AFRICAN DEVELOPMENT BANK

SASOL PETROLEUM INTERNATIONAL
Johannesburg, Republic of South Africa

NATURAL GAS PROJECT

EXECUTIVE SUMMARY OF THE ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT

OPSD
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Project Name: Natural Gas Project
Country: Republic of Mozambique

1. INTRODUCTION

1.1 The Natural Gas Project is a pioneering undertaking led by SASOL Petroleum International in a joint venture agreement with ENH (Empresa Nacional de Hydrocarbonetas, wholly-owned by the Government of the Republic of Mozambique - GOM) and the Republic of South Africa (GOSA). The project will bring natural gas to South Africa during the first half of 2004, along with significant benefits to both countries. It will consist of a major gas field development in Mozambique; a pipeline of some 865 km to Secunda in Mpumalanga, South Africa; the conversion of Sasol’s current gas pipeline network; and the supply of natural gas to industries in South Africa, including Sasol’s factories.

1.2 Sasol (South Africa), which was established in 1950, is a world-leader in the commercial production of liquid fuels and chemicals from coal and crude oil. It is listed on the Johannesburg Stock Exchange (SOL) and on NASDAQ (NASOY) in New York, and has a market capitalization of USD 4.6 billion and a turnover of USD 4.1 billion per annum. The Sasol Group comprises diversified mining, fuel, chemical and related manufacturing and marketing operations, as well as technology development, oil and gas exploration and production. It also has interest in crude oil refining and liquid fuels marketing and operations in 21 countries on six continents. As a leading player in the South African economy, Sasol supports pro-active environmental management and clear accountability. It is a signatory to the Business Charter for Sustainable Development of the International Chamber of Commerce and to the Responsible Care initiative of the international chemical industry. Being a signatory enables Sasol to coherently address environmental challenges and also compels its divisions to implement and maintain the requirements of the ISO 14001 environmental management standard. Four of the company’s divisions have already complied with these requirements and have been certified to this standard. ENH, for its part, was established in 1981 and its activities include exploration, development, production, transportation, transmission and commercialization of hydrocarbons and its derivatives. GOM through CMH, subsidiary of ENH, will take up 25% equity in the pipeline project. GOSA gas also an option of taking 25% equity.

1.3 The project has been covered by detailed Environmental and Social Impact Assessments (ESIA) for each of its components. Mark Wood Consultants (South Africa) and Impacto (Mozambique) have been appointed to coordinate the team of international experts assigned to carry out specialist studies. All studies were prepared in accordance with the requirements of the Mozambican and South African environmental regulations, and in conformity with international practice and requirements of financial institutions. This report summarizes the findings of the ESIA, the legal and policy frameworks under which the assessments were undertaken, a description of the project environment, an analysis of project alternatives, an evaluation of potential impacts, and information related to the Environmental Management Plan (EMP). It also provides some insight into the consultative process and resettlement issues.
2. PROJECT DESCRIPTION AND JUSTIFICATION

2.1 The project involves the extraction of natural gas from Temane and Pande gasfields and the transportation of the gas via underground pipeline to Secunda in S. Africa (see Figure 1) at a rate of 122 million gigajoule per annum (m GI/a). The gas will be distributed to Sasolburg and other end users from the Sasol Secunda plant. This project, which consists of five distinct but integrated and mutually dependent components, entails the development and production of gasfields in Mozambique (Upstream); the construction of a Central Processing Facility (Processing) at Temane; the construction of a 865 km gas pipeline from the gasfields to South Africa (Pipeline); conversion of Sasol’s existing petrochemical plants from coal to gas; and gas distribution network (Downstream). Funding from the African Development Bank (AfDB) is sought only for the development of the central processing facility (CPF) and gas pipeline to Secunda in S. Africa (520 km in Mozambique and 345 km in RSA). The pipeline starts at the CPF located near the Temane and Pande gasfields on the east coast of Southern Mozambique and the pipeline route follows predominantly a straight line, crossing the Limpopo River upstream. From there it follows an almost straight line to where it traverses the Incomati River and then turns west to the Ressano Garcia/Komatipoort border post between Mozambique and South Africa. From this point the pipeline leads to Sasol’s plant in Secunda where it will link up with the existing Sasol Gas distribution network. Construction of the gas pipeline requires the digging of a trench of about 1 m to 1.5 m wide to a depth of about 2 m below the surface. The pipeline will be 660 mm in diameter and will be installed in the trench, usually with about 1m of cover above it. The trench will be backfilled and topsoil stripped from the trench is reinstated over the backfill in order to rehabilitate the area.

2.2 The proven gas reserves in Temane and Pande fields are estimated at 2.5 trillion cubic feet (TCF) or 2,700 millions of Gigajoules (MGJ), with an estimated potential of 3.2 TCF. The gas volume is estimated at a 90% confidence level and is expected that to have a lifespan of approximately 25 years. Temane will be developed first and 18 production wells capable of producing 20-40 million cubic feet per day (mmcf/d) will be drilled, while Pande reservoir will be developed at later stage, with more drillings expected to increase gas reserves. The wet gas will be gathered through in-field flowlines to the Central Processing Facility for cleaning by removing liquids. The liquid generated is collected and put through a three-phase separator, which yields three products (gas, water and hydrocarbon condensate). The gas that cannot be incorporated back into the processing system or used as fuel gas in the process because it is at a high pressure will be flared, while the water produced will be reinjected in the gasfields. The hydrocarbon condensate will be used as a fuel and as an additive during refining of crude oil and sold at the CPF to customers in both countries.

2.3 The gas will be purchased at the pipeline inlet under a Gas Sales Agreement (GSA) that is adequate to supply 120 MGJ per annum for a period of 25 years. It is designed to deliver 122 MGJ/a without compression, of which 120 MGJ/a will be transported to Secunda in RSA and 2 MGJ/a to Mozambique at no cost from 5 take-off points along the pipeline route within Mozambique. The increasing gas demand in South Africa will make the construction and expansion of the gas pipeline a viable venture.

2.4 The project will provide strong economic impetus for both countries, and at the same time stimulate industrial growth, especially in Mozambique, and would provide significant economic benefits for the two countries. The capital investment in the development of gas fields, processing plant and construction of the pipeline will directly result in higher economic growth for the country. Indirectly, the availability of natural gas may lead to
growth in existing industrial business or new projects, which will further add to wealth creation in the country. Increased economic activities resulting from the gas project will create direct and indirect job opportunities. During operations, the project will employ a workforce of more than 400 people on the Mozambican side. More job opportunities can also lead to higher economic growth and through additional purchasing power in the form of contractors, sub-contractors, during the construction of the pipeline and services. In addition, new growth is expected from industrial areas where gas will be available and where more jobs will be created.

2.5 The GOM will also benefit from higher tax revenue earned by companies involved in the gas project. The revenue from royalty, profit share, production bonuses and corporate taxes is estimated at USD 2.2 billion to GOM over the life of the project. Royalty payments will be based on gross revenue generated in the gas fields for the term of the gas supply agreement and will be 5% on gas sales and 8% on crude oil from condensate. The local income tax rate is 35% for the gas field portion of the project, while through 25% shareholding in the project the government will also share in the after-tax revenue of the
project. Upstream exploration will ensure that reserves will be made available to other projects, such as Maputo Iron and Steel (MISP). In addition to the gas, crude oil (condensate) will be produced at a rate of about 2,000 barrels per day or 730,000 barrels per annum, which could lead Mozambique to become a net exporter of hydrocarbon liquids. Other multipliers as a result of the project are expected. With regard to employment more about 900 permanent jobs in both countries will be created over the project life. The gas project will also constitute a substantial addition to the country’s infrastructure, providing access roads to the pipeline, ancillary infrastructure (roads to the gas fields, potable water, power supply, de-mining of existing roads), and increased exploration activity. The project will also have the following significant economic benefits for the Republic of South Africa in the form of (i) economic growth; (ii) additional government revenue; (iii) development and diversification of S. African energy network; (iv) opportunities for black empowerment; (v) strategic diversification of energy carriers (reduction of South Africa’s coal dependence); and finally, (vi) substitution of fuel coal and partially oil with gas, which is a bonus for the environment.

3. POLICY, LEGAL AND ADMINISTRATIVE FRAMEWORK

3.1 The Ministry for the Co-ordination of Environmental Affairs (MICOA) of Mozambique approved in 1995 a National Environmental Management Program (NEMP), which is a policy document outlining the priorities for environmental management and sustainable development in the country. According to the Environment Act (Law 20/97 of 1 October 1997), any activity with a significant impact on the environment requires an environmental license. The Environment Act (EA) also states that the environmental license shall be subject to specific regulations on the process of Environmental Impact Assessment study (approved by decree N0. 76/98 of 29 December 1998). In terms of environmental protection and safety, the Petroleum Act (No3/2001 of 21 February) requires that holders of exploration and production rights must conduct petroleum operations to comply with environmental and other applicable impact studies. The government agency responsible for the management of the environment is MICOA, which has an environmental impact assessment department.

3.2 In South Africa, the National Environmental Management Act (Act 107 of 1998) provides for co-operative environmental governance by establishing principles for decision-making on matters affecting the environment. The Act provides for the right to an environment that is not harmful to the health and well-being of S. African citizens, equitable distribution of natural resources, sustainable development, environmental protection and the formulation of environmental management frameworks (Government Gazette, 1998). Furthermore, the Environment Conservation Act (Act 73 of 1998) and the regulations concerning EIA, require that any transportation of dangerous material must be subject to an EIA conducted by independent consultant. The responsible government authorities are the Department of Environmental Affairs and Tourism (DEAT).

3.3 The environmental regulations approved so far, and published in the official Gazette, explicitly state that environmental impact assessment studies in the natural resources industry shall be subject to special regulations. The regulation enforces that the proponent must design an Environmental Management Plan after the approval of the EIA report and implementation. MICOA and the DEAT of South Africa are capable of undertaking environmental audits and inspection during the construction and operation of the pipeline and the central processing facility. These EIA reports are in accordance with the Environmental Laws of Mozambique and RSA and meet international standards and requirements of the AfDB and the World Bank.
4. DESCRIPTION OF THE PROJECT ENVIRONMENT

Mozambique Section

4.1. The climate in the project area is sub-tropical with a hot wet season and warm to hot dry season. Most of the area in which the gasfields and the CPF are located and the area in which the pipeline traverses consist of clay/loam soils and do not support significant agricultural activities. The hot summers and in some areas mild dry winters tend to be limiting factors for some crops and the hot and dry winds reduce yields by causing a physiological moisture imbalance when the plants cannot cope with excessive evapotranspiration. In the face of these adverse conditions, small-scale farmers usually cultivate the lowland areas, while upland areas suffer from soil water deficits, which occur throughout the year. The agricultural sector in the greater study area, like most of the country, comprises two farming systems, namely, the family farm sector and the commercial sector. Agricultural practice consists of subsistence (family farm sector) rainfed farming (food crop production and agro forestry); irrigated cash crop production (improved family farm sector and commercial sector); the fuel wood and charcoal production, small-scale and commercial livestock production systems, wildlife utilization, protection and conservation of natural resources, fishing and gathering of local natural resources for some trade in these products.

4.2. The majority of the people living in the districts traversed by the pipeline route rely on subsistence agriculture (food crop production) and smallholder cash crops (from cashew nut and coconut trees, which are traditionally family property) provide the major direct sources of cash income in the rural areas. The commercial sector associated with intensive agricultural production makes use of irrigation and other farming inputs to insure high economic returns in areas of unreliable rainfall. Because of the dependence of agriculture on soil quality and water resources, there is a correlation between population distribution or settlement and the major landuses in addition to socio-economic infrastructure such as roads, schools, health centers, and other public facilities. Households are also concentrated along the main river valleys and their tributaries and close to existing infrastructure in the area such as villages and farms.

4.3. There is no large-scale permanent surface water bodies in the project area, and vegetation is predominantly woodland. Two bands of sand dunes define the coast – the first a narrow unvegetated dune belt at the shore and wide vegetated stable dune belt. The weak water retention capacity of these sandy dunes results in the occurrence of only littoral thickets and forests. There is a relatively diverse range of fauna in the region. Hunting has led to a decline in the larger mammals, but the bird life is abundant and diverse. There are no formal employment opportunities for local residents. Some of them are self-employed in the informal sector, but the majority of the population is unemployed and involved solely in subsistence activities, such as agriculture and fishery.

South African Section

4.4. The length of the pipeline in the S. African side is 345 km and traverses five physiographic regions, namely, highveld, upper escarpment, lower escarpment, plains, and Lebombo Mountains. The project area falls in the summer rainfall region of South Africa. In the Highveld frequent severe frosts occur from April to August, while the upper escarpment is warmer, with less severe frost. The river valleys are drier and warmer than the maintain tops. The lower escarpment is hot while the velds have been transformed by cultivation and the remaining grassveld is used for cattle and sheep grazing. There are rivers and wetlands, rare plant species, mammals and birds and fish in this section of the study area. There are also
nature reserves, heritage sites, mining and agricultural activities. Mixed farming occurs in the area and high agricultural potential exists in the Lower escarpment.

4.5 The primary land uses are agriculture, game farming, eco-tourism and mining. Land use is largely determined by land capability, which is defined by physical constraints. Subtropical fruits (mangoes, paw-paw, nuts and bananas) are grown in the valleys. Sugar cane is the most important crop crown in the lowveld. Furthermore, commercial forestry occupies large areas of the Upper and Lower Escarpments. The timber is used for building, mining, pulp and other products.

5. PROJECT ALTERNATIVES

5.1 One of the objectives of the ESIA was to examine and compare alternative pipeline routes. A number of alternatives for the pipeline routes and corridors in both countries were investigated. The emphasis of the ESIA was therefore based on investigating and evaluating the environmental impacts of the construction and operation of the CPF and the pipeline on current land use practices, river crossings, settlement areas and heritage sites, etc. The location of theCPF and the pipeline route election has undergone a series of refinements from the initial phase of the ESIA. Some forty changes to the pipeline routing have been recommended based on the EMP. Sasol has agreed to the rerouting and its implementation, while the GOM and GOSA have approved the final route.

5.2 In a “No Action Option”, the abundant gas reserves will remain untapped and both countries and communities in the project area will forego the positive impacts of the project. The availability of abundant local supplies of natural gas in Mozambique provides an effective additional energy source for South African and Mozambican markets. A secure supply of natural gas will also provide Sasol greater feedstock flexibility and the use of environmentally friendly source of energy compared to coal-based gas (synthetic fuel). The lack of opportunities in the project area, particularly in Mozambique, and the absence of an effective conservation network have, in fact, caused a number of serious impacts on ecosystem functioning and biodiversity from current land use. Such an option is, therefore, neither desirable nor viable.

6. POTENTIAL IMPACTS AND MITIGATION MEASURES

6.1 Negative impacts

6.1.1 The negative impacts can be divided into construction and operational impacts of the CPF and the pipeline. Though there are a number of negative impacts, most of them are LOW to NO significance after mitigation. The proposed river and wetland crossings are all considered acceptable in principle, subject to the implementation of a series of specific management requirements during construction of each crossing. Despite some negative impacts, the expectation of a positive outcome is high. The local community places emphasis on the potential for the project to contribute to development in terms of access to employment, opening of access roads, building of infrastructure, supporting local business and possibly leading to new business opportunities.

6.1.2 The pipeline will traverse soils over much of the route that are moderately to highly susceptible to erosion. However, management of these soils is feasible as long as the potential problems are correctly handled and, if necessary, chemically treated in order to encourage the re-establishment of ground cover. Soil management is a key consideration in the construction contract. About two thirds of the habitat impacted by the pipeline will, however, be
unaffected. The other third has already been transformed principally because of bush clearing and subsistence agriculture. The transformed areas are widely distributed along the route. Bush clearing is done both for the purposes of arable agriculture and for the manufacture of charcoal. Temporary habitat loss during construction will be 0.02 percent with one exception in the first 80km of the route from Ressano Garcia, where the loss would represent 0.18. The significance of direct habitat loss is considered low because the areas are small in relation to the total area of similar available habitat and most of the transformation is not permanent.

6.1.3 There are, however, significant issues related to sensitive and threatened plant communities that warrant particular attention in the final routing of the pipeline and the management plan. This species is not threatened plans, but it is an important commercial hardwood in Mozambique and is under local pressure as a result of harvesting for roofing timber and other purposes. Nonetheless, the direct impact can be minimized by small adjustments to the route of the pipeline. While the managed direct impact on Ironwood and other forest species will be small, there is concern that the access created by the cut line for the pipeline could encourage increased harvesting at unsustainable. Management of the impact will require systematic monitoring by the pipeline company during the course of normal helicopter maintenance and pipeline safety surveys, as well as an agreement with Government concerning the procedures to be followed in the event that illegal commercial harvesting becomes evident. In this regard, Sasol will assist GOM to improve capacity to manage and monitor hardwood harvesting near the pipeline. Impact on the hydro-dynamics of these systems is possible if the natural sequence of the soils in the pipeline trench is inverted. Careful management of soils and their replacement in the trench can avoid this problem. The risk of pipeline construction to animal species is generally negligible.

6.2 Positive Impacts

6.2.1 The seismic exploration and the pipeline construction will begin with a landmine hazard assessment and clearance that will be undertaken along the seismic lines, pipeline route and other areas that are to be accessed. Both assessment and clearance will be carried out in accordance with international standards and in co-operation with the national office for landmine clearing in Mozambique. Sasol does not anticipate that the construction of bridges, fords and associated major earthmoving works at stream crossings will be necessary. It is furthermore proposed to conduct construction works during the dry season when ephemeral wetlands and pans are most likely to be dry or can be crossed. Water wells will be drilled to provide water supply to personnel and following the completion of the seismic and pipeline operations, the wells will be equipped with hand pumps and left for use by local inhabitants.

6.2.2 Most of the local socio-economic effects of the project will result from the direct impacts of jobs available during the construction period. There is presently no certainty about the length of the contract period and the number of Mozambicans that will be employed on the gasfields development, CPF and pipeline, but a good estimate is in the order of more than 400 workers. Wages earned will strengthen food security for the families of the workers for this period. Induced impacts, caused by local spending of income earned directly or indirectly from the project will improve the low levels of economic activities in the areas affected. Some goods and services required by the construction could be supplied locally notwithstanding the low levels of commercial activity in the affected area. Local entrepreneurs will supply agricultural products and accommodate visitors.
6.3 Mitigation Measures

6.3.1 The most significant mitigating measure has involved rerouting the pipeline where warranted to compromise between environmental, cost and engineering requirements. The risk to threatened plants and animal species, as well as archeological sites, have been avoided by slight adjustments to the route. Issues that are construction-related are addressed by incorporating systematic, comprehensive environmental management practices during the design, tendering, construction and post-construction phases of the project. An environmental officer is to be stationed on site for the duration of the construction contract to monitor the compliance of the contractor with the EMP. Overall, with necessary management, all potential risks associated with the project can be minimized to levels acceptable by international standards.

6.3.2 As regards malaria incidence, an integrated malaria prevention programme has been developed to safeguard both employees and surrounding communities. Likewise, to reduce the risk of spreading HIV/AIDS and other communicable diseases, Sasol has developed a work place policy with respect to management of such risks. It includes awareness education, a stigma free environment with respect to diagnosis, and the prohibition of sex workers at the construction camps. In terms of acoustic impact resulting from the CPF, fans have been designed to reduce noise emissions. Good housekeeping, on the other hand, has been recommended to ensure that treated effluents cause no risk or nuisance to the biophysical environment.

7. ENVIRONMENTAL HAZARD MANAGEMENT

7.1 The pipe design, routing and construction comply with internationally accepted practice in order to make use of leading edge international knowledge and lessons learned and to reduce risks. An impressed current cathodic protection system (CP) will be installed to protect pipeline and underground piping systems against internal and external corrosion that would lead to rupture. There are no major environmental hazards to manage; however, possible effect of pipe rupture due to or sabotage can be high. Mitigation involves the application of (i) high quality surface coating protection that offers good insulation between the pipe and surrounding soil, and (ii) cathodic protection. With a CP system, a direct electric current, which too low to be a threat to human or animal life, is induced into the pipe at intervals to maintain a soil pipe potential. Corrosion is thereby prevented effectively. Moreover, other facilities will be installed to allow future connection of pig launching/receiving facilities (pigging stations) along the pipeline, as required.

7.2 Emergency shutdown valves and statutory valve stations will be installed along the pipeline, based on risk assessment studies carried out as part of the ESIA. To safeguard the public, employee, and the environment against injury or damage after commissioning of the pipeline, a comprehensive program based on international and South African experience will be implemented. An Abandonment Plan for submission to the regulatory authorities, at least three years ahead of abandonment, has also been prepared. The appropriate authorities and the laws that must be complied with shall be those applicable at the time. The Environmental Management Plan has also provided for hazard management programs in the form of various training and awareness programs, emergency preparedness, and environmental accident management. The probability of gas leak is small and ecological risks associated with the failure of the pipeline during operation are considered negligible.
8. ENVIRONMENTAL AND SOCIAL MANAGEMENT AND MONITORING PLAN

8.1 Environmental Management Plans (EMP) have been developed for all project components to ensure that the environmental controls, intended to minimize the negative and enhance the positive outcomes of a project, are implemented at each stage of its development. Each EMP details “who does what, when, how, why and where” with respect to environmental management and also sets the objectives and targets according to which this element of the project will be monitored and audited. In the case of large development proposals, such as the Sasol Temane and Pande Gas Fields, separate EMPs have been developed for the design, construction and operation of the project. The Design EMP consists of specifications for the investigations necessary to (i) verify specific impacts of the project, where these were uncertain and were flagged for further assessment in the EIS; (ii) improve the design, where possible, to meet the required environmental standards set for the project, without incurring unreasonable cost; and (iii) increase the level of detail so that the environmental requirements of the design can be accurately priced by the construction contractor. The Construction EMPs are developed as the basis for managing the activities of the construction contractors with respect to the impact of their activities on the environment. These documents consist of a set of specifications intended as a legal adjunct to the main specifications in the engineering contracts. The Construction EMPs also contain requirements for compliance monitoring of the performance of the contractors. The Commissioning and Operational EMPs provide the tools for managing the operating impacts of specific project components. These plans each deal with individual elements of the plant (eg: air pollution management, liquid effluent management, hazardous waste management) and will be implemented within the framework of an Environmental Management System such as ISO 14001. The plans will guide the management all of the operating impacts of the plant, including continuous/intermittent and direct/indirect biophysical and social impacts over the life of the project. The Decommissioning EMP will be undertaken in the last five years of the life of the project.

8.2 However, to avoid relying on ad hoc strategies to reduce impacts, emphasis will be placed on the implementation of Environmental Management Systems (EMS). These provide a structured environmental business approach to dealing with the short, medium and long-term environmental management requirements. Most of Sasol's South African operations comply with ISO 14001, which is the best recognized of the international Environmental Management Systems. This standard will be implemented on all of Sasol's Mozambique gas field and pipeline operations as well. The cornerstone of EMS is a commitment to an ongoing cycle of management and improvement on the basis of a defined corporate environmental policy that ensures corporate support of overall environmental protection, the prevention of environmental pollution and the management of social impacts throughout the organization's sphere of influence.

9. PUBLIC CONSULTATIONS

9.1 The broad objective of the Public Involvement Process (PIP) was to provide authorities, as well as interested and affected parties (IAPs) with the opportunity to identify issues, concerns and opportunities regarding the proposed Natural Gas Project. To insure that all IAPs were properly informed and consulted, an exhaustive process of public consultation and participation was followed. Documentation on the project and its impact was made available for public perusal and comments at appropriate venues, such as town halls, public libraries, local authority buildings and Sasol offices. This process was supported by public meetings, which were advertised in the local media to ensure a wide attendance base.
Concerns raised both at these meetings and written responses to the project documentation, as well as information arising out of this process were used to prepare the final ESIA. The process has been in accordance with the regulations on ESIA procedures for both countries.

9.2 The public was invited to get involved in the project as early as the scoping stage. The objective was to inform interested parties about the project, explain the ESIA process, gather comments, suggestions, concerns, criticism, and especially, to establish a communication channel with the IAPS. Public consultation for the scoping stage of the gasfield development, central processing facility and the pipeline was undertaken in July 2000 and represented the first component of the public participation process for the entire ESIA. Introductory meetings were held with key authorities at the national, provincial, district and village levels. During these meetings and workshops, stakeholders were identified and an initial IAP list including NGOs was developed. The information gathered from these meetings contributed towards developing the terms of reference for the more detailed specialist studies on the natural and social environment. All issues and concerns that were raised during the scoping process were used to develop the terms of reference.

9.3 During the specialist studies phase, consultation with affected parties also formed a major component of the social research that was undertaken as part of the social impact assessment. This research focused on the socio-economic impacts on local communities, and data gathered using participatory, individual and group interviews, and key informant interviews. The main thrust of this aspect of the public involvement process was at the local and district level. Some of the pertinent issues raised during this phase included, among others, health, social benefits, economic benefits, preservation of the ecosystem, risks, territorial planning (land use), and land concession, etc.

9.4 When the draft ESIA were completed, copies of the reports were submitted to the authorities and made available for comments to any other interested and affected parties. As part of the public involvement process during this review period, the consultants undertook a “road show” during which the results of the ESIA were presented at a number of workshops at the national, provincial, regional and local level. All the comments were incorporated in the final report and submitted to MICOA and South African Department for Environment Affairs and Tourism in order to conclude the ESIA studies.

10. Resettlement and Compensation

10.1 A Resettlement and Compensation Plan (RCP) has been established, based on World Bank guidelines, Mozambican and South African law and procedures, and precedents established for other projects in Mozambique and South Africa. The procedure incorporates objective assessment (pre-resettlement and/or compensation investigation and analysis to determine the nature of each particular case), community-based decisions (consultation with affected person and communities, and post-disruption support (post-resettlement and/or compensation support to ensure sustainability of actions taken). Post-resettlement and/or compensation support to ensure that the actions taken are sustainable is part of the procedure. Such actions will include social investment measures and ongoing monitoring and evaluation of the resettlement and/or compensation process.

10.2 An estimated 57 rural dwellings are within the 30m wide construction zone where resettlement will be required in Mozambique. This is a conservative estimate based on analysis of the aerial photography. Most of the affected dwellings can be avoided by minor adjustment of the route during detailed planning. Resettlement will be undertaken where the affected land use is within the 30m-construction area. Where resettlement occurs, the affected parties,
together with the relevant tribal administrative authority and Sasol representative, will decide on appropriate replacement structures and transitional support. Replacement land will be determined and allocated in accordance with GOM procedures. Resettlers will move into replacement housing prior to demolition of old houses. Affected graves will be moved and reentered at sponsor’s cost and in accordance with the requirements of affected party and tribal authority. If the replacement-housing model is implemented, then it is likely that local people will perceive this impact positive.

10.3 On the South African side of the pipeline, Sasol has had a continuous input on the route planning of the pipeline section, relating all information and concerns addressed by property owners to all parties. Major concerns include rehabilitation of the servitude rights, usage and maintenance of roads, future erosion, and loss of agricultural land. The route is broadly acceptable to the majority of landowners affected by it. Out of a total of 256 landowners, only four are unwilling to allow the pipeline pass through their land. These concerns have been addressed by slight adjustments to the route or by other mitigation measures during construction. A credible independent agent will undertake on-going monitoring, evaluation and review of the resettlement and compensation process.

10.4 Compensation will be paid as result of loss of crops/income-earning potential. The affected party, the tribal authority, the administrative authority and Sasol will determine the damage caused and the value of the loss. This will carried out in accordance with the established resettlement and damage compensation procedure and agreed formulae and price. Resettlement and compensation decisions are made in consultation with community representatives after taking into account the compensation requirements as identified. Cash compensation, replacement of lost property (including land, livestock and accommodation) and support such as crop starter packages and food support will be components of compensation packages. The success and effectiveness of the implementation of the compensation procedures will depend to a considerable degree on the effectiveness of the communication between the project companies, local chiefs, government authorities, project’s contractors and involved individuals.

11. CONCLUSION

11.1 The ESIA studies undertaken have provided a clear enough understanding of the impacts to support a positive decision on the project. Overall, the ecological issues resulting from the construction and operation do not represent a fatal flaw to the project. The social impacts on the local populous will primarily be due to their resettlement and a change in the social structure in the regions through which the pipeline traverses. These impacts can be mitigated against and do not represent a serious impact, if the resettlement and compensation plan is adequately implemented.

11.2 The CPF, pipeline and other facilities will be constructed on sound engineering, accepted standards and economic principles in accordance with international and local guidelines and regulations. The pipeline development plan also takes cognizance of the ESIA’s and the resulting EMP’s and requirements to optimize the economic utilization of petroleum resources and infrastructure. An occupational health, safety and environmental plan, outlining the policies, procedures and standards, have been developed and will be implemented. Furthermore, comprehensive risk assessment was carried out and the findings incorporated in the EMP to ensure effective preventive measures. Training of personnel working on and operating the gasfields, CPF and the pipeline will be given due attention. All significant negative impacts can be managed cost effectively and are not enough to prevent the project from proceeding.
11.3 Finally, the gas project is an entirely indigenous initiative that has been conceived locally. By strengthening the links between South Africa and Mozambique, regional trade, economic integration and stability will be enhanced. The involvement of both countries in this cross-border public-private partnership shows the significance of the gas project for the region. The economies of both countries will benefit in terms of taxation and foreign exchange earnings or savings. There are considerable social benefits mainly due to job opportunities, expansion of the skills base and the extension of services to the province and district where the project is located. Further socio-economic impacts include local, national and provincial economic benefits and infrastructure. The magnitude of these positive impacts, in particular the fiscal contribution to the Mozambican economy is significant. Overall, the positive impacts outweigh the negative ones and the project option represents an efficient use of the natural resource base.

11.4 The project under reference is found to be environment-friendly, economically sustainable, and socially acceptable. This executive summary is, therefore, submitted to the Board for consideration.
12. DOCUMENTS CONSULTED

1. Terms of Reference of the component ESIA’s, Sasol 2000 through 2001
2. Specialist Investigations or studies by Mark Wood and Impacto Consultants, 2001
5. Briefing IM & Final Information memorandum (PIM) by Dresdner Kleinwort Wasserstein, March 2002
6. Information Memorandum and Road Shows, Sasol April 2002
7. Executive Summary of Mozambique –Secunda Pipeline Project in the PIM, Dresdner Kleinwort Wasser, March 2002
12. All relevant reports and additional information available at Sasol Website www.sasol.com/

12. Contact Persons

(i) Mr. Giama Adde, Principal Mining Engineer
   Investment Operations Division, Private Sector Department
   African Development bank (AfDB)
   Tel: 225- 2020 4295; Fax: 225- 2020-5967/4964
   E-mail: g.adde@afdb.org

(ii) Mr. Vasantt Jogoo
    Principal Environmentalist
    African Development bank (AfDB)
    Tel: 225- 2020 4279 Fax: 225- 2020-5033
    E-mail: v.jogoo@afdb.org