NEWS FEATURE

SOLWARA 1 Project:
A long term disaster for PNG

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HOWEVER, the research and studies carried on the designated site were conducted in a limited time period(from 6month to 1-3 years) to tests the methodologies and technologies.

In addition numerous desk top studies and models were developed as well to understand the real situation on sites.

Hence the EIS reports does not provide enough understanding on the merit of this Phase 1 to be awarded to the company.

The discussions below are not exhaustive on the EIS report but some of our queries and concerns must be noted:

a) Technology Applied

i) The technology used and applied are indeed new for such application and these have never been trailed in such conditions especially the oceans/seas. Using oil and gas technologies and applying these in the tropical ocean environment is questionable and must be monitored very careful on its application and suitability.

ii) No mitigation strategies were discussed in terms recovery and lost of the tools and technology in the oceans.

b) Water Quality and Modeling

Some of issues raised includes:

i) Poor understanding of water column biodiversity from the surface to the bottom and outside the designate area.

ii) Insufficient data collected in the area to support the modeling of the water quality and its understanding of social and health impacts.

iii) The application of the model is questionable in this area and new methodology will need to addressed.

iv) Inadequate assessment of risks associated with sediment and waste rock disposal, toxicity of the dewatering plume to deep-sea organisms, effects of increased light and noise in the deep ocean environment, and potential accidents on seafloor equipment or surface vessels.

c) Seafloor Product tools

The following are some of the issues:

i) This is a new technology for cutting and crushing rock material into small, sandy, gravel and silt collected and pumped into the ship above the site. We will have no idea with size of rock materials being dispersed and left at the bottom of ocean.

ii) The monitoring and evaluation of such tools operation and its impact is not included.

d) Oceanography and Meteorology

Some of the issues include:

i) Some of the monitoring and studies on the site for oceanography but needs a long time period to understand the currents, temperature, salinity etc and especially how the sediment load and waste is transferred in the ocean and will end up on the coastal areas and reef systems.

ii) Understanding of the storm surges, currents and up-welling events, El nino, pressure and other climate drivers in the Bismarck is critical for mitigating any potential disaster when shipping the ores between the oceans and Rabaul ports.

iii) A 24/7 weather monitoring and early warning station and strategy should be developed for the site and the surrounding communities and shipping groups.

iv) Results of oceanography and physio-chemical research for the last 5 years in the area and Bismarck and Solomon seas indicate the currents are indeed very fast as compared to EIS results.

e) Waste and Sediment quality

Some of the concerns includes:

i) The miningactivities will produce approximately 2 millionstonnes (8um size) of ore each year for the 3 years and the company has not identified where it will refine the ore.

ii) Most importantly, the toxic waste must be treated before it is returned into the ocean? Where is the treatment of the toxic waste performed?

iii) The large volume of fine Sediment and watered waste approximate 8um size will be deposited back into the bottom of the sea after the ore has been processed . The impacts of these very fine sediments and dissolved chemicals will impact the biodiversity and organism and the sediments can travel through the Bismarck seas , breeding grounds of fisheries, reefs and finally end up on beaches and coast areas of New Ireland, New Britain and Bismarck sea Provinces.

iv) Regarding impacts to the nearshoreecosystem, one of the greatest risks from the project is the potential loss of tow or power of an ore shuttle barge in route to Rabaul (the EIS projects 3-9 barge trips per week, with 6,000 tons of toxic ore onboard each transit), or of one of the 25,000 ton bulk ore freighters (3-6 trips per month from Rabaul)

v) Waste spillage and drifting ashore spilling its toxic cargo and fuel onto the coastal reef system and potential for the whole Bismarck seas/provinces.

iv) Thewastewas not considered at all in the EIS. Much of the EIS is simply too general in nature to determine impacts, and many of the mitigations proposed rely upon Environmental Management Plans and procedures that have yet to be developed by Nautilus

f) Biodiversity and biodiversity.

In this area the following were noted:

i) The short term work and research conducted in the PNG waters and Bismarck Seas and with this work reveal that most species discovered at vents are new to science, and in our biodiversity and fisheries sectors deep-sea habitats.

ii) Extensive patch of productive vent habitat, including tens of thousands of vent chimneys, killing virtually all of the attached organisms will be destroyed.Mining is expected to alter venting frequency and characteristics on surrounding seafloor areas as well, thus affecting the biodiversity of a much broader scale than just the mined site.

iii) Studies of the taxonomy and genetic relationships of macro-invertebrate species found at Solwara 1, South Su (upstream about 2 km), and Solwara 8 (downstream about 45 km) have not been completed, and thus the degree of genetic variability and endemism of organisms between sites is not yet known

iv) Biological and statistical assessment on the data and area is incomplete.

v) A number of hotspot biodiversity for the world designated in the areas next to the site is not assessed for community long term benefit.

vi) It is likely that the project would result in severe, prolonged, and perhaps region-wide impacts to a globally rare and poorly understood biological community, and it is clear that the EIS does not adequately assess many of these impacts. Further, the benefits to local people or the economy of PNG seem disproportionately low compared to the scale and risk of the project.

g) Research Period on the site.

Some the issues not included are:

i) The research understanding of the solowara 1 site and time frame is too short (1-3 years) to assess the viability of such project on the site .

ii) Not much studies were conducted around the site to better understand the comprehensive risk to the project and the marine resources such as fisheries, reefs, and coastal communities. While Nautilus conducted some extensive studies of the deep-sea benthic (bottom dwelling) communities at the site, no systematic study was conducted on the deep-sea pelagic (water column) community that would be impacted immediately overlying the seafloor.

iii) The need for long term research and monitoring must be developed to support PNG policy development and provide useful information in confidence on the new technology and tools used on and around the site.

The Solwara 1 EIS makes an initial contribution to deep-sea science understanding, it is clear that the EIS does not present sufficient information to which the PNG government can effectively judge the project's expected impacts. Thus the EIS is judged as not fit-to-purpose. Many risk contingencies are poorly analyzed, some are not analyzed at all, and many of the baseline studies necessary to understand potential impacts have yet to be completed.

In addition it will be important to receive the Nautilus Company Environment Management Plan (EMP)urgently for review and evaluation. The EMP must contain important mitigation strategies, especially developing comprehensive hazard and risk management in the issues and concerns outlined such as developing strategies for sediment waste and tailing disposals, accidental spills on ships, social conflicts between communities and Nautilus workers.

It is imperative that the National government and the provincial governments gets its house in order first by developing its deep sea mining laws and its offshore policy before exploiting its natural resources in a sustainable approach in the oceans. The application of precautionary approach be applied to such project.

Given the issues raised, we recommended that the government of PNG and the important stakeholders delay the project implementationforthe following reasons:

1.The Phase 1 EIS (EIA) is flawed and more research and development on the technology and methodologies be explored to improve the understanding of the deep sea mining and oceans resources.

2. No health risk assessment wereundertaken and evaluated and for the benefit of our people we can say NO to the project as a NO Regret Option

3. While the Project could provide a gross almost $1 billion USD in its 30-month lifetime, it expects to provide only $41 million in total taxes and royalties to the government, a $1.5 million development fund, and a few dozen jobs at most to PNG nationals. The national impact is thus negligible(as compared to the mining venture on land).

4. PNG Policies and Laws must be developed for Oceans resources urgently

5.Develop a PNG Scientific Industrial Research Organisation to be the technical advisory teamandcontribute to all science base projects for the government and its stakeholders

6. Set up a multi disciplinary committee to review the Solowara 1 project and make a recommendations to the government for a decision.

Finally, the of managing this challenge in the long term is through informed leadership, good governance and state of the art applied mitigation strategies.