

Legal Issues for Exploration and Exploitations of Indian Ocean Resources: Considerations

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Introduction:

Developing Nations surrounding the Indian Ocean will continue to have significant increase in demand for metal (copper, cobalt, nickel and manganese), however, they may be unable to afford high price due to profitability margin sought by other supplier nations and companies to procure metal at higher prices. It is also to be noted that the Developing Nations surrounding the Indian Ocean companies have limited mining experience abroad, however, the recent explorations suggest that they can be encouraged to engage in high profit mining sectors in the world with the sovereign intervention and help. Developing Nations surrounding the Indian Ocean are experiencing a decline in the tonnage and grade of land-based nickel, copper and cobalt sulphide deposits which have significant adverse impact on its ambition to rapid industrialisation. Developing Nations surrounding the Indian Ocean are seriously considering initiating technological advancements for deep seabed mining and processing. Developing Nations surrounding the Indian Ocean in Asia do not have as yet any successful example seabed mining licences; however, recent licensing by Papua New Guinea to Nautilus Mining Company of Canada sets a good example them to take a public-private partnership approach to the seabed mining. Papua New Guinea gave deep seabed mining licence to Nautilus Company of Canada for territorial Bismarck Sea operations – prototype is available now. Based on the assessment of the licence and terms of contract between Papua New Guinea and Nautilus, few Developing Nations surrounding the Indian Ocean can develop their own model. This model shall consider various options: an exclusive licence to a foreign company or local company or a JV between sovereign and foreign company or a JV between local sovereign and local company. ISA has approved Plans of

Work for several companies, including Nauru, Tonga (PN) and China, Russia (PS). 17 exploration contracts have been already approved by the ISA. First PN exploration will expire in 2016 – plan of work or action is imperative.

Aims:

In view of the above background, this paper attempts

- 1.0. To outline the required legal and regulatory framework for the Developing Nations surrounding the Indian Ocean authorities.
- 1.1. To compare the existing framework to assess the compatibility with the proposed framework of the ISA.
- 1.2. To identify gaps and propose the way forward.
- 1.3. Developing Nations surrounding the Indian Ocean PN exploitation shall be based on the benefit of mankind as a whole and shall foster commercially viable and sustainable exploitation operations. The priority shall be given to local operators, even at the expense of higher investment and subsidisation to contribute to their capacity-building and reap long term strategic economic and security benefits for the nation.

Key Assumptions:

2.0. Gradual Approach to Exploitation

Developing Nations surrounding the Indian Ocean shall decide which option they will opt for:

- (a) relatively small but high-grade nodule areas with a rapid payback or

(b) a limited, but significant number of large and high-grade nodule occurrences or

(c) similar sized deposits but of relatively low grade –

These are three options, however, the available knowledge is limited within Developing Nations surrounding the Indian Ocean, therefore, a strategic priority will have to decide upon available and verifiable robust knowledge-base.

3.0. Whole of the Deposit Approach

Developing Nations surrounding the Indian Ocean may opt for the whole of the deposit approach which would include a comprehensive resources and reserve assessment of the proposed mining area, adoption of a sequential mining plan which will maximize reserve recovery, utilisation and metal recovery, provision for periodic review and updating of the mining plan and performance guarantee and failure to perform penalties with the latter escalating over time.

4.0. Regulatory Regime:

4.1. Due to abundance of land-based mineral resources and available regulatory framework, some Developing Nations surrounding the Indian Ocean can largely compare their existing land-based mineral resource regulatory framework to adopt with the seabed mining. It is important that they keep in mind the problems and new initiatives taken by China, the Russian Federation and Indonesia in particular.

4.2. Environmental issues, unique technical and logistical issues are important. However, these issues are mitigated because ISA will play the main role as the regulator.

4.3. What role and why Developing Nations surrounding the In-

dian Ocean need the ISA to play a specific role as the regulator needs to be deliberated at this stage *before other countries, especially China, Russian Federation and other developed states taking a lead*. It can be assumed that China will have supportive role towards the Developing Nations surrounding the Indian Ocean initiatives, however, unlike other areas of cooperation, China has direct economic interests in the Indian Ocean so Developing Nations surrounding the Indian Ocean need to be cautious in cooperation with China in this regard.

4.4. Developing Nations surrounding the Indian Ocean shall be ready with a predominantly statutory framework along with a limited standardized contract, detail site, contractor- and country-specific terms.

5.0. Environmental Issues

ISA is pursuing research and efforts on environmental regime. Developing Nations surrounding the Indian Ocean should proactively participate in this regime as the feedback from the discussions in the environmental groups will play a crucial role in developing the whole framework. Scientists and economists working in the field of ocean resources should be invited to participate and give input to the government on a regular basis. ISA has already identified specific key environmental issues which will be developed and included in the overall framework. ISA has collected enormous environmental data. Do Developing Nations surrounding the Indian Ocean have any position on these specific environmental issues? Whether Developing Nations surrounding the Indian Ocean have carried out internal assessment to see whether the analysis of the data and conclusions support their long-term interests?

6.0. Provisional Mining Licence

ISA has proposed the following elements for provisional licence:

- a. Technical, fiscal and environmental qualification of the proposed operator. Developing Nations surrounding the Indian Ocean shall ensure that these elements are based on the prevailing capacity of developing countries instead of adopting the model-based on the capacities of industrialised nations.
- b. Approved funding. These nations may consider inviting bid and provide funding.
- c. A prefeasibility study based on the contractor's previous exploration, transportation, processing and testing data, and analysis including an environmental impact assessment based upon the contractor's work during the exploration stage (while governmental institution may have carried out such study, it is imperative that more private actors are encouraged as government constraints and lack of vision may be some stumbling blocks). In any case, commercial private partners will play crucial role, so it is fitting into the scheme of current economic developments, that private actors, following due legal procedure, are encouraged.
- d. Plans of work
 - i. Plans for undertaking a detailed feasibility study based upon a pilot commercial site
 - ii. Expenditure schedules
 - iii. Development schedules
 - iv. Mining methods

- v. Production estimates for the pilot site during the term of the provisional licences and tenured mining licence
- vi. Environmental management plans including closure and rehabilitation
- vii. Transportation and logistical specifics (including accident prevention) for the operation
- viii. Performance assurances and guarantees
- ix. Government specific terms
- x. Training and CSR
- xi. Size and area of concession

Like ISA, Developing Nations surrounding the Indian Ocean would be able to determine whether based on the prefeasibility study, environmental impact assessment, economic analysis, they would be able to support the grant of a provisional mining licence to undertake a pilot commercial operation.

7.0. Tenured Mining Licence

7.1. Depending upon the success and effectiveness of the conclusions reached above, the next phase will be tenured mining licence which would be conditional upon;

1. Successful completion of pilot commercial study under provisional licence
2. ISA approval of a detailed bankable feasibility study and full EIA
3. Technical, fiscal and environmental qualifications of the proposed operator

4. Approved funding operation
5. Work plan including inter alia;
 - i. Expenditure schedules
 - ii. Development schedules
 - iii. Mining methods
 - iv. Production estimate for the tenured term
 - v. Environment management plan including closure and rehabilitation
 - vi. Transportation and logistics
6. Performance assurances and guarantees
7. Host and country specifics
8. Training and CSR
9. Size and area of concession

7.2. Developing Nations surrounding the Indian Ocean need to prepare a staged or phased licensing process including the prefeasibility study for a provisional licence to allow ISA to make an intermediate decision whether or not to allow a pilot project to fully demonstrate viability and safety, and provisional licence would provide an important measure of control and power to claw back the project, should unforeseeable problems arise, without having to suspend or terminate a full-scale mining project.

7.3. Licensing options shall include types of exploitation licensing such as production sharing and contractors of work and auctions for some blocks.

7.4. Impact of the international trade and competition law

needs a special study.

8.0. Fiscal Regime:

The following issues need to be addressed to put in place a proper fiscal regime.

- a. Setting of fiscal rates based on comparable land-based minerals
- b. Problem of identifying tax and cost accounting codes on which fiscal calculations can be made
- c. Concept that a simple system can be developed that does not burden the ISA or mining investors

9.0. Royalty Issue

Developing Nations surrounding the Indian Ocean shall decide upon a best royalty option from below or propose its own option for ISA consideration.

- a. Unit-based royalties based on units of volume or weight
 - b. Ad valorem royalties based on value of sales
 - c. Hybrid royalties
 - d. Profit-based royalties
- 9.1. Developing Nations surrounding the Indian Ocean need to take a call on which royalty approach they want ISA to adopt. ISA choice will be influenced by size and diversity of the mining operations and strength of the regulatory regime.
- 9.2. Question of division of profit and risk is equally important including resource rent questions about capturing windfall profits and rents in the name of social justice. Fiscal pack-

age should take care of these conflicting priorities.

- 9.3. The fiscal model shall be simple, equitable, transparent, defensible and responsive to change.
- 9.4. These nations shall work towards ensuring that while ISA receives its fair share of resource rent after deductions, their commercial policies are not subjected to unfair advantages by industrial nations mining companies nor they shall be too in favour of host mining companies as to attract legal suits at the WTO or under competition laws
- 9.5. While arm's length principle is important, developing nations shall closely monitor their national interests especially if they will agree with royalty-based resource rent capture scheme.
- 9.6. While preparing the fiscal regime for marine mining, issues such as royalty, concept of economic rents, effective tax rates will be important.

10.0. Future markets-Future Prices-Future Developments

As developing countries' demand for nickel, copper, cobalt and manganese are expanding exponentially, and unless land-based deposits are discovered, they need to develop appropriate economic incentive model till the time it can effectively start exploiting the deep sea based minerals.

11.0. Corporate Social Responsibility

11.1. The developing nations shall propose their own indigenous CSR model before industrialised nations impose models suiting their needs and interests for the deep sea bed mining. ISA model emphasises on specific positive social impacts and returns, and specific baseline financial

returns. ISA has prepared CSR model – Hybrid Social Business (HSB) on the basis of Lost Benefits which includes:

- a. Focus on sustainable development of deep seabed resources is essential to preserve the marine environment and to reduce poverty while meeting the return on investment requirements of investors.
- b. HSB is directly applicable to supporting the extant ISA endowment fund for collaborative marine scientific research.
- c. HSB has significant appeal to potential investors and shareholders who wish to invest in socially responsible corporations.

11.2. Although the model is claimed to be a win-win for ISA, industry and developing nations, a developing-country approach to the CSR/HSB is imperative. In particular, the CSR/HSB model shall have obligatory character instead of recommendatory nature which is widely prevalent in most international instruments.

12.0. Overall framework

1. **Organisational:**
 - a. Creation of internal mining inspectorate consisting of mining registry, compliance office, data and archive centre and inspector general office – this will be most important strategic unit within the ISA, thus, the countries shall play an active role in ensuring the composition, mandate, role and responsibilities, reporting mechanisms, overall accountability structure and rules of procedure of functioning of this unit

- b. **Permanent Committee:** for environmental rules, regulations and requirements, basically move from an ad hoc / standing committee to a permanent well-structured committee with liaison with the industry and stakeholders – the above observation (a) is also applicable

Study project: It is proposed to have a study specific to development of a set of unified and common operating procedures for the evaluation, licensing and monitoring PN, cobalt-rich manganese crusts and polymetallic sulphides prospecting, exploration and exploitation.

13.0. Research and study

13.1. The countries need to contribute to the development of the overall activities framework of the ISA in view of potential PN developers and member countries that will require establishing internal ISA structure and capacity to manage PN exploitation.

13.2. Taxation infrastructure needs to be prepared for incorporating rules, procedures and administrative staff, audits, legal decisions, etc. for determining project profits and ensuring resource development and financial flows. Developing countries' participation is imperative.

13.3. Framework to understand cost-benefit analysis to determine sensitivity levels for fees and costs associated with PN exploitation.

13.4. Additional framework studies required:

- a. Monitoring and compliance
- b. Resource recovery, utilisation and valuation
- c. Creation of implementing rules and regulations for legal regime

- d. Structure of an environmental mining plan
- 13.5. Organisation of definitional meetings for
- a. Pilot mining
 - b. Prefeasibility study metrics
- 13.6. The developing nations shall consider establishing **ISA National Authority** under the overall supervision of the Ministry of Earth Science with representatives from Defense, External Affairs, Law, Navy, Industry, Environment, Commerce and Finance Departments.
- 13.7. The Mining Tax Code applicable for land-based mines needs to be studied in context of mining in the deep seabed as an initial step on an urgent basis

14.0. PN Development

14.1. The developing nations also need to ascertain in concrete terms the challenge of three issues namely – how much is available (resource recovery), when it can utilise resources (when) and resource sustainability. This is important to keep in mind while developing a long-term permanent sustainable program.

14.2. **Resource recovery:** Viable and Bankable PN Mining Enterprise is a long way to go. In fact, ISA assumptions are based on the very limited number of areas that have explored in detail, large areas with limited exploration and the vast majority of the area remaining largely unexplored in terms of nodule distribution and grade (it may be noted that even CCZ impressive statistics are being classified as hypothetical and undiscovered resources with unknown economic potential).

14.3. Compared to land-based viability, very small percentage of the licence area will have commercially viable reserves.

14.4. Unlike land-mineral resources, PN exploitation and resource recovery will proceed sequentially. This is important reminder while developing a gradual approach framework.

14.5. Mining companies will be tempted to exploit selective high grading individual mine sites – this shall be avoided. Instead, the countries shall assess and offer mining companies on the basis of the “whole deposit mining plan” that can ensure long term and sustainable exploitable nodules in various grades over the life of a defined mine area.

14.6. How to achieve the above? Mining companies shall provide plan that includes

- a. Validation of measured and indicated reserves
- b. Evaluation of inferred resources
- c. A defined sequential mining plan for all reserves that includes maximization of reserve utilisation
- d. Metal recovery
- e. Periodic review of the mining plan with special emphasis on recovery optimisation
- f. Performance evaluation
- g. Failure to perform penalties
- h. Escalation of penalties with non-performance

14.7. Resource conservation plan is essential.

15.0. Legal Framework

15.1. **Fundamental assumption:** Investors can only operate within the economic reality of externally set commodity pricing and they require internal rates of return sufficient to justify the

exploitation operation. While mining companies of advanced countries can afford relatively longer break-even period, heavy subsidisation of local mining companies is must. Hence, a proper subsidy structure has to be kept in mind throughout the progress. Certain assumptions of ISA merit political and strategic critical review eyes as these assumptions are tilted in favour of industrialised nations.

15.2. While land-based mining experience will be very useful, the primary differences need to be kept in mind for the ocean bed mining – international legal instruments will play more crucial role compared to domestic laws.

15.3. Various political and security risks need to be kept in mind while preparing the PN mining operation plan developed by foreign mining companies.

15.4. UNCLOS is largely silent on the legal regime between a mining company and sponsoring state. Thus, *travaux préparatoires* of UNCLOS as well as AGXI – 94 will be a useful legal guide in understanding the intentions of the developing nations.

15.5. Issues such as double taxation treaties, *in rem* over the PN resources jurisdiction, overall state's jurisdiction over mining operations, state certification, which are typically applicable on land-based resources will be applicable for these countries in a different version, though.

15.6. The developing countries shall start delineating the scope of overall ISA authority regarding the PN exploitation regime.

15.7. The developing countries shall start preparing the regime which would include regulations, contracts, licences and inter-linking relations between them.