,008
Fiscal deficit	Rs Cr	5,386
Govt outstanding debt	Rs Cr	6,872
<b>Units</b>		
<b>Total</b>		
Public Property Lost	Rs Cr	49,268
Employee expense	Rs Cr	2,412
Mining dependent expense	Rs Cr	11,962
Earned profit	Rs Cr	3,795
Total Private cost	Rs Cr	36,092

Source: Sesa Goa, GMOEA & Goa State data

This was a catastrophe! The in-situ value of the mineral resources exported was Rs 51,655 crores – 28% of GSDP over the period. Of this amount, the State managed to lose Rs 49,268 crores, an incredible 95.4%.



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A few comparisons are useful:

1. **Loss is many times the income:** Jobs and government revenue are the most popular reasons given for promoting mining. While the loss was Rs. 49,268 crores, the earned income is at best Rs. 15,757 crores (mining dependent expense + earned profit). Further, even the income is an inherited asset (Mineral associated income) that depletes with the mineral.
2. **Government finances:** The loss (Rs 49,268 crores) was far in excess of the outstanding Government debt (Rs 6,872 crores) and the cumulative fiscal deficit (Rs 5,386 crores). In fact, it is much greater than the total government expenditure over this period (Rs 32,008 crores).
3. **Loss per head & per household:** Goa has a small population – 14,58,686 as per the 2011 census. The loss per person works out to a whopping Rs 3.38 lakhs over eight years. For a household of four, this is a loss of inherited assets of Rs 13.51 lakhs. NSSO (70th Round) estimates household Average Value of (private) Assets in Goa at Rs 10.44 lakhs. We lost in 8 years more than the average family owns.
4. **Counterfactual:** Had the GF benchmark been followed, and the Permanent Fund earned only 3% real income, it would have yielded a Citizen’s Dividend of Rs. 885 per month. This is enough to wipe out poverty in Goa.

The reduction in value of the commons is in effect a tax on the people applied equally – a per head tax or a poll tax. Further, to the extent that the mineral value is captured by private mining entities, it constitutes a transfer of wealth from the public that makes a few rich. This violates socialism (preamble), equality (preamble, Art 14), intergenerational equity (Art 21) and the common good (Art 39(b)&(c)).

Looking forward, the amounts at stake are enormous. The value of the iron ore still remaining in the ground in Goa is conservatively worth Rs 17 lakhs per man, woman and child, or Rs 68 lakhs for a household of four. Clearly, the value of the mineral commons dominates all else.

- *Zero Waste Mining*

It turns out that for every ton of iron ore, approximated 4 tons of overburden is extracted and dumped. Miners assert that the overburden can be separated into useful ores such as manganiferous clays & dolomite. Like our household waste, segregation at source is required. Unfortunately, while zero waste mining is part of the sustainable development framework and environmental clearances, the government has until recently consistently refused requests to add these as associated minerals in the mining lease. We are making garbage from wealth. We must extract every bit of value from our mineral wealth.

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- *Goa Part 2: After the Supreme Court judgment*

In the Goa mining case<sup>10</sup> the Supreme Court ruled that all mining leases had expired on 22-Nov-2007, and therefore all mining until the ban on 10-Sep-2012 was illegal. We estimated the amount recoverable under Section 21(5) conservatively at Rs. 65,058 crores.<sup>11</sup> Despite representations<sup>12</sup>, the government of Goa renewed all leases on the old system (no auctions). The alternative of auctioning them off was abandoned due to the possibility of the mining mafia entering Goa. Mining under a PSU was similarly beset with vague difficulties. Many renewals were on the date of the promulgation of the MMDR Amendment Ordinance.<sup>13,14</sup> After over 3 years from the judgment, no notices have been issued for recovery of compensation under Section 21(5) of the MMDR Act 2015.

In August this year, the CAG pulled up the Goa Government for not taking action for mining without environmental clearances or in violation of the mining plan (both illegal mining) and recovering compensation under Section 21(5) of the MMDR Act. The response was that these violations are not the responsibility of the Department of Mines & Geology. This cannot be right!

- *Across minerals and India<sup>15</sup>*

This problem is present in iron ore outside Goa (92% is the estimated loss, over a decade). Similar trends are apparent in coal, oil & natural gas. These account for nearly 80% of the value of major minerals extracted. The recent success with mineral auctions corroborates the picture. Back of the envelope calculations show that the auction premia is on average around 3 times the royalty (implying a 75% Loss Rate for leases granted without auctions).

- *MMDR Amendment Act*

There have been some recent amendments to the MMDR and Coal Acts and their rules and regulations. They seem to meet the transparency & competition requirements of the 2G Presidential Reference judgment. However, they utterly fail to avoid losses – this is not an objective under the amendments either. Here are some of the issues created:

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<sup>10</sup> Writ Petition (civil) 435 of 2012, judgment delivered on April 21, 2014

<sup>11</sup> <http://goenchimati.org/wp-content/uploads/2016/06/2014-12-11-GF-letter-to-CS-Goa-on-the-need-to-start-recovery-proceedings-with-Calculations.pdf>

<sup>12</sup> <http://goenchimati.org/wp-content/uploads/2016/01/2014-05-15-The-Goenchi-Mati-Permanent-Fund-A-proposal-after-the-SC-verdict.pdf>

<sup>13</sup> <http://goenchimati.org/wp-content/uploads/2016/04/2015-06-17-Directorate-of-Vigilance-Goa-complaint-on-lease-renewals-with-Annexures.pdf>

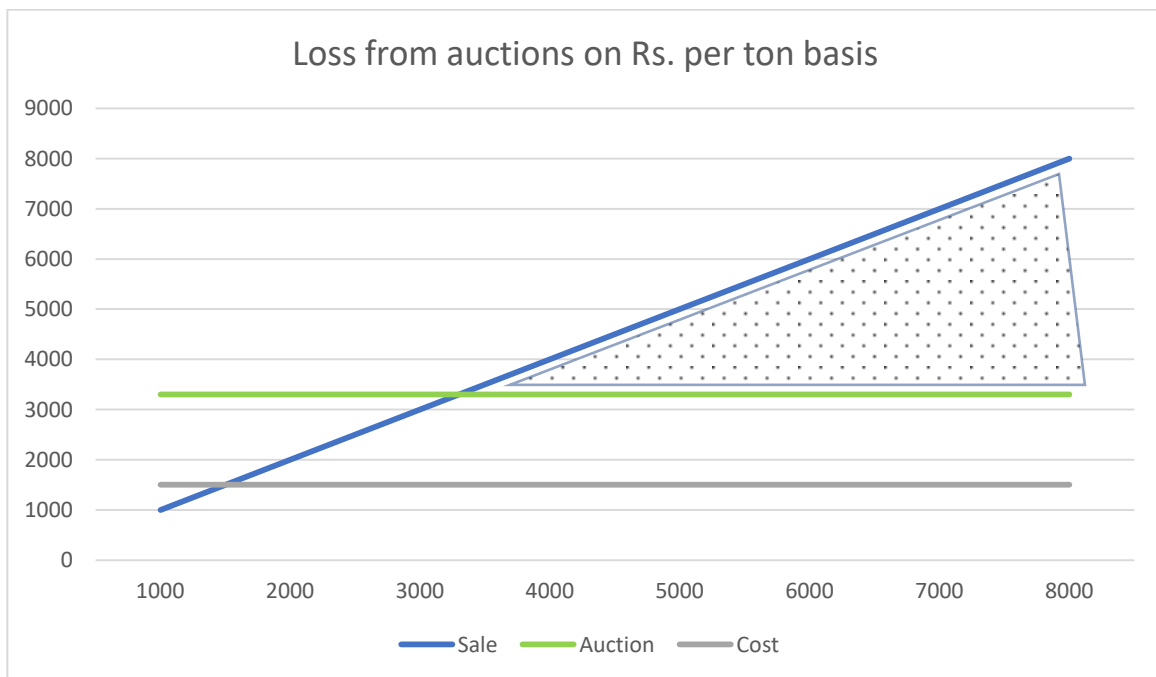
<sup>14</sup> <http://goenchimati.org/mining-renewal-backstab/>

<sup>15</sup> [https://www.academia.edu/16342835/Catastrophic\\_Failure\\_of\\_Public\\_Trust\\_in\\_Mining\\_Case\\_Study\\_of\\_Goa](https://www.academia.edu/16342835/Catastrophic_Failure_of_Public_Trust_in_Mining_Case_Study_of_Goa)

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### Auctions

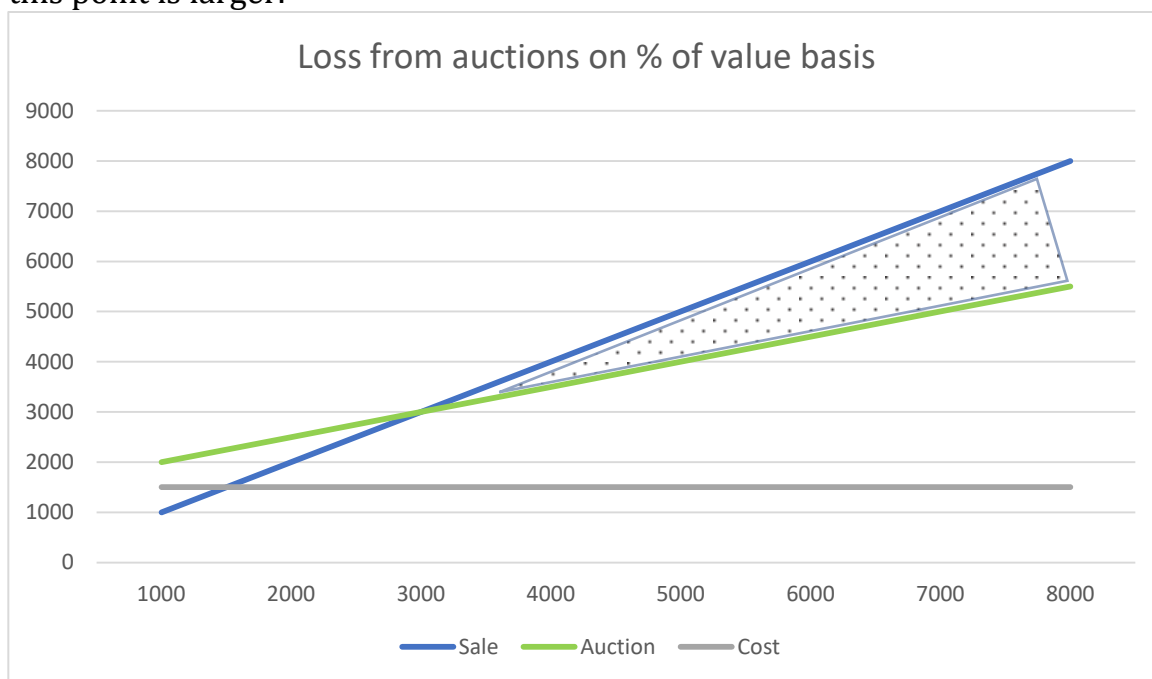
1. Auctions can be designed well, and badly. Auctions maximize the total receipts for that particular auction design. This is not the same as zero loss. For example, constraining the end use of minerals (eg, coal for power) reduces its realized value and therefore it creates a loss.<sup>16</sup>
2. Coal was auctioned for use by the non-regulated sector (captive power, iron & steel, cement) with bidding on a Rs/ton basis. This has no linkage to market prices. The current auctions are taking place at a low period in the price cycle. Most of economic rent arises during commodity booms. This will lead to high Loss Rates when it matters. A link to the market price is essential.



<sup>16</sup> Symmetric Tragedies: Commons and AntiCommons. Buchanan, Yoon. 2000. Journal of Law and Economics

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3. Even auctions on an ad valorem basis (as in major minerals) will result in losses when prices are high. This is when the economic rent is maximum, so a loss at this point is larger.



4. In the coal for power auctions, a reverse auction methodology was utilised resulting in lower realized prices for coal. The reason given is that the eventual price of power is lower. One estimate of the tariff benefit was Rs 69,311 crores.<sup>17</sup> This tariff benefit is nothing but a subsidy. Who provides the subsidy? The people of the state, equally, many of whom may not even have a power connection. Who benefits from cheaper power? Large power consumers – industries, the rich, & the powerful. This is an unfair redistribution.
5. Further, the power consumers may not even be in the same State that owns the coal (eg, NTPC plants). This is then a hidden inter-state fiscal transfer. Like the LPG subsidy, power subsidies could be given directly and transparently by the Center using the JAM methodology.
6. A related aspect of the subsidy on coal used for power is that it is in effect a subsidy on carbon. This is unconscionable in the age of climate change. The same subsidy of Rs. 69,311 crores could have been provided by the Center to the renewables industry. Incredibly, over the last 2 years, the Center has increased its carbon cess, effectively taxing the same coal that it forced states to subsidise. In effect, the Center took credit for lowering the price of power, and then again for acting against climate change.

<sup>17</sup> To our knowledge, the Ministry of Coal has not disclosed its calculations

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7. The current auctions are for mineral leases of 50 years. Geological studies are typically carried out for up to 20 years of reserves. The result is that the later years will be valued essentially at zero. Also, private discount rates will be much higher than social discount rates as private party face the risk of the Government changing royalty rates, export duty or numerous other factors that impact their business. As risk increases with time, having a long lease term will lead to a very high discount rate, and hence lower realized value for our family gold.
8. The IBM price is the benchmark for ad valorem auctions. Are IBM prices really based on the market? Can we avoid price manipulation, when even the LIBOR was rigged for over a decade? Can we guarantee the IBM price will represent the market for the next 50 years? What do we make of leases that are auctioned for a total auction premia + royalty of over 100% of the IBM price?
9. Global experience shows that in practice, even with a good auction structure, public losses are difficult to avoid where private interests are involved. The RIL KG-D6 controversy is an example.

#### Deeper issues

The new sub-sections 8A(3), (5), (6) from the MMDR Ordinance and Amendment Act, which cover major non-fuel and non-atomic minerals, result in the grant of leases, renewals or extensions of mining leases without an auction. Similarly, there are various other leases “saved” under the new sub-section 10(A)2. Large swathes of mining are covered by these sub-sections. In Goa, while 89 leases were renewed, 188 leases have been deemed extended!<sup>18</sup> One estimate of the loss for iron ore in Chhattisgarh alone is estimated at Rs 1,22,000 crores.<sup>19</sup>

Given that royalty-only leases result in an abysmal Loss Rate (auctions indicate 75% under the current poor auction structures), the granting, extension or renewal of leases is simply a transfer of wealth from the people to the lease holders. This clearly violates the first part of the 2G judgment. Further, by extending leases without auctions only for incumbents, this violates the second part of the 2G Spectrum judgment as well - equal access for all.

Worse still, with many leases grandfathered on a low royalty basis for upto 50 years, any new entrant will face a significant price disadvantage as they will have to pay the auction premia in addition to the royalty. This will restrict new supply, and incentivize cartels and monopolies. Another transfer from the people to the miners. The rich become richer.

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<sup>18</sup> Starred LAQ 16B answered on 20-Jul-2017

<sup>19</sup> Sharma, Supriya (2015): *Coalgate seemed huge but it might pale in comparison to the impending Minegate*, Scroll.in, 19-Mar-2015. <http://scroll.in/article/714614/coalgate-seemed-huge-but-it-might-pale-in-comparison-to-the-impending-minegate-scandal>

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In totality, the MMDR Amendment Act and related actions is probably the single largest transfer of common wealth to a few in the history of independent India.

ii) **Save all, share all: A total loss**

We now turn to the second principle of saving everything. State governments treat mineral receipts as “revenue”, and spend the little they do receive (no state runs a significant revenue surplus, royalties are being spent.) A total loss.

After the MMDR Amendment, we find states are rejoicing at the auction premia bonanza. A boost to government revenues! A windfall bonanza! In reality, we are simply spending our family gold. We are stealing from our children. We can do better.

iii) **Implications**

It is apparent that the mining laws violate the Constitution in many aspects. It would seem that the state has been captured by private interests. While the MMDR Amendments provided a golden opportunity to rectify matters, it seems that haste made waste. Enormous transfers of wealth from the people to private interests have taken place with nary a peep. Our government seems to have forgotten its moral obligations to the people it serves, and to our future generations. How is this different from the British Raj?

We are effectively selling our family gold worth Rs 100 for Rs 5. Miners rationally realize that even if legal, this is fundamentally illegitimate. They are incentivized to rush in, rapidly extract and disappear. Trees, tigers and tribals become anti-development and anti-national, standing between miners and great wealth. They are bulldozed with the full power of the Raj. When the people on the ground resist, we get our civil war. Before 1947, this was called the freedom struggle.

iv) **How did this happen?**

There are a number of reasons for this catastrophe.

**1. Future generations have no voice:** The fundamental challenge is that minerals are a concentrated source of common wealth. Consequently, they draw rent seekers. The quantum of wealth is so large that we have a multi-party struggle for the mining “revenues” by miners, politicians, local governments, government officials, police, local strongmen, lobbies, civil society, etc., all essentially rent seekers, with everyone arguing for more.

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The losers are future generations, who do not have a voice today.<sup>20</sup> This is the central problem – how can the present owners stop theft in various disguises and reduce the temptation to consume our children’s inheritance?

We must explicitly acknowledge the rights of future generations in the Constitution.

**2. Insiders:** If we look at the problem of protecting great wealth, there are essentially 3 strategies:

- (a) Few trusted insiders protect the wealth (like our executive branch of government). This almost always fails (“Indiana Jones”). If the sums are large enough, insiders can be tempted for themselves, or by thieves. Tutankhamen was a minor pharaoh, famous only because his was the first tomb with lots of gold that previous raiders hadn’t found.
- (b) Common responsibility. Keep our common wealth where everyone can see and protect it. The commons dividend gives the populace reason to protect the commons. Radical transparency on all stages of the value chain is required to stop the thieves. Use open source techniques & crowd source guardians.
- (c) Forget about it as wealth creates too many problems in society. Throw it away (“The Gods must be crazy”). Essentially, it’s better not to extract at all, it’s safer underground.

From global experience, losses caused by insiders are the norm. Clearly the first strategy has failed. The common responsibility strategy must be tried.

As minerals are some of our most valuable assets, the state must implement a cutting edge control system. This includes an equivalent of the ICGLR<sup>21</sup> Regional Initiative against the Illegal Exploitation of Natural Resources (RINR)<sup>22</sup>, a whistleblower rewards and protection scheme, real time data feeds, satellite, drone and lidar imaging, etc. Mining entities should also be audited frequently, perhaps concurrently.

The people, as the real owners and custodians for the future, should be permitted to satisfy themselves at any time that their children’s inheritance is protected. This requires radical transparency including implementing EITI<sup>23</sup>, the ability to conduct social audits, and open access to the public to all data (including the data feeds) in real time at no cost.

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<sup>20</sup> They will get their voice when they write our history!

<sup>21</sup> International Conference for the Great Lakes Region

<sup>22</sup> <https://www.icglr.org/index.php/en/rinr>

<sup>23</sup> Extractive Industries Transparency Initiative

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**3. Goals and objectives:** The Union Ministry of Mines does not recognize the Constitutional need to avoid loss for the people – not in the Vision & Mission, Strategy Plan, Results-Framework Document, National Mineral Policy of 2008, various reports on Royalty Rates, or in the Five-year and Annual Plans. It is simply not a requirement!

Similarly, loss avoidance has not been an objective in either the previous or the current mineral policy of Goa. For example, the affidavit of the Goa government in response to our challenge to the lease renewals says

*“Since the lease renewals are carried out in accordance with MMDR Act, 1957, the estimated loss etc calculated by the Petitioner is paragraph 36 is without any base as such and thus does not deserve any merit.”<sup>24</sup>*

In other words, if we are not explicitly required to estimate losses, we will not do so since the results will be contrary to what we want to do. We are reminded of two observations of the Shah Commission:

*“It is possible to pose a question as to whether inaction on the part of the officials of IBM and more particularly DMG of State of Goa of not inspecting mines in exercise of powers vested under a statute (Section 24 of MM(DR) Act, 1957) is a case of dereliction of duties or it is a deliberate omission which resulted into illegal mining and huge loss to Government Exchequer. It is observed that in number of occasions complaints have been received by Government of Goa through responsible persons about the illegal mining activity. Despite that, no inspections were carried out. It is clear that to avoid action the duty to inspect mines might have been evaded by DMG for such a long period i.e. more than 5 years.”*

*“It is pertinent to state here that such illegal act can’t happen without connivance of the politicians, bureaucrats and lessees. There is a complete collapse of the system.”*

Unfortunately, nothing seems to have changed. It is notable that the 29 member committee on the new National Mineral Policy is composed entirely of bureaucrats, and 4 representatives of private business interests. Neither the people nor future generations are represented.<sup>25</sup>

The objective of the Ministry of Mines must change from a focus on how much of our family gold we have managed to sell to a conservation of the value of our family gold. Since 1990, many countries have completely re-written their mining laws.

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<sup>24</sup> Counter Affidavit dated 1<sup>st</sup> December, 2015 by Shri Prasanna Acharya, Director of Mines & Geology, Government of Goa, filed in Writ Petition (civil) 711 of 2015.

<sup>25</sup> The Ministry of Tribal Affairs and the North-East have also been denied representation. Owners don’t matter.



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Perhaps it is time for India to consider the same. We have an opportunity to leapfrog other nations.

**4. Weak skills:** One striking feature of the MMDR Amendment is that our observations could be made by an economics graduate. It is disappointing that no one was able to detect such simple problems. Is there a need to set up a non-partisan advisory body for Parliament, as is common in developed nations?<sup>26</sup> How do we address our lack of skills at the Mines Ministry? How do we strengthen the CAG? Do we need to reintroduce the Independent Evaluation Office?

**5. Government Accounting:** There is a huge confusion surrounding the nature of mineral receipts – usually royalty. At present, governments treat mines department receipts as “non-tax revenue”, and classify it under “payments for economic services”. Most countries treat mineral receipts as “property income”, and more particularly “rent”.

At the same time, the Supreme Court has not decided whether mineral royalties are a tax or a compensation for the mineral. In *India Cement Ltd. v. State of Tamil Nadu and others* (AIR 1990 SC 85), the Supreme Court held that royalty was a tax. In *State of West Bengal v. Kesoram Ltd and others*, SC CA. No. 1532-1533 of 1993, judgement 15-Jan-2004, the Supreme Court held that royalty was a compensation for the mineral. This matter is now before a larger bench of the Supreme Court by Order of reference dated 30-Mar-2011 of a three-Judge Bench in *Mineral Area Development Authority & Ors. Vs. Steel Authority of India & Ors.* (2011) 4 SCC 450.

If royalty is not a compensation for the mineral, then what is the compensation? The only sensible conclusion is that royalty (& now the auction premia) is the compensation for the minerals alienated. We shall proceed on this basis.

Earlier in 2016, we had written to the IMF & the Government of India analyzing the impact of treating mineral receipts as revenue for government finance statistics.<sup>27</sup> We have recently sent a response to comments as well.<sup>28</sup> The note and response show that this error has multiple serious consequences working through different factors (see our notes for a more thorough explanation).

Politicians argue for new mines or increased extraction on the grounds of a boost to the government revenues. Since mineral receipts are accounted for as revenues, a derived goal is to maximise revenues, a fuzzy target. This drives increased

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<sup>26</sup> Congressional Budget Office in the US, Office of Budget Responsibility in the UK

<sup>27</sup> <http://goenchimati.org/wp-content/uploads/2016/10/2016-10-04-Mitigating-the-Resource-Curse-by-improving-Government-Accounting-Note-for-IMF.pdf>

<sup>28</sup> <http://goenchimati.org/wp-content/uploads/2017/08/2017-08-22-Government-accounting-and-the-Resource-Curse-Response-to-FAQs.pdf>

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extraction at lower prices (resulting in magnifying the losses), crony capitalism, wasteful spending, patronage, declining wealth and increasing inequality.

Revenue terminology breaks the link to the asset value, hiding the losses. Windfall terminology increases the urgency, and makes us treat auction premia as a bonanza. Commodity booms and busts create dramatic volatility in government revenues, which are difficult to manage, and frequently result in drawing on savings or selling more minerals when prices are at their worst.

If politicians had to disclose that they are selling inherited assets, significant losses would be politically untenable. This would squeeze the corruption and crony capitalism. The people would ask (a) why are we selling our family gold, (b) is this the best time, (c) how much is it worth and how much are we receiving, and (d) how are we saving the money we receive so that our children receive their inheritance?

Arguments for consuming the capital would be difficult. Consequently, the savings rate is likely to rise, boosting growth.

The example of Goa shows the distortion caused by government accounting.<sup>29</sup>

Amounts in Rs. Crore				
Aggregate	As Reported		In Reality	
Transaction narrative	<b>Revenue (mining)</b>	<b>2,387</b>	Opening capital : mineral	51,655
			Mineral sold	-51,655
			Capital receipt : cash	+2,387
			<b>Change in net worth : loss</b>	<b>-49,268</b>
			Closing capital : cash	2,387
Government revenue		27,402	<b>Net revenue</b>	<b>-24,253</b>
			Revenue	25,015
			Loss from mining	-49,268
Government net worth	Increase	2,387	Loss	-49,268
Goa GDP		1,87,297	(Subtracting the economic rent <sup>30</sup> )	1,35,642
Goa net worth	Increase	2,387	Loss	-49,268
Goa commons wealth	Decrease	-2,387	Decrease	-51,655

<sup>29</sup> From [Catastrophic Failure of Public Trust in Mining: Case Study of Goa](#), table 3.

<sup>30</sup> If we subtract the mining contribution to GDP (instead of economic rent), real GDP is Rs. 1,598.53 billion.

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On present accounting, mining appears a success, increasing government revenue, and GDP too. In reality, Goa suffered a decline in net worth to the extent of 95% of the economic rent (Rs. 49,268 crores), and the government suffering a loss of inherited capital of twice its true revenues (Rs. 25,015 crores). The wealth lost from the commons (Rs. 51,655 crores) accounted for an average of 28% of Goa's GDP over the period (Rs. 1,87,297 crores), cumulatively 1.5 times exit GDP. True GDP is much lower (Rs. 1,35,642 crores). Per capita income is over-stated, and the people are actually poorer.

Since Mines Departments are treated as providing economic services, an index of their efficiency is the royalty earned / mines department expense. Higher the better. However, if we take a sale of family gold perspective, we would look at mines department expense / total mineral wealth, and mines department expense / total economic rent of minerals sold. And we would evaluate them on the achieved Loss Rate<sup>31</sup> and amounts recovered from illegal mining.

All receipts from mining should be treated as Capital Receipts. This impacts three sets of standards: (a) government finance statistics (IMF's GFSM<sup>32</sup> 2014), (b) national income statistics (NASSM<sup>33</sup> 2007/SNA<sup>34</sup> 2008), and (c) government accounting (GASAB<sup>35</sup> / IPSASB<sup>36</sup>).

All receipts from mining should be treated as part of the Public Trust Account. The money from divestments is treated similarly and deposited in the National Investment Fund<sup>37</sup>. It is important that the funds are not co-mingled<sup>38</sup> within the treasury.

Resource dependent states will need time to reduce their dependence on mineral receipts for FRBM<sup>39</sup> thresholds. A few transition steps can be considered:

- a) All auction premia should be invested in the Future Generations Fund.
- b) Royalty treated as revenues may be capped at the level of 2016-17. All other receipts should be deposited in the Future Generations Fund. This cap would reduce to zero in [five] years.

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<sup>31</sup> Loss = (Economic Rent – Mineral Receipts). Loss rate = (Loss / Economic rent)

<sup>32</sup> Government Finance Statistics Manual

<sup>33</sup> National Accounts Statistics Sources and Methods, <http://www.mospi.gov.in/publication/national-accounts-statistics-sources-and-methods-2007-0>

<sup>34</sup> System of National Accounts

<sup>35</sup> Government Accounting Standards Advisory Board

<sup>36</sup> International Public Sector Accounting Standards Boards

<sup>37</sup> <http://dipam.gov.in/national-investment-fund>

<sup>38</sup> <https://en.wikipedia.org/wiki/Commingling>

<sup>39</sup> Fiscal Responsibility and Budget Management

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**6. Structural:** While States own sub-soil minerals, the Centre controls most aspects of mining through the MMDR Act. In private sector mining, mineral receipts are driven by (a) extraction, (b) mineral price, and (c) royalty rate. None of these can be controlled by the state. The MMDR Act specifies that royalty rates can be enhanced only once every 3 years, and set by the Centre. Auctions will take place twice a century with the structure decided by the Centre. Zero loss is impossible for states to achieve under this legal structure.

From a political economy perspective, private mining creates an unnecessary layer of agency issues. The leaseholder is interested in capturing as much of the value of the mineral as possible. Given the sums of money involved, it is in their interest to capture the political system and the government as well. This makes it highly unlikely that the public can avoid a loss, despite assurances from theoretical modeling.

Logically, states should follow the Gujarat model<sup>40</sup> and reserve the entire state for government mining. There is no other way to achieve zero loss within the current framework. Perhaps states should auction both the contract to extract the ore as well as the extracted ore as well. And execute this departmentally to avoid corporate income tax. Tamil Nadu and Telangana already have this contractual monopoly model in place for sand, although they may not be auctioning the extraction of sand, or the extracted sand to end-users or traders.

v) The GF Benchmark & fiscal policy<sup>41</sup>

For a mineral owner, the objective of mining is to achieve better outcomes through investment of the consideration for the family gold. Conceptually, if we mine, there are 6 stages of mineral transformation to consider – as a mineral (before mining), when selling the mineral, when investing the proceeds, maintaining the new capital, earning income and distributing the income. At each stage, loss or theft must be prevented. If income can be increased or distributed better at no greater risk, that would be preferred. The wealth is most vulnerable when it is being converted from mineral to cash to investment (stages 2 & 3).

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<sup>40</sup> In 2009, the state of Gujarat reserved a large portion for public sector mining of bauxite.

<sup>41</sup> See our note to IMF and our Response to FAQs for a more elaborate explanation. <http://goenchimati.org/wp-content/uploads/2016/10/2016-10-04-Mitigating-the-Resource-Curse-by-improving-Government-Accounting-Note-for-IMF.pdf>. <http://goenchimati.org/wp-content/uploads/2017/08/2017-08-22-Government-accounting-and-the-Resource-Curse-Response-to-FAQs.pdf>.

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The table below lists the six stages and the corresponding goals.

<b>Stages</b>	<b>Gold to Crop</b>	<b>Mineral to Citizen’s Dividend</b>
1. Mineral in-situ	Prevent theft	Prevent theft
2. Sale of inheritance	Zero loss	Zero loss of value
3. Investment (save all)	Buy land	Invest in new “non-wasting” assets 1. Real – infrastructure, education, public health, sometimes through a fund <sup>42</sup> 2. Financial – Future Generations Fund
4. Protect investment	Maintain land productivity	1. Real : Maintenance 2. Financial : Inflation proofing
5. Earn real income	Grow a crop	1. Real : Management 2. Financial : Investment management
6. Distribute income equally	Consume the crop	Distribute commons dividend <sup>43</sup>

The core of the Goa Foundation Benchmark can be simplified to “get all, save all, share all” – (i) zero loss mining (capture the entire economic rent), (ii) save all the capital receipts only in a future generations fund with inflation-proofing, and (iii) distribute only the real income only directly to the people as owners, a commons dividend. This is akin to an index fund, a passive asset management strategy. Very few active asset managers will be able to outperform the GF benchmark.

- *Active management of fiscal policy*

As with asset management, it is tempting to recommend active management of the fiscal policy. There are many credible proposals for improving the growth rate itself (infrastructure) and/or achieving a more progressive distribution (universal health / education / work / food).

It is argued that in under-developed locations, the optimal fiscal path may even be to sell for a loss, as the returns on investment into physical / human capital assets will rapidly pay off. Alternatively, it is posited that since the government is capital

<sup>42</sup> With real investments, some countries have an asset management structure that can retain the nature of the commons and pay out a dividend (eg, Temasek in Singapore). Indonesia and Sweden are other examples.

<sup>43</sup> In theory, a public investment management fund like Temasek could pay out a commons dividend.

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starved, real investments are a better choice compared to either saving in a future generations fund or distributing the real income. We are sceptical.

- *Global catastrophe*

We have documented extremely high loss rates over long periods for iron ore and fossil fuels in India. IMF data shows significant losses of the value of minerals are common – a minimum of 15% for oil and 35% for minerals.<sup>44</sup> In other words, mineral receipts do not exceed 85% of the value of the oil and 65% for minerals.

Saving rates from mineral receipts are far below 100%. In fact, IMF’s own estimates are that for 2000-2008 (the China boom), the average savings rate (in financial assets) for resource rich economies was around 35%.<sup>45</sup> Of the 65% spent, only around 33% was capital spending.<sup>46</sup> In other words, around 43% of the mineral receipts were spent. The efficiency of public investment was also very poor. Only about half of public investment effort translates into actual productive public capital.<sup>47</sup>

If we use IMF data and assume a best case 15% loss rate, 35% of the amount captured saved in financial assets, 1/3<sup>rd</sup> of the balance utilised in public investment, whose efficiency in resulting in productive capital is 50%, we see the following:

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<sup>44</sup> [Fiscal Regimes for Extractive Industries: Design and Implementation](#), para 64

<sup>45</sup> Figure 1.17 in the IMF [Fiscal Monitor – The Commodities Roller Coaster](#) (Oct 2015)

<sup>46</sup> Figure 1.12 in the IMF [Fiscal Monitor – The Commodities Roller Coaster](#) (Oct 2015)

<sup>47</sup> Figure 1.13 in the IMF [Fiscal Monitor – The Commodities Roller Coaster](#) (Oct 2015)

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<b>Experience in converting mineral capital into other kinds of capital</b>			
	Estimates based on IMF data		GF Benchmark
Mineral capital extracted		\$100.00	\$100.00
<b>Loss in value to extractors</b>	15% loss rate	<b>\$15.00</b>	<b>\$0.00</b>
Mineral receipts		\$85.00	\$100.00
<b>Of which: Financial assets</b>	35% saved	<b>\$29.75</b>	<b>\$100.00</b>
Balance spent (by politicians)	65% spent	\$55.25	\$0.00
Of which: Public investment	1/3rd	\$18.42	\$0.00
<b>Wasted investment</b>	50%	<b>\$9.21</b>	<b>\$0.00</b>
<b>Useful investment</b>	50%	<b>\$9.21</b>	<b>\$0.00</b>
<b>Consumption</b>	Balance	<b>\$36.83</b>	<b>\$0.00</b>
(Bold rows add up to \$100)			
<b>Summary</b>			
Total investment (financial + useful)		\$38.96	\$100.00
Loss to the economy (loss + wasted + consumed)		\$61.04	\$0.00
Loss to the commons (all except financial assets)		\$70.25	\$0.00
Useful public investment		\$9.21	\$0.00
Amount spent by politicians		\$55.25	\$0.00

For every \$100 of minerals extracted, \$29.75 is saved in financial assets (earning the market rate of return, like our benchmark). Another \$9.21 of useful public investment was achieved. Net worth reduced by \$61.04. The estimates of wasted and useful investment would have assumed a discount rate, which is unlikely to be higher than the market rate of return. Hence, the useful public investment cannot recoup the loss.

In the example above, only \$29.75 is still a part of the commons. The distribution of wealth has likely deteriorated significantly. This has been a global catastrophe. It is no surprise that *The Changing Wealth of Nations* study by the World Bank (2011) found that that since 1970, all countries in which rent from minerals accounted for more than 15% of GDP had negative Adjusted Net Savings.<sup>48</sup> In simple terms, they became poorer.

While this is a global catastrophe, the position in India is likely worse still. Loss rates seem to exceed 75% (compared to 15% assumed above). Of the mineral receipts, almost everything is spent. Even if some has been saved, given the poor efficiency of

<sup>48</sup> [The Changing Wealth of Nations](#). (2011). Washington, D.C.: World Bank. Page 11.

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public investment in India, the marginal project is likely to have a negative rate of return. It would be useful if the government analyzes & discloses the historical performance in India similar to the analysis above.

- *Goa Foundation’s Benchmark*

Our benchmark is likely to produce the market rate of return, and retains the nature of the commons. An active fiscal path has a stiff benchmark to outperform. Practically, Norway’s Sovereign Wealth Fund (SWF) has been achieving real returns of 3.8%. Like an Index fund, our program can act as a benchmark for evaluating proposals for active fiscal paths. Our GF Benchmark has other positives as well:

**Absolute standards easy to administer, monitor and defend:** Our benchmark uses absolute standards (zero loss, save all (zero consumption, zero physical investment), share all). Miners and governments would find it administratively easier. The standards are easier to monitor by the people and defend from political attack. Even if we start with 1% of mineral receipts going to the government, with budget crises, real or manufactured, this proportion will tend to increase to 100%.

There are a number of other important reasons for our choice of absolute standards. Please read [Why 100% to Permanent Fund](#)<sup>49</sup> and [Why income distribution only as Citizen's Dividend](#)<sup>50</sup>.

**Simplicity:** Active fiscal paths require continuous decisions as to:

- (a) how much of the mineral receipts to be consumed (either under the Permanent Income Hypothesis, or simply as revenue),
- (b) how much public investment (limited by the absorption capacity of the economy), and the balance to be saved (in Stabilization or Future Generations Funds).

These decisions become even more difficult with commodity price volatility (permanent income fluctuates!) Eventually, the powerful bend these decisions to suit their preferences, usually towards higher consumption (for patronage) and higher physical investment (to benefit from the associated corruption).

**Implementable:** We have made detailed proposals for how this framework could be implemented in the context of iron ore mining in Goa.<sup>51</sup>

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<sup>49</sup> <http://goenchimati.org/why-should-all-mineral-receipts-be-saved-in-the-permanent-fund/>

<sup>50</sup> <http://goenchimati.org/why-a-citizens-dividend-why-only-a-citizens-dividend/>

<sup>51</sup> [Intergenerational Equity Case Study: Iron-ore Mining in Goa](#) describes this framework as being argued at the Supreme Court ([https://www.academia.edu/31511752/Intergenerational\\_Equity\\_Case\\_Study\\_Iron-ore\\_Mining\\_in\\_Goa.](https://www.academia.edu/31511752/Intergenerational_Equity_Case_Study_Iron-ore_Mining_in_Goa.)) The Goenchi Mati Manifesto ([goenchimati.org/manifesto](http://goenchimati.org/manifesto)) provides a popular précis.



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**Reducing theft from the commons:** Under the status quo, minerals are a concentrated source of great wealth. Consequently, minerals draw rent seekers such as miners, politicians and even citizens. Under our proposal, the commons dividend links the citizens to their family gold, creating a significant interest in maintaining the mineral / future generations fund commons. The zero loss target puts pressure on the miners benefiting unfairly. The capital is then sequestered from the politicians through the Future Generations Fund & the commons dividend.

**Improves the social contract:** If the government needs money for good projects, it should convince the people to pay higher taxes. That will increase the discipline on the government, improving governance. The state may opt to tax the commons dividend explicitly. States which manage to follow the GF Benchmark are also likely to be viewed as better credit risks by the capital markets.

**Strengthens the economy:** As we have seen, savings from mineral receipts when treated as revenue are low. In our benchmark, the savings rate in the economy will increase. Further, since the Permanent Fund is invested in the capital markets, those will deepen. The funds are essentially perpetual in nature, ideal for infrastructure financing. Since the funds are invested in a broadly diversified portfolio across India and potentially overseas, it diversifies the risk for individual states.

**Basic income included:** The commons dividend is a Universal Basic Income (but not a Minimum Income), with all its benefits. This may be the strongest reason to adopt the benchmark.

**Cognitively easy:** Our benchmark is relatively simple for ordinary people to understand. Inheritance customs and experiences with common pool resources, cooperatives and mutuals make mental analogies easy.

[Meets important criteria](#)

**Meets intergenerational equity & the sustainable yield principles:** Under our policy, mineral capital is converted into a financial perpetuity. The capital is protected and the sustainable income is distributed equally to all. Each generation benefits from the income in its time. In economic terminology, it is a combination of a loss rate of 0%, a bird-in-hand rule fund<sup>52</sup>, and distributing the real income only as a commons dividend.

**Achieves growth and distribution objectives:** The mineral commons become the financial commons, earns the market rate of return, and the income is distributed to the commoners as a commons dividend. As long as some of the distributed income

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<sup>52</sup> Where the capital is invested and only the real income is spent – investor preferences for dividends

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is saved, the economy will grow and the capital we bequeath will increase. This meets both the growth and distribution objectives of the economy.

**Follows principles of property rights:** The Goa Foundation (GF) Benchmark is logical from the perspective of property rights – mineral commons are transformed into the Future Generations Fund commons, and the real income from the fund is distributed to the commoners. Nothing could be fairer, or more equal.

- *Passive or Active Fiscal Policy*

If we look at the experience in India as well as the global experience, it is clear that successful active fiscal policies are the exception. The GF benchmark has a number of advantages over active fiscal policies. Most importantly, it creates the possibility of a new social contract, with every Indian a true stakeholder. We must implement the Goa Foundation Benchmark.

## b. Externalities & sustainability of extraction

The previous pages dealt with implementing Intergenerational Equity in the context of our family gold. There are still other inherited assets that we need to consider. We deal first with externalities. Mining damages a number of social assets. Depending on a variety of factors, mining may have negative impacts on the environment, agriculture, fishing, health, etc. How do we compensate for this loss?

### i) Constitutional principles

Intergenerational Equity is intimately linked to the **Sustainable Development (SD) Principle**<sup>53</sup> – after all, what are we trying to sustain, and for whom? The capabilities of the planet, for future generations.

Sustainability itself can be simplified as two related principles:

1. We are custodians over what we inherit. It is our duty to ensure that our children and future generations inherit at least as much as we did.
2. Provided we have safeguarded our inheritance, we may consume the fruit.

In slightly more technical terms, the sustainable yield of natural capital is the ecological yield that can be extracted without reducing the base of capital itself, i.e. the surplus required to maintain ecosystem services at the same or increasing level over time. This is the **Sustainable Yield Principle**.<sup>54</sup>

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<sup>53</sup> The Sustainable Development Principle has been ruled part of Art 21, Right to Life

<sup>54</sup> The Sustainable Yield Principle has been ruled part of Art 21, Right to Life

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Our inheritance includes our natural resources, the atmosphere, oceans, ozone layer, land, forests, flora, fauna, rivers, minerals and much else. A strict reading of these principles would imply that no natural resources should be depleted beyond the sustainable yield (strong sustainability). Yet our modern economy does damage or consumes our natural capital in a variety of ways. Minerals are clearly non-renewable, with a zero sustainable yield<sup>55</sup>. A modified approach is to consider different types of capital as substitutable. The question then becomes how we keep our stock of capital at least constant (weak sustainability).

Applying weak sustainability, there are two subsidiary principles. The first is the **Precautionary Principle**<sup>56</sup>, which applies to “critical” natural capital such as the ozone layer. In essence, the precautionary principle says do not cause a catastrophe, do not even risk a catastrophe. The Montreal Protocol to phase out CFCs was based on the precautionary principle.

In situations where the damage or consumption of natural capital is more marginal, we apply a principle of compensation. Where trees are cut, more must be planted in compensation. When carbon is emitted, carbon cesses are collected as compensation for the damage caused. These sums can be used to sequester carbon. This is the **Polluter Pays Principle**<sup>57</sup>.

ii) Intergenerational equity with externalities

Specific mines go through an environmental approval process. However, what has been found in numerous places – Aravallis, Bellary, Goa, Odisha, etc – is when multiple mines operate, the cumulative impact may be excessive. There is a need to cap the extraction based on the precautionary principle. Goa Foundation proposes area-wide caps at a level where all environmental parameters are within statutory limits, and no critical capital (species, biodiversity, heritage, etc) is under threat. Applying the Precautionary Principle, the cap would drop sharply with any violation anywhere, but rise slowly if all parameters are consistently within bounds over long periods of time. There is little lost in a multi-generational perspective is mining is slower. The minerals will eventually be extracted by our children.

The next step is to identify all the other assets being damaged and implement appropriate measures under the Polluter Pays principle. There are numerous mechanisms to do this for environmental assets, such as CAMPA<sup>58</sup>. When multiple

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<sup>55</sup> There are some potential exceptions such as sand and deep groundwater.

<sup>56</sup> The Precautionary Principle has been ruled part of Art 21, Right to Life

<sup>57</sup> The Polluter Pays Principle has been ruled part of Art 21, Right to Life

<sup>58</sup> Ideally, no further forest diversions would be permitted until CAMPA plants and sustains enough new trees.

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mines are operational and damage cannot be identified to any single one, tools like the District Mineral Foundation can be used to mitigate the damage.

#### *District Mineral Foundation & Future Generations Funds*

These are often confused as both are funds. There are a few essential differences:

<b>Features</b>	<b>District Mineral Foundation</b>	<b>Future Generations Fund</b>
Key driver	Application of the Polluter Pays Principle to Externalities	Intergenerational Equity for family gold
Purpose	<i>“Safeguarding interest of affected persons”</i>	Save inherited wealth for future generations
Objective	<i>“To work for the interest and benefit of persons, and areas affected by mining related operations”</i>	Preservation of inherited wealth for all future generations
Geographic area	District where mining takes place	Ownership: Entire State, UT, all India, District Council, etc
Beneficiary – persons	Mining affected	All citizens of a state, and future generations
Beneficiary – area	Mining affected	Not applicable
Focus	Mitigating impacts of mining	Preservation of wealth
Use of inflows	To be spent	To be saved and accumulated
Use of income	To mitigate the impacts of mining	First priority: adjust fully for inflation Second priority: distribution
Investment of principal	Temporary liquidity and cash flow matching	Maximise long term returns
Investment instruments	Fixed deposits, CDs, money market mutual funds	Equity, debt
Use of principal	Must be spent. Not intended to accumulate	Cannot be spent, must accumulate. Potentially, use for catastrophes

#### **c. Mineral Associated Income**

While the opportunity to earn income from extraction is an inherited asset, it is difficult to see how states can ask workers and capital providers to give up their

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income. Goa Foundation therefore proposes an independent cap at 1/200<sup>th</sup> of the proven mineral reserves, extending extraction over 7 generations. This is a second best option. Alternative mechanisms that would actually compensate future generations need to be developed.

Further, preference must be given to the local populace for the extraction activity, as they are owners of this inherited option.

#### d. Timing of sale

As discussed earlier, this is an extremely valuable real option. States should consider separating the timing of extraction from the timing of sale and retaining control over both. This would enable selling more minerals when prices are high.

Another response would be to insist on a minimum price for our minerals.

#### e. Option to use

It is in recognition of this option value that there are calls from bans on minerals exports. If minerals are value-added within the territory, the option is exercised for the benefit of the owners.

#### f. Strategic reserves

There is a final possibility, to maintain high quality reserves as strategic deposits. This has the advantage of benefiting from a reverse “Dutch Disease”. The nation would have to strengthen its manufacturing export sector, which will have significantly greater multiplier effects. There are numerous examples of nations that have excelled despite poor mineral endowments – e.g. Japan and Switzerland.

### **D. Precedent from the Goa mining case**

In the Goa mining case, the Supreme Court established an Expert Committee to examine how to implement IE & SD in Goa. The Supreme Court, based on the Expert Committee’s recommendations, has imposed an interim cap of 20 million tons a year for the environmental load under the Precautionary Principle and to increase the life of the mineral so that future generations may also benefit from it. The Supreme Court has also imposed a new levy of 10% of the sale value of iron ore to be deposited in a Goa Iron Ore Permanent Fund. This is a first for India, and to our knowledge, a global precedent. India should be proud.

## Specific Recommendations

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The NMP, the mining laws, rules and regulations, must conform to the Constitution. How do we implement it? As we are proposing a complete overhaul of mining, these recommendations can only be a high level sketch. Here are some of the aspects that need consideration:

- a) Goals and objectives of mineral extraction.
- b) Asset inventory
- c) Where should we mine
- d) If, when & how much should we mine
- e) What should be done with the mineral?
- f) Zero loss in value when mining
- g) How should governments deal with mineral receipts
- h) Permanent Fund and Citizen’s Dividend
- i) Caps and compensatory mechanisms
- j) Who should mine
- k) Constitutional safeguards
- l) Required controls
- m) Ethics in inheritance management
- n) Data for designing policy

### **A. Goals and objectives of mineral extraction**

As a starting point, the Government should adopt a new mineral policy that acknowledges the rights of our future generations and explicitly keeps the Public Trust Doctrine and the Intergenerational Equity Principle at its heart. Minerals are a shared inheritance.

**Conservation of minerals** must be extended to include the conservation of the capital value of the mineral. Zero loss in mineral value when extracting is a must. We must saving everything received and ensure the capital value is protected. Irreparable damage to critical assets should be prohibited.

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**Mineral development** must be understood to mandate zero waste mining, extracting every bit of value from the mineral & its overburden.<sup>59</sup> We must make the most of the embedded option to use the mineral.

As minerals are some of our most valuable assets, the state must implement a cutting edge control system. Everyone must have a stake in its management - we must harness the collective wisdom of the people. Radical transparency is a must so that anyone anywhere can contribute in ensuring their children receive their due. This can spur a number of new businesses and opportunities.

At the minimum, we must commit to global best practices including

1. Implement the Natural Resource Charter<sup>60</sup>,
2. Implement controls better than the Regional Initiative against the Illegal Exploitation of Natural Resources (RINR)<sup>61</sup> of the International Conference of the Great Lakes Region (ICGLR)
3. Join the Extractive Industries Transparency Initiative (EITI)<sup>62</sup>
4. Join the Open Government Partnership<sup>63</sup>
5. Endorse the Santiago Principles.<sup>64</sup>

Since 1990, many countries have completely re-written their mining laws. Perhaps it is time for India to consider the same. We have an opportunity to leapfrog other nations.

## **B. Asset Inventory**

As managing our wealth is the key objective, good information must be collected and made available.

**Geology:** In a private mining scenario, the lower the geological risk, the lower would be the loss rate. It is therefore imperative that for easy to locate minerals (surface deposits of iron ore or bauxite), the entire nation be surveyed in mission mode.<sup>65</sup> The Act should be amended to require that the States conduct these

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<sup>59</sup> In Goa, it is reported that the over-burden is 4 tons for 1 ton of ore. One miner has been unsuccessfully applying to extract associated minerals. He claims that the overburden can be separated into bentonite, manganiferous clays, red oxide, etc. The value of these minerals is potentially as much as the iron ore itself.

<sup>60</sup> <https://resourcegovernance.org/approach/natural-resource-charter>

<sup>61</sup> <https://www.icglr.org/index.php/en/rinr>

<sup>62</sup> <https://eiti.org/>

<sup>63</sup> <https://www.opengovpartnership.org/>

<sup>64</sup> <http://www.ifswf.org/santiago-principles-landing/santiago-principles>

<sup>65</sup> For example, a number of countries have used LiDAR to survey the entire nation. Denmark has released the date set to the public. [https://en.wikipedia.org/wiki/National\\_lidar\\_dataset](https://en.wikipedia.org/wiki/National_lidar_dataset)

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detailed geological surveys, if available information is incomplete, prior to entering into any mining lease.

The MMDR Act already requires every lease holder to provide geological data on an annual basis to the Geological Survey of India. All geological data (with the possible exception of atomic minerals), should be freely published for the public to download and use. There is the famous case of Goldcorp, a Canadian gold mining company that put 50 years of its geological data online and successfully ran a contest to find new deposits of gold within its existing lease<sup>66</sup>. This can be replicated in India. And as far as we can tell, there is no advantage to withholding this information from the public. This should be implemented in mission mode.

**Environment, health, cultural and other assets:** In parallel, it is important that the rich environment be properly mapped and documented. Village biodiversity committees (& equivalent entities for health and other human capital) could be equipped to carry out these surveys. Important community assets can be mapped in a crowd-sourced format. The surveys must be completed before any area is considered for a mining lease.

**Valuation:** It is clear that mineral resources are extremely valuable assets of the people. As trustee for the public, it is the duty of the State to provide the public with adequate information about their assets, viz., known sub-soil and offshore minerals. There should be a requirement in the MMDR and other relevant acts for all Governments to provide a detailed estimate of the assets of the people – all mineral deposits and minerals within leases, giving volume, quality and estimated value of the mineral reserve. Similarly, all mineral lease holders should have an obligation to make similar disclosures on an annual basis, as often these estimates are revised.

There are established methodologies for valuing mineral reserves, as these often constitute the bulk of the value of a mining company. In India, the Ministry of Statistics and Programme Implementation has published its framework for Green National Accounts in India<sup>67</sup>, which includes a section on valuing mineral reserves. India may consider joining the Wealth Accounting and the Valuation of Ecosystem Services (WAVES)<sup>68</sup> partnership. Since 2010, the WAVES partnership has 70 countries and numerous private sector organizations supporting Natural Capital Accounting. For reporting mineral reserves, India may consider joining the

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<sup>66</sup> <https://www.ideaconnection.com/open-innovation-success/Open-Innovation-Goldcorp-Challenge-00031.html>

<sup>67</sup> [http://mospi.nic.in/mospi\\_new/upload/Green\\_National\\_Accounts\\_in\\_India\\_1may13.pdf](http://mospi.nic.in/mospi_new/upload/Green_National_Accounts_in_India_1may13.pdf)

<sup>68</sup> <http://www.wavespartnership.org/>



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Committee for Mineral Reserves International Reporting Standards (CRIRSCO) and adopt the CRIRSCO International Reporting Templates.<sup>69</sup>

The Ministry of Petroleum and Energy of Norway, in cooperation with the Norwegian Petroleum Directorate (NPD), published an annual book on the Norwegian petroleum sector, Facts 2014, now replaced by a website.<sup>70</sup> The website gives a comprehensive overview of the petroleum activity on the Norwegian continental shelf (NCS). The Norwegian Petroleum Facts app<sup>71</sup> has also been developed by the NPD and the Ministry of Petroleum and Energy for use on iOS, Android and Windows mobiles and tablets and has detailed information publicly available on every oil field and lease on Norwegian territory.

### **C. Where should we mine?**

Further extraction from existing mines must be given priority over breaking undisturbed areas. Similarly, priority for new mining sites must also factor in the social & ecological values of the site and the damage caused by mining – it may be better to extract in a desert than in the middle of a rain forest.

### **D. If, when & how much should we mine**

A fundamental question is whether we should extract our minerals now. As we have seen, present governance is effectively guaranteeing huge losses to our children. We have inherited these assets because 30,000 generations of our ancestors decided to pass them on to their children. There are likely at least another 1,000,000 generations after us. We must be absolutely sure that this is the right time to extract.

We would arrive at the same conclusion if we examined the real option of when to mine. In theory, the human species will last millions of years more. The China boom was certainly not the peak for all times. This raises the question of when to mine. Again, prudence would dictate that only a small fraction be extracted at the present time.

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<sup>69</sup> <http://www.crirSCO.com/template.asp>

<sup>70</sup> <http://www.npd.no/en/Publications/Facts/Facts-2014/>, now replaced by <http://www.norskpetroleum.no>

<sup>71</sup> <http://www.regjeringen.no/en/dep/oed/whats-new/news/2014/Facts-2014--All-you-need-to-know-aboutNorwegian-petroleum-activities.html?id=758351>

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Little is lost in a multi-generational perspective if mining slows down: the next generation can still extract the mineral. The capital is intact.<sup>72</sup> Hence many nations have a preference for imports of natural resources, while treating their own as strategic reserves. The impact is the inverse of the Dutch Disease – the exchange rate would depreciate and exporting industries would strengthen. The multiplier impacts are much greater with manufacturing compared with mining, so it would provide an additional boost.

There is an additional aspect to consider. Traditional non-wasting physical assets were impacted little by the form of the economy. Land is useful in a barter, subsistence or hunter-gatherer economy. Precious stones and metals are shiny and rare, attractive to all humans. The Permanent Fund is dependent on the present financial economy and legal structure. Risk mitigation would require that only a fraction of the mineral be extracted and converted into other capital.

Wealth portfolio management principles should inform our strategy of when to extract and how much of our mineral wealth to convert into other forms of capital. Kelly’s Criterion<sup>73</sup> and universal portfolio algorithms<sup>74</sup> may be useful. There is some recent work by Nissim Nicholas Taleb<sup>75</sup> and Peters & Gell-Mann<sup>76</sup> that would be helpful in making these decisions.<sup>77</sup>

A specific policy would need to be created to determine the rate of extraction, taking into account:

- a) Environmental sustainability of mining operations. Frequently, mining operations exceed the carrying capacity of the environment of the region.
- b) Current and anticipated commodity prices. Extraction should be greatest during periods of high prices. Thought needs to be given to the creation of “swing” capacities to enable greater extraction in periods of higher prices.
- c) Risk mitigation principles.

Since minerals deplete, consideration must be given to setting a minimum price for them.

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<sup>72</sup> It is argued that fossil fuels will be stranded assets, valueless. Not true. It is very likely that if the current civilization manages to cap carbon emissions, global temperatures should revert to normal in 1,000 years & fossil fuels will be useful once again. This is far lower than the average life of a species of 30 million years.

<sup>73</sup> [https://en.wikipedia.org/wiki/Kelly\\_criterion](https://en.wikipedia.org/wiki/Kelly_criterion)

<sup>74</sup> Universal Portfolios, 1991, Thomas Cover. [www-isl.stanford.edu/~cover/papers/paper93.pdf](http://www-isl.stanford.edu/~cover/papers/paper93.pdf)

<sup>75</sup> The Logic of Risk Taking, <https://medium.com/incerto/the-logic-of-risk-taking-107bf41029d3>

<sup>76</sup> Exploring Gambling using Dynamics, Ole Peters & Murray Gell-Mann, <https://arxiv.org/abs/1405.0585>

<sup>77</sup> For an analysis of the importance of the work above, read <https://publishing.aip.org/publishing/journal-highlights/exploring-gambles-reveals-foundational-difficulty-behind-economic>

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## **E. Zero loss in value when mining**

Zero waste mining is essential to get the full value of our shared inheritance. This is required both for conservation of minerals as well as for proper mineral development.

As Public Trustee of the natural resources, the State must ensure that the entire value of the mineral be captured through appropriate legal and contractual structures. This must be explicitly incorporated into the objects of the MMDR Act.

The effectiveness of the Government can be measured by the Loss Rate. The Loss Rate is  $\{\text{Amount Lost} / \text{Value of Mineral}\}$ . The target must be a Loss Rate of 0%. It must be estimated ex-ante and measured annually ex-post. The IMF has developed the Fiscal Analysis of Resource Industries<sup>78</sup> model and released it for open use. This or a similar model should be used and the models available online for scrutiny.

As a corollary, where illegal mining has taken place, the state, as trustee, must recover the full compensation under Section 21(5) – either the mineral or its full value. This must be deposited in the Permanent Fund.

Also deriving from the Public Trusteeship principle, it must be the policy to terminate any and all existing leases, where legally possible, in order to achieve lower Loss Rates.

Taxes, fiscal transfers and subsidies should be done transparently. The Center must compensate the states for imposing losses under the MMDR Amendment Act 2015. If the Center decides to subsidise the power, steel, fertilizer or other industries, it should do it transparently without distorting the commodity markets. Subsidies can be paid using the JAM methodology.

## **F. How should governments deal with mineral receipts**

All receipts from mining should be treated as Capital Receipts. The primary impact is on the government finance statistics. Appropriate changes in the National Income Statistics and public sector accounting are necessary.

All receipts from mining should be treated as part of the Public Trust Account. The money from divestments is treated in a similar manner and deposited in the National Investment Fund. It is important that the funds are kept separate, i.e., not co-mingled within the government treasury.

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<sup>78</sup> <https://www.imf.org/external/np/fad/fari/>

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Resource dependent states will need time to reduce their dependence on mineral receipts for FRBM thresholds. A few transition steps can be considered:

- a) All auction premia should be invested in the Permanent Fund.
- b) Royalty treated as revenues may be capped at the level of 2016-17. All other receipts should be deposited in the Permanent Fund. This cap would reduce to zero in [five] years.

## **G. Permanent Fund and Citizen’s Dividend**

We recommend that the Permanent Funds be managed under the PFRDA/NPS structure. Each state would have a fund for all minerals. The Center would have a fund for offshore minerals. 6<sup>th</sup> Schedule areas could have funds for their minerals. The funds would be invested through professional investment managers as at present.

The NPS has a few advantages (a) the investment managers are competed, making politically directed investments less likely, (b) many government employees have their life savings with the NPS, (c) the NPS is designed to cater to the entire population. The entire investment process must be benchmarked to best practices, including the Santiago Principles and the Truman Index.<sup>79</sup>

The Permanent Funds should receive the same tax & stamp duty exemptions and benefits as the NPS. The Citizen’s Dividend should be protected against garnishing or liens.

We should note that the Permanent Funds will raise India’s savings rates and strengthen India’s capital markets. If the quantum is large enough, some of the corpus can be invested overseas as a SWF.

Having a central administrator for the citizen’s dividend also makes movements of people easier. When people move from one state to another, the central registry would automatically add the person to the roster of the new state, and remove that person from the old state. This enables labour mobility across India.

As an alternative, a perpetual Mutual Fund product could be considered. These units cannot be redeemed. They can only be switched to perpetual mutual funds of other mutual fund houses. The benefit is the real income distributed, in perpetuity.

The Citizen’s Dividend is of course a form of Universal Basic Income. This will give a boost to village economies, and spur entrepreneurship. An option may be provided

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<sup>79</sup> We have scored the 3<sup>rd</sup> draft Goa Iron Ore Permanent Fund scheme prepared by the Goa government as scoring 16 / 100 on the Truman Index. The best in class scores at least 98 / 100.

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for accumulating the dividend for majority, retirement (NPS Tier 2), or a lump sum for higher education or starting a business.

## **H. Caps & compensatory mechanisms**

Cumulative impact caps, as already imposed in some districts of Karnataka and in Goa, are required. As mining has a wide variety of impacts, a cap-and-trade system isn't feasible. Instead, we propose an area wide cap, set based on the precautionary principle, with strict environmental monitoring. Any violation would trigger an automatic sharp drop in the cap. If there are no violations over long periods, then the cap may be permitted to rise slowly.

Under the Polluter Pays Principle, efforts must be made to trace damage back to the entity causing it, and recover adequate compensation. Effectiveness of the compensatory mechanisms must be measured and reported.

The District Mineral Foundation, intended for mining affected persons and areas, are controlled by politicians and bureaucrats with no democratic oversight, essentially a slush fund. The plans for DMF funds should be created by participatory budgeting at the gram sabha level. The District Planning Committee, constitutionally required under Article 243(ZD)<sup>80</sup> could be tasked with rolling out the system, and managing the DMF.

Rule 18(1) of Karnataka's District Mineral Foundation Rules 2016<sup>81</sup> provides that 20% of the funds under the DMF be saved as an endowment fund for taking care of future expenses after mining activities have ended in the area. This is laudable. Consideration should be given to using the real income of this fund to make cash transfers to mining affected people.

## **I. Who should mine?**

The income from mining is directly associated with the mineral, and depletes with it. Once the mineral is fully extracted, a ghost town remains. In this scenario, preference for extraction should be given to the local community, potentially through cooperatives, as they know the terrain best. A part of the mine closure plan must include re-training and creation of new opportunities for the mining dependent – direct and indirect.

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<sup>80</sup> [https://en.wikipedia.org/wiki/District\\_planning\\_committees\\_in\\_India](https://en.wikipedia.org/wiki/District_planning_committees_in_India)

<sup>81</sup>

<http://khanija.kar.ncode.in/SiteAssets/SitePages/Rules/District%20Mineral%20Foundation%20Rules,%202016.pdf>

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## **J. What should be done with the mineral?**

The use of the mineral is itself a real option. A century ago, when transportation was less easy, access to minerals was a key factor constraining development. Many wars have been fought, in part to ensure access to natural resources. Preference must be given to value adding minerals locally.

## **K. Constitutional safeguards**

The constitution should be amended to explicitly provide rights to future generations. It should also be amended to safeguard minerals and the Permanent Funds from liens, mortgages and other indirect means by which they can be alienated.

## **L. Required Controls**

As you are aware, there are tens of thousands of illegal mining cases detected each year. This is not surprising. The amounts at stake are enormous, and penalties imposed relatively light. There is a crying need to significantly increase the monitoring of mining and enforcement actions to deter illegal mining. This needs to be across all States and the Centre as much of the ore crosses state boundaries.

There are now a large number of credible reports that show in detail the myriad ways in which various controls are being breached. The summary of the Karnataka LokAyuktha Report itself runs into 400 pages. We recommend that a separate task force be set up to redesign the mineral control system from top to bottom. In the Odisha mining case, the Supreme Court is consider the establishment of a committee tasked with a similar mandate.

We have the following proposals for controlling illegal mining:

- 1) **“Sunlight is the best disinfectant”** – implying that putting as much information as possible in the public domain would help prevent corruption. We note that while the Ministry has increased the disclosure, it is far from acceptable.
  - a. In future, Governments must put every document and data point possible in the public domain. This would permit the general public to create their own algorithms and computer programs that can automatically flag discrepancies, anomalies and illegalities. As the adage in the world of Open Source goes, given enough eyeballs, all bugs are shallow. The implication is that since so many people are looking at the problem, a solution is quickly found. Similarly, if there is radical transparency, then illegalities would be hard to hide.

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There are significant economic advantages from openly publishing real time data from trucks, barges, as well as environmental sensors both with the government as well as in the mines. Real-time truck position data would permit more efficient operations. Traffic patterns can show the various choke points. Queues building up could trigger dispatch of policemen. Theft of trucks or ore would be reduced.

Similarly, real-time environmental data would enable micro-climactic predictions. This would help with disaster preparedness. Over time, precision agriculture would be aided by knowing real time wind patterns or water levels for irrigation. This could be done through data.gov.in open data portal. Given the scale of India’s requirements, such an initiative can be a significant boost for the Indian economy.

Data should be received and sent: (i) In a granular manner – each and every truck, train wagon, barge, ship in mining areas needs to be monitored at all points in time. The technology is available, and quite cheap. (ii) In real time, or as near to real time as possible. (iii) Using open standards / XML data schemas. (iv) Freely accessible to the general public in real time at no cost. (v) All data from relating to minerals, including environmental monitoring data, geological data, financial data, should be reported in this manner.

- b. Specifically for mining, the Extractive Industries Transparency Initiative (EITI)<sup>82</sup> is well known. India should join the EITI initiative.
- c. In addition, the World Bank has started an EITI++<sup>83</sup> (Extractive Industries Transparency Initiative Plus Plus) Initiative. India should participate in the EITI++ Initiative.
- d. Proactive disclosure is legally required under the RTI Act, 2005 and the National Data Sharing and Accessibility Policy (NDSAP) 2012. Available historical information should be mandatorily made available online within a year. This would help identify other illegalities or evidence. This must be done in mission mode.

2) **A strong monitoring mechanism should be legally instituted in a coordinated fashion among the States and the Center.**

- a. The ICGLR<sup>84</sup> Regional Initiative against the Illegal Exploitation of Natural Resources (RINR)<sup>85</sup> has put in place an elaborate mechanism to manage

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<sup>82</sup> <http://eiti.org/>

<sup>83</sup> EITI++ factsheet is at

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conflict-prone minerals being mined and transported in the Great Lakes region of Africa (rare earths from Congo being the most prominent). This is being implemented in a coordinated way across multiple nations. The mechanism has a number of useful cutting edge ideas such as the system auditor and the real time open database. This can be the starting point for a pan-India mineral monitoring system.

- b. Full supply chain monitoring is required for imports and exports of minerals as well.
- c. Cutting edge monitoring tools such as drones, remote sensing, LiDAR, mobile weigh-bridges, traffic cameras and environmental sensors should be used to monitor the mineral chain in near real-time. This can be done at relatively low cost, and will have significant spin-off benefits to the economy. Further, since tipper trucks are multi-use and are required to be covered, all trucks that can be used to transport ore should be tracked by telemetry.
- d. The Ministry of Mines and the Departments of Mines in various states need to change their orientation and skills. Their objectives & organization must center on zero loss mining and detection of and recovery from illegal mining.
- e. In line with the Delhi HC judgment on audit of telecom companies, the CAG should regularly audit mining companies in order to ensure accurate amounts are paid as compensation for the mineral sold.

### **3) Detecting and prosecuting illegalities & recovery of amounts.**

Significant financial, analytical and legal skills are needed to investigate illegalities, apportion responsibilities to various parties, and to sue for recovery.

- a. Reward schemes should be legally instituted for information leading to recoveries.
- b. The Whistle Blowers Protection Act, 2011 should be strengthened to make it effective and implementable. Citizens should be rewarded as per provisions in other countries, thus providing them incentives.
- c. It must be mandatory to proceed under Sections 21(1) (criminal prosecution) and 21(5) (recovery of illegally mined ore or its value) of the MMDR Act for any instances of illegal mining.

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<sup>84</sup> International Conference of the Great Lakes Region

<sup>85</sup> <https://www.icglr.org/index.php/en/rinr>



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- d. Where substantive illegalities are found, the concerned mining leases must be cancelled as a matter of public policy under Rule 27(4A) of the MCR 1960.
  - e. Since corporations (and other artificial persons) cannot be jailed, more severe punishments need to be mandated for promoters, directors, and key officers.
  - f. There needs to be a “Fit and Proper Person” test for any entity taking up mining or natural resource activities. The test should include the entity, its directors and key officers, promoters and related parties. Offenders need to be banned from mining in India under Rule 26(4) of the MCR 1960.
  - g. Use of Aadhaar to ensure that each person involved can be traced – no benami or fly by night operators.
  - h. Beneficial ownership registers must be required.<sup>86</sup> SEBI has issued Guidelines on Identification of Beneficial Ownership.<sup>87</sup>
- 4) Some other control steps:
- a. Surprise checks to ensure that systems are not tampered with.
  - b. Systemic auditor to detect violations that may not be visible at an individual transaction level (colourable devices for example).
  - c. Periodic open social audits should be mandated.
- 5) A lot of illegalities are committed in the initial phases of mining. Here are some recommendations for plugging specific loopholes:
- a. Prior to an EIA commencing, people in the vicinity should be notified. The notification should report the exact nature of environmental information being collected so that the locals can corroborate the data and its collection.
  - b. All data collected and computer programs used to process the data should be placed in the public domain so that these can be checked for accuracy.
  - c. Gram Sabha approval should be made mandatory prior to mining.

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<sup>86</sup> <http://ukanticorruptionpledgetracker.org/pledges/public-central-register-of-beneficial-ownership/>

<sup>87</sup> SEBI has issued Guidelines on Identification of Beneficial Ownership. [http://www.sebi.gov.in/legal/circulars/jan-2013/guidelines-on-identification-of-beneficial-ownership\\_24206.html](http://www.sebi.gov.in/legal/circulars/jan-2013/guidelines-on-identification-of-beneficial-ownership_24206.html)

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## **M. Ethics in inheritance management**

A fundamental aspect of managing inheritances is that they need to be managed ethically. From this need, we must implement Free Prior and Informed Consent (FPIC) before mining. In 5<sup>th</sup> Schedule areas, prior approval of the PESA gram sabha must be mandatory.

Similarly, ethical investment guidelines should be considered for the investments made by the Permanent Funds. Norway’s Government Pension Fund Global’s ethical guidelines can be a starting point.<sup>88</sup>

India should consider a few additional cutting edge steps:

- a. Implement Natural Resource Accounting. This would provide a second level of guidance on whether our shared inheritance is conserved.
- b. Australia has been producing Intergenerational Reports, which provide a perspective for the next 40 years. The latest one is titled “Australia to 2050: future challenges.”<sup>89</sup> This is a practice for the nation to consider.
- c. As recommended in the Goa Guidelines 1988<sup>90</sup>, India should also consider creating an Ombudsman for future generations, emulating countries like Hungary.<sup>91</sup>
- d. India should join the Clean Trade campaign<sup>92</sup>.

## **N. Data for designing policy**

We presume the draft policy will be published for public comment. We would like to point out that Section 4(1)(c) of the Right to Information Act, 2005 provides that *“Every Public Authority shall publish all relevant facts while formulating policies or announcing decisions which affect public”*. At a minimum, the following data should be provided for aiding proper decision making by the public:

- a) Estimates of historical losses: Rapid estimates can be made from the information provided in MCDR Forms H1-H8 by mining leaseholders. This provides the mineral extracted, IBM prices provide the value. Royalty paid is provided.

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<sup>88</sup> <https://www.regjeringen.no/en/topics/the-economy/the-government-pension-fund/responsible-investments/id446948/>

<sup>89</sup> [http://archive.treasury.gov.au/igr/igr2010/report/pdf/IGR\\_2010.pdf](http://archive.treasury.gov.au/igr/igr2010/report/pdf/IGR_2010.pdf)

<sup>90</sup> The Goa Guidelines on inter-generational equity were adopted by the Advisory Committee to the UN University Research Project on 15 February 1988 in Goa, India. The committee that included Shri R.S. Pathak, who was the Chief Justice of India at that time.

<sup>91</sup> Technically, Parliamentary Commissioner for Future Generations. <http://jno.hu/en/>

<sup>92</sup> <http://cleantrade.org/>

*“We do not inherit the Earth from our Ancestors; We borrow it from our Children”*

Extraction costs and capital invested is provided. Using a conservative value for the cost of capital<sup>93</sup>, the total cost of extraction can be calculated. From this, we can derive the economic rent, and by subtracting the royalty paid, we can estimate the Loss. These calculations can be provided by year by mine, so that aggregation and analysis can be done at the mineral, state, or miner level. Efficiency metrics (cost / ton, price realized / ton) can also be calculated.

- b) Losses due to MMDR Amendment Act: While these losses arise from disparate sources, sufficient data exists to enable estimates. The IMF has a financial model, Fiscal Analysis of Resource Industries (FARI), which can also be used in such an exercise.
- c) Mineral inventory: A detailed mineral inventory must be published giving each ore body location and other details. Where these are within existing mining leases, this information should also be provided.
- d) Estimates of recoverable from illegal mining: The recent judgment of the Supreme Court in WP(c) 114 of 2014 has made it clear that mining without an environmental clearance or mining in excess of the mining plan is illegal mining, and the full value of the ore may be recovered. IBM has the extraction and mining plan data. The MoEFCC has the data around environmental clearances. A rapid study should be conducted for each lease, examining whether extraction was greater than the IBM sanctioned limit, and whether extraction took place while a required environmental clearance was not available. The value recoverable can also be estimated using the data reported in MCDR Forms F & H. All the required data is available with the Government of India. As Public Trustees, states should present their own analysis.

All the source data, calculations and conclusions should be made available to the public prior to asking for comments.

## Conclusion

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Minerals are a shared inheritance, our family gold. We are currently squandering it. The consequences aren't pretty. We have a civil war in Central India. Mining mafias have sprung up everywhere over sand. There is active connivance among miners, politicians and bureaucrats. And our children are losing.

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<sup>93</sup> We used 20% after tax return on capital

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The current review of the National Mineral Policy gives us a unique opportunity to leapfrog the rest of the world and institute a more moral mining policy, with state of the art controls and best practices in extraction. Let us be remembered as the generation that changed the course of history, not the one that destroyed the planet.