APPENDICES

With the Advisory Review of the SEA for Transport Options for Corridor Sands Limitada
- Mozambique -

(appendices 1 to 5)

APPENDIX 1

Advisory Review of the SEA for Transport Options for Corridor Sands Limitada

- Mozambique -

FROM : DPCA-ZAMBEZIA   PHONE NO. : 002584214570   Oct. 08 2002 04:50PM P1

REPÚBLICA DE MOÇAMBIQUE

Ministério Para a Coordenaçõ da Acção Ambiental

Direcção Nacional da Avaliação do Impacto Ambiental

Fax

Fax nº + 31302304382.   **Data: 08 / 10 / 02**

The Netherlands (Holland)

To: Dr. Reinoud Post
Executive Secretary
Comission for EIA in the Netherlands.

Ass.: Cooperation Between NCEIA and National Directorate of Environmental Impact Assessment – MICOA

Dear Post,

Following your mission to Mozambique we would like to request your support for the EIA analisys during the period November 2002 and June 2003 of two mega Projects namely hazardous waste facility and Port Development facility in a proposed tourism area. We expect your envolvement at the beginning in the scoping phase and later in the EIA revison, including site visit.

We request your first presence in Mozambique in the week 46, and the others will be followed along the mentioned period.

I look forward to your prompt reaction.

Yours Sincerely
Felicidade Munguambe
National Director.

C . C.: **Mr. Felicio Fernando** – IIPP project leader
Mr Inácio Bucuane – EIA Head of Departament.
Mr. Eric Van Woerkom - LTA

Av. Acordos de Lusaka 2115 - C.P. nº 2020. Maputo. Telefone nº 466050, Fax nº 465846 - 466050

APPENDIX 2

Project information: On 16 September 2002 the Ministry for Co-ordination of Environmental Affairs of Mozambique (MICOA) environmentally licensed the establishment and operation of a heavy mineral sands mining activity in Chibuto in the Gaza province of Mozambique. The activity includes the establishment of a high-voltage power connection, the realisation of a rail link to Matola harbour and the establishment of a bulk cargo facility at the Matola harbour. The proponent of the activity is Corridor Sands Limited, a Maputo (Mozambique) based 100 % WMC Resources Limited (Australia) owned mining company.

The proposed mining activity includes in the first phase the establishment of three smelter furnaces. Production is scheduled to start in 2007. Production forecasts foresee export of 375,000 tonnes of Titanium slag, 195,000 tonnes of high purity Iron (in pigs), 30,000 tonnes of Zircon and 12,000 tonnes of Rutile per annum from 2007 to 2010. In the second phase, it is planned that the number of furnaces will increase to 10 and annual export will increase to 1,000,000 tonnes of Titanium slag, 520,000 tonnes of high purity Iron, 110,000 tonnes of Zircon and 32,500 tonnes of Rutile in 2019. In addition, up to 200,000 tonnes of Anthracite will be imported per annum as well as diesel fuel.

As an alternative and preferred option for export of the products, Corridor Sands Limited now proposed the realisation of a private Alternative Export Facility (AEF), later renamed Chongoene Export Facility (CEF) composed of:

- A 65 km long private haul road from the smelter at Chibuto to Chongoene beach
- A private bulk cargo facility (Materials Handling and Storage Facility) behind the frontal dunes at Chongoene beach and
- A trellis structured dedicated jetty, built perpendicular to the coast line, which would be 1,2 km long and approximately 20 meters above mean sea level.

Corridor Sands Limited is in favour of the CEF which, as it indicates, would:

1. generate substantive savings in capital expenditure and operational costs of transporting and exporting its products and required inputs;
2. facilitate further expansion and minimise risks of down-time;
3. enhance the company's control of the operations.

(letter to MICOA of 16 January, 2003)

Categories: DAC/CRS codes 21010 transport policy and administrative management, 21020 Road transport, 21030 Rail transport, 21040 Water transport and 21061 Storage.

Project numbers: Netherlands Commission for EIA (NCEIA) 051

Procedural information:

Request from MICOA:	8 October 2002
Visit to Mozambique:	5 – 11 February 2003
Visit to Mozambique:	6-10 October 2003
Draft advisory review of draft SEA submitted:	14 November 2003
Draft advisory review of final SEA submitted:	14 July 2004
Draft advisory review of EIA for CEF submitted:	16 July 2004
Advisory review of final SEA submitted:	17 September 2004

Significant details: In February 2002, MICOA makes it clear to the NCEIA that both the rail link option and the alternative transport options are open. The NCEIA has the opinion that considerations and choices of a strategic nature, based on forecasts for economic development of the southern Mozambican region and sound national economic analyses should underlie and substantiate the choices between the transport options. Hence, the NCEIA suggests addressing the issue in a two-step approach. The first step would be a strategic environmental assessment (SEA), to facilitate making the fundamental choice between both transport options. This step will also help in defining the optimum corridor for the transport option from a national development and environmental policy point of view. The second step is implementing EIA at project level to support decision-making on the selected transport option's detailed routing, design, and environmental (biophysical, social and economic) management aspects. If the decision is to develop the rail link as already licensed, no second step will be needed (see also appendix 4, 0302). MICOA has decided to take both steps simultaneously: going through a process of SEA with all relevant stakeholders and, at the same time, allowing WMC to prepare a comparative EIA study for the 'rail link' option and the 'alternative export facility'. As the SEA process might lead to a decision that could pre-empt the 'alternative export facility', MICOA informed WMC that it prepared this EIA study at its own risk. The EIA study is due in February 2004. In October 2003, MICOA has requested the Commission to review the draft of the SEA study. The NCEIA reviewed the SEA process on transparency and participation and the draft SEA on contents. The NCEIA concluded that the process had been transparent and participatory, although a stronger coordination with and participation by decision-makers would have strengthened the process. The SEA report did not include the substantive background studies, which would have given the SEA the required credibility. Notably, the NCEIA indicated that financial and economic background studies -for the options that the SEA proposes for the short term- should have been included in the study. The SEA did contain a sector by sector scan for environmental due diligence requirements. The NCEIA reviewed this scan and as a result formulated their recommendation. On 7 June 2004 the NCEIA received a pre-final SEA, which included the comments of stakeholders but did not include the financial and economic background studies.

Composition of the working group of the Commission for EIA:

<u>Guidelines stage:</u>
Mr. K.J. Beek (chairperson)
Mr. W.G. Been
Ms. S.F. Brownlie
Mr. C. Burden

Ms. S.B. Lane
Mr. J.D. Meindertsma
Mr. S.G. Nooteboom

SEA review stage:
Mr. K.J. Beek (chairperson)
Mr. W.G. Been
Mr. J. Boroto
Mr. S.G. Nooteboom
Mr. P. Tarr
Mr. M. Volgers

Technical secretary: Mr. R.A.M. Post

APPENDIX 3

Background notes on SEA-related financial and economic issues

General

- The proposed mining activity of CSL may have significant positive and/or negative socio-economic impacts on the regional and national economy of Mozambique. As the Worldbank outlined in their CAS of 2000[1], "large investments exploiting the transportation corridor are under active consideration by international companies. Here the challenge will be to develop linkages, especially to the service sector, to maximise the benefits to the poor; this is likely to occur primarily through spin-off effects, such as employee training, connected infrastructure developments and improved Government tax revenues that can be channelled into poverty-reducing activities";

- In the "Treasure or Trouble? Mining in developing countries"[2] it is mentioned that badly managed impacts on the environment or social fabric or society can reflect negatively on economic parameters countrywide. It is thus important to weigh the benefits against the risks and costs surrounding the industry's operations, and to mitigate any negative impacts. Especially with "early mining movers" governments might find themselves unprepared when negotiating contracts with mining investors. In this respect it is worth to mention the "Mineral Resources Management Capacity Building project"[3] of the World Bank, which became effective in October 2001 (US$ 18 million);

- Concerns as to whether mining may benefit or hinder a developing country in its quest for economic growth and prosperity, have led to different hypotheses. In Africa, the economies of mineral-rich countries may take a totally different course (Botswana and Namibia versus Sierra Leone and Congo), but if all goes right, mining induced growth may contribute to poverty reduction, partly by catalyzing improvements in physical infrastructure;

- Mines are often seen as the key economic engines of the communities in which they are located[4]. Evidence to date shows however that in many countries the positive impact of foreign direct investment on local communities is often extremely limited due to the lack of automatic spill-over effects. However, with appropriate local economic development (LED) instruments, mining projects could bring more than their own direct employment to a community. By voluntarily participating in or even driving a LED program in a community, mining companies and other local stakeholders can work together to ensure that the local population, including the poorest segments, can benefit from the presence of new investments and share in the growth potential of the local economy. Importantly, LED strategies and programs are increasingly been seen as an entry point for national level reform especially in countries with weak national government and limited private sector development. For the Mining Industry more specifically, a successful LED program would improve community and employee relations, develop supplier linkages, reduce dependence on the mine for local economic

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[1] "Memorandum of the President of the IDA and the IFC to the Executive Directors on a Country Assistance Strategy of the World Bank Group for the Republique of Mozambique", June 2000

[2] "Global Mining. Treasure or Trouble? Mining in developing countries." Worldbank and IFC, 2000.

[3] "The World Bank in Mozambique" by Mozambique Country Team, February 2003.

[4] See www.worldbank.org/ogmc/mining_led.htm

wellbeing over time as well as bring substantial benefits in terms of reputation and good corporate citizenship;

- In the study "Economic linkages between South Africa and Mozambique"[5] the economic impact of FDI (Foreign Direct Investment) on the host economy is analysed. It raises questions about the sustainability and long-term desirability of an economic growth strategy in Mozambique that is dominated by the mineral-energy complex, as Mozambique becomes excessively vulnerable to the volatile behaviour of the world market;

- In the study "Dirty Exports and Environmental Legislation"[6] it is found that more stringent environmental standards reduce exports of metal mining and appears to support the industrial flight (pollution haven) hypothesis.

SEA-specific

- The S(E)A report deals with the various transport options for transporting the mineral products by either road or rail from the mine to (possibly dedicated) port facilities. This particular project is complicated by the fact that this infrastructure is an integral part of the mining project: no infrastructure, no mine. This implies that if stakeholders participating in the SEA have a mandate to prefer the zero option (alternative 7), it affects the whole project. Making such decisions requires proper understanding and supporting studies of costs and benefits of the project, not only from the perspective of CSL, but equally from the perspective of Mozambique's economy as a whole.

- The latter study is usually carried out by making use of econometric models as developed by Government agencies (in the Netherlands e.g. CPB). The NCEIA recommends to investigate if these type of models are being exploited in Mozambique. Worth mentioning is the T(hreshold)-21 model of the Carter Center, as it links national development strategies with economic, social and environmental considerations in one, single computer model. For Mozambique, this econometric model is available since April 2003[7]. Equally, the use of national or regional I/O (input-output) tables or SAM (Social Accounting Matrix) may be of assistance to evaluate the direct and indirect economic impacts[8]. In the Netherlands, for large infrastructure projects the OEEI (research programme on the economic effects of infrastructure) is taken as a reference for carrying out cost-benefit analysis;

- The SEA provides a broad qualitative analysis of the various options on the various sectors of the economy, but a quantitative analysis is lacking. The non-availability of studies covering both financial and economic evaluations, describing and quantifying

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[5] "Economic Linkages Between South Africa and Mozambique", a study for the Department for International Development of the British Government-South Africa Office. August 2002. Carlos Nuno Castel-Branco.

[6] "Dirty Exports and Environmental Regulation: Do Standards Matter to Trade", Development Research Group, World Bank, March 2002.

[7] An overview of the T-21 model can be found in "The T21 model and National Development Strategies" by Roger D. Norton. The Carter Center. Global Development Initiative. November 2002. A short overview for Mozambique can be found in "Guide to Navigating the T21-Mozambique Model", April 2003. See also "A CGE model for Mozambique", developed under the project "Macroeconomic Reforms and Regional Integration in Southern Africa", 2000.

[8] See e.g. "Social Accounting Matrices for Mozambique 1994 and 1995", Trade and Macroeconomics Division, International Food Policy Research Institute, USA. July 1998.

the economic effects/impacts of the CSL-operations on the regional and national economy of Mozambique, not only limits the scope and validity of the results of the S(E)A, but equally the degrees of freedom and negotiating position of Government of Mozambique. For CSL, the studies will understandably and rightfully result in a cost and risk minimisation exercise (including resettlement, compensation measures etc.). For the Mozambique Government the fact that it is unclear how much transportation and handling costs CSL is able to absorb without jeopardising the financial viability of the whole CSL project, implies a weak negotiating position.

- From the available documents on the financial viability of the project, CSL states that the project generates a very competitive financial rate of return: Phase I ±19% (with current spot price of chloride slag of 410 US$/ton) and Phase II ±23%. A change in OPEX and CAPEX of 10% leads to a 1% absolute change in FIRR[9]. As such, a possible position like "no road, no mine" would appear to be somewhat exaggerated in case it would be brought up in the discussions;

- Given the circumstances, the preferred long-term alternatives (option 3 and 4) seem to fit GoM's strategy and World Bank's Development Objective as formulated in the CAS (e.g. ROADS III project).

- For the short to medium term, the financial and economic evaluation in the SEA report is apparently reduced to a comparison of the Base Case/0-variant situation (the railway option) with the road option as the Project Case situation. (Since it is understood that the GoM has already approved the concession, a Base Case situation of "no mine" seems not a valid one. SEA Option 7 (The Zero Option) seems therefore a "past station";

[9] "Corridor Sands: A Titanium Slag Producer for the 21st Century", EGM/WMC Resources, May 2003.

APPENDIX 4

Background notes on Limpopo Hydrology

General notes on Limpopo floods

- The water resources of the Limpopo River are shared by Botswana, Mozambique, South Africa and Zimbabwe with a total catchment area of more than 400000 km^2 (of which approximately 20% is in Mozambique).

- The area of interest is located in the Lower reach of the Limpopo River, downstream of the confluence with the Elephants River which is a major tributary shared between Mozambique and South Africa. Whereas no dams are built along the main Limpopo River, several dams have been built on its tributaries in Botswana, South Africa and Zimbabwe. Massingir Dam on the Elephants River is located in Mozambique and has a storage capacity of 12000 millions m^3. The low flows in the area of interest are characterised by the releases from this dam to supply the Chokwe irrigation scheme (close to 30 000 hectares) and to reduce salinity levels from the tidal flows in the Limpopo River Estuary. The river flow diversion into the Chokwe irrigation scheme is at Maccaretane barrage. This is a long weir consisting of automatic balancing gates with a total storage capacity of approximately 4 million m^3. This structure also serves a double bridge for a road and a railway line from Zimbabwe to Maputo. This railway is part of the proposed option 1 for transporting mineral products from the proposed Chibuto Mine.

- Upstream of the confluence with the Elephants River, the river flow of the Limpopo is not perennial but is extremely variable with incidences of summer floods such as those experienced in February 2000. The ability to regulate such floods is a function of their magnitude and the preceding conditions in the catchment as well as in the dams. The February 2000 floods found the Limpopo River catchment saturated and most of the upstream dams at near full capacity. The ability to retain the floods was therefore limited. Massingir Dam, though the most downstream dam received between January and March 2000 a total volume inflow of 9600 millions m^3 or 6 times its storage capacity. Some upstream dams received similar volumes within a few days.

- The impact of the February 2000 flood on the Lower Limpopo River was exceptionally severe and made headlines worldwide. It is however of worth to note that the Maccaratene structure with the railway and road bridges survived the floods. The railway line and the road were, however, damaged. It is considered that repairs to the bridge itself would have been more expensive and time consuming if it had been affected. For the rest of the road and railway infrastructure which was damaged, repair works took time to be started.

SEA specific notes on Limpopo floods

- It is sufficient to state that equal consideration should be given to all options in terms of risk of flooding but that those options which are not likely to be operational in the near future (Options 3 and 4) should be given less attention given their irrelevance for the immediate needs of the proposed mining operations.

- It is makes sense to assume that the risk that an investor in the Chibuto Mine is willing to take with regard to transport infrastructure and flooding is commensurate with the expected life time of the mine. Thus, the desired return period of any de-

sign event should be at least of the same order of magnitude as the expected life of the mining exploitations. The problem, however, is that even when the expected life of the mining operations is known, it is difficult to determine with certainty the design flood to be associated with a selected return period. This is due to the lack of adequate hydrological information as well as to the confusion that resulted from the February 2000 floods with regard to methods previously agreed upon for determining flood levels and their return periods. At a conference held in May 2000 by the South(ern) African community to take stock of the lessons emerging from the Februay 2000 floods, consensus was reached that it was no longer possible to determine with certainty whether the floods experienced were of the order of 1:100 or 1:200 year return period flood. The damages caused to roads and bridge infrastructure defied all designs and predictions. Flow gauging infrastructure was equally destroyed and for the few structures that survived, their recording capacity was exceeded.

- Against this background, it is fair to assume that any flood protection measures with regard to all transport options will be based on the best engineering judgement considering factors such as the cost and time that would be required to repair any infrastructure that is likely to be damaged by a flood. In this regard, the SEA report does not demonstrate that such an analysis has been carried out to objectively favour one option against the others. While the risk of flooding is not the only criterion used, it requires equal consideration for all options, especially those entailing crossing or using the Limpopo River, from the most upstream to the most downstream options. These comprise options 1 and 6 in the immediate future and Options 3 and 4. It is appreciated however that the two latter would be longer term solutions as proposed in the compromise solution which is a combination of option 2 and 4. Finally, the comparison would only revolve around Options 1, 2 and possibly 6. For Option 2, while no crossing of the Limpopo River will take place, the impact of floods of the magnitude of those experienced in February 2000 should be used, considering both flood and cyclone risks for the terrestrial and marine infrastructure.

- It would be objective to expect that options 1, 2 and 6 would be equally analysed with regard to the risk and consequences of flooding. Thus, an inspection of the proposed dedicated 63 km road from Chibuto to Chongoene should indicate the likelihood of flooding at the crossing of a small tributary flowing towards the Limpopo River to assess the risk of disruption of transport that it poses due to possible flooding.

- Such an investigation would not only consider the risk of flooding caused by river flow but also that resulting from raised sea levels in the event of a cyclone from the Indian Ocean (as was the case in February 2000) with the possibility of not only affecting the proposed jetty but also reaching upper reaches of the Limpopo River Estuary. The combined effect of floods and sea levels should be investigated for such an event. A thorough assessment of the risk associated with the jetty in terms of coastal engineering should use an event of a comparable magnitude.

- Though the credibility of the proposed compromise option is not questioned (nor is the process leading to its selection), more supporting investigation as above advocated would have provided greater comfort. It is also appreciated that investigations addressing some of the above with specific reference to Option 2 have been undertaken. The relevant reports were not made available, however.

- It is hoped that a survey of the geographical area that was affected by the February 2000 floods has been or will be undertaken so as to provide an objective mean of assessing their impact on any option.

APPENDIX 5

Background notes on environmental precautions sector-wise

1. TOURISM SECTOR

Issues

- Mozambique has a dedicated Tourism Ministry and tourism is regarded by government as a key sector for the future development of the country. Moreover, the country has excellent potential in terms of its beach/seafood/cultural product, which is highly sought after by regional and international tourists. Mozambique has comparative advantages over its competitors in this product range (i.e. Mauritius, Seychelles, Comores and East African coastline), since travelers from the Gauteng area (the main regional catchment) have easy and cheap access by road. However, there are few direct flights from Europe, so aggressive marketing is needed to attract overseas tourists. The South African market is also important since it is relatively insensitive to SARS and international terrorism-type factors, though it generally represents low spending, high impact, self drive visitors. Mozambique's tourism product has the potential for diversification with the recent initiatives of trans-frontier conservation with South Africa: the country can now sell "beach and bush" packages. Cooperative marketing and transfontier packaging are very much in line with SADC's tourism vision as well as the ideals of NEPAD.

- Thus, it is fair to conclude that Mozambique's tourism industry is entering a rapid expansion phase. Whilst this is good for growth, investment and employment, it is also characterized by a certain degree of land grabbing, ad hoc development, unhealthy opportunism, exploitation, minimal local ownership and possibly very high leakage[1]. This is largely because there is as yet no clearly articulated national vision for tourism and no policy or strategy to guide the investment and development process[2]. There is therefore a danger that the government and local communities will receive far fewer benefits than they should and operators might receive concessions far in excess of their real needs. There is also a danger that high volume, high impact projects (e.g. golf resorts) will become established in prime areas that should rather be developed as lower impact nature-based products.

- In addition to the Ministry of Tourism designating the Xai-Xai to Chongoene Area and the coast of Inhambane as a priority area for tourism investment, recent studies (e.g. 2003 Lorton Report on the second phase of a tourism sectoral paper for the Limpopo valley SDI) have stressed the need (*inter alia*) for better planning and for protecting prime tourism areas against negative impacts from other sectors. In particular, mining appears to be the most likely sector to compete for land and resources in the Gaza coastal area. The desperate need for investment and development means that government is highly unlikely to choose one sector over another, preferring instead

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[1] Revenues leaving the country, both because some payments are made outside, but also because so many products (ranging from building materials, fittings, linen, foodstuffs, etc.) are sourced from outside.

[2] On pg 17 of the SEA, the KPMG 2003 report is described as the "National Tourism Strategy for Mozambique" – it is not clear whether this is in fact a strategy formally adopted by government or a consultants recommendations. The absence of references (in my copy) makes it difficult to clarify this.

to try and accommodate both, even though there may be high opportunity costs. It is difficult to expect the authorities to respond differently under the circumstances.

- The SEA correctly identifies option 2 as being the least beneficial option for the tourism, agriculture, manufacturing and service sectors, whilst options 4 and 3 would have a positive impact in the long term. However, the negative impacts on biodiversity (mostly during construction) would be higher for options 4 and 3, than for 2.

- It seems unrealistic to assume that the implementation of option 2 will result in a loss (opportunity cost) of 16 000 potential jobs by the year 2021.

- Inadequate data has apparently made it difficult to conduct a rigorous cost-benefit analysis on tourism vs. mining within the SEA, or on the opportunity costs of the phased development approach (i.e. mining → rehabilitation → tourism) in the "conflict" areas. This is unfortunate given that the RTZ concession will probably require a similar analysis (and trade-offs) in the not-too-distant future.

Mitigation

- As part of its conditions of operation (translated into an Environmental Management Plan), the mining company could be expected to set aside funds for restoration and re-development, thus contributing directly to alternative future land use and sustainable development. This kind of strategic thinking, which was encouraged by the MMSD[3] initiative (launched at the World Summit for Sustainable Development in 2002) should have been better developed in the SEA, but there is still some (albeit much less) opportunity to explore these options at the EIA level for this and future mining projects. It is thus surprising that the SEA states that government, at the end of 20 years, "compensates the mining groups for infrastructure" that they have built, but will no longer use because of the phased abandonment of option 2 in favour of 3 or 4 (pg. 37). It seems illogical that government should pay for an asset that probably has already been paid off and which is in any case at the end of its design life. Instead, it would be logical requiring the mining company to decommission (maybe remove) the infrastructure. There are not many examples in southern Africa of new tourism facilities rising out of the ashes of abandoned mining infrastructure (though roads are perhaps a different story).

- It has been demonstrated in similar habitats (northern Kwazulu-Natal coast) that areas mined along the beach can be rehabilitated quite successfully, and that opportunity costs can be minimized through careful planning, responsible management and vigilant monitoring and enforcement. In other words, a thorough process where proponent, State and other stakeholders (including community) are fully involved throughout, could enable a "cradle-to-cradle" scenario, where a previously mined area is rehabilitated and eventually developed for tourism.

- These kinds of brown-field areas are the ones that could be transformed into golf-course resorts or products that depend less on pristine habitats. An open question is whether it is realistic to expect these "mega-projects" to wait for 20 years until transport option 2 is phased out in favour of option 3/4. Another option for these areas, is to earmark them for private beach-homes, since there is clearly an escalating demand for seaside properties and young, long term investors might be willing

[3] Minerals, Mining and Sustainable Development – this was a global study (with a strong southern African component) that focused on the role of mining in sustainable development.

to purchase a "degraded" property at a reasonably discounted price today, knowing that it will only become available in 20 years time.

2. AGRICULTURE SECTOR

Issues

- The expectation that the agriculture sector will expand because of the growth of the tourism sector, is possibly over-exaggerated (para 5.3, pg 45). There is little evidence elsewhere in southern Africa of this link, except for small scale farming projects that supply fresh vegetables to lodges. By contrast, in the Mpumalanga area adjacent to the nearby Kruger National Park, the vast majority of agricultural activities are mega-projects (e.g. sugar, timber) that have no bearing on the tourism industry. It would have been interesting (in this SEA) to reflect on Mozambique's agriculture policy and land resources policy, and to see whether there really are opportunities for strategy wrapping between these sectors.

Mitigation

- There is probably no need in the mining-EIA to design specific mitigation measures to minimize negative impacts or maximize benefits of agriculture (unless the mine will displace current agriculture projects). However, in the bigger scheme of things, developing infrastructure to the mutual benefit of mining and agriculture should be possible. Furthermore, the tourism industry does have the ability to absorb a variety of locally produced products (though not vast quantities). These could range from fresh fruit and vegetables, meat, and a variety of added-value items (e.g. jam). Many of these can be supplied by small-scale operators.

- It is understood that there is currently a major initiative to produce rice and maybe other products, on a 30 000 hectare estate close to the mine. Surely this presents an opportunity to combine forces in the improvement of rail and road infrastructure. This needs to be pursued further.

3. HEALTH SECTOR

Issues

- HIV/AIDS is correctly raised as a major issue that needs to be addressed, both for the mining industry and the transport sector. It is well known that mines (which often attract migrant labour) can result in the spread of sexually transmitted diseases (SDS's). The same is true for road transportation routes, which, during both construction (through workers) and operation (through truck drivers) facilitate the spread of SDS's.

Mitigation

- There are many examples of good practice in southern Africa where mines have initiated very successful "good health" campaigns, and in some cases, the level of HIV/AIDS incidence at the mines are less than half of national averages. The MMSD initiative can provide advice in this regard.

- Roads provide a good opportunity for health awareness creation (through the use of bill-boards).

4. ENVIRONMENT, NATURAL RESOURCES (INCLUDING FISHERIES) AND CONSERVATION SECTOR

Issues

- Whilst the analysis of "environmental considerations" for option 2 (really broad-level mitigation measures – pg 49) is good, there seems to be no mention of the impacts of the bulk-storage facility behind the dunes. It is understood that this will be a large area (10 hectares or more), and will certainly require vegetation clearing and thus biodiversity loss. It is understood that the coastal bush is an important habitat for many species of wildlife.

- Similarly, the environmental impacts relating to the jetty (construction and operation) need much more attention. This will obviously be addressed in the EIA, but even at the strategic level, important issues such as turtle conservation, sandy beach ecology, vulnerability of shrimp stocks to pollution and possible impacts on sediment movement, need to be highlighted.

Mitigation

- The expectation that land previously used for mining and/or mining related activities, will be "restored to its original state" (second bullet, pg 48) is perhaps unrealistic. In practice, this is virtually impossible to achieve. The term used in most EA reports, is that the area will "be restored to as near as possible its natural state". Even then, this expectation can be extremely onerous on the developer. It might be more sensible to decide on a secondary use for that land, that does not require such remarkable restoration.

- It is surprising that the burden of monitoring jetty operations, beach dynamics and the elaboration of an oil spill contingency plan (first bullet, pg. 44) rests entirely on the State. It is normal practice these days that these functions are internalized by the developer (as part of their EMP). The State should check up from time to time. By externalizing these issues, the proponent would effectively be subsidised by the taxpayers, and the real costs of pursuing this option are not being accounted for. MICOA informed the NCEIA that the law prescribes that the proponent performs monitoring. The SEA does not make that sufficiently clear.

- It might be possible to design the jetty in such a way as to cater for the small-scale fisheries sector. If this is the case, then the benefits of implementing option 2 can be enhanced.

5. SOCIAL AFFAIRS, EMPLOYMENT AND POVERTY ALLEVIATION SECTOR

Issues

- It is understandable that, at SEA level, there will be insufficient data, and it is expected that these gaps in data will, where appropriate, be addressed at the project EIA level. However, even at SEA level, there should have been a better idea of people likely to be displaced by options 3 and 4, than "a substantial number" (pg. 54). Involuntary resettlement is so sensitive, that decision-makers need a reasonable level of detail for such important issues than has been presented in this report. The proposed follow-up SEA must address this issue in detail.

Mitigation

- The key to mitigating social impacts is the involvement of affected people throughout ALL stages of the decision making process. It is understandable that this might not happen when options are being discussed at strategic level, but the authorities are advised to initiate discussions with communities as soon as possible. In this regard, the discussions should include negotiations (not just information exchange), so that displaced people have better opportunities for livelihood security than is the case with the no-project alternative.

- It is also important to guard against the temptation of short term mitigation (once-off compensation), since experience elsewhere has shown that this is usually squandered. Long term, sustainable solutions must be sought.