U.S. TRADE AND DEVELOPMENT AGENCY

EXECUTIVE SUMMARY

SUAPE GRAIN TERMINAL FEASIBILITY STUDY

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Please note that tables and graphs are omitted in the executive summary, please see the full report.

Chapter I
Introduction and Executive Summary

1.1 Background

Suape Complexo Industrial Portuario was awarded a grant from U.S. Trade and Development Agency (TDA), to partially fund the cost of goods and services for feasibility study "study", on the proposed Suape Grain Terminal Project.

Suape awarded the study to Black & Veatch International (BVI). The Terms of Reference (TOR) for the study are included in Appendix A. BVI fulfilled the Terms of Reference in cooperation with Lembeck Associates, Inc. (subcontractor). The particulars of the Contractor and subcontractors are the following:

Contractor

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Teams of BVI professionals made three site visits between the period from February to October 1999. Data gathering and review meetings were held with Suape, CFN, Poultry Association, government officials, private industry, grain handlers, and feed mills. Visits to Poultry Farms were also made to collect and appraise information on a first-hand basis.

The results of the study are presented in Chapters 2 through 6 and arranged as per the TOR.

1.2 Location and Facilities

Suape Complexo Industrial Portuario is a Pernambuco State company under the State Secretariat of Economic Development, Tourism, and Sports. Suape is about 40 km south of Recife and connected by Federal route BR- 10 1 to Cabo and then state road PE-60.

The Suape port is the first to privatize all operations and its setup is the model for the privatization law. Suape is responsible for the channel dredging, quay walls, reclamation of land areas, and communication, gas, water, and electricity feed points. The state government has invested about $200 million in the Port to date. Suape Pernambuco State government, the poultry industry, and the private railroad show strong support for the project.

The total area allocated to Suape is 13,500 hectares (33,000 acres), divided into several zones. A large part of the area is devoted to the "green belt" and separates the sites for the town of Cabo. The green belt has dams, rain forests, and other natural and protected areas that cannot be developed. Included in the plan are a residential zone, a cultural preservation zone, and an agricultural zone. The administrative zone is centrally located. Most of the area is devoted to industrial zones such as the port industrial zone, processing and export zone, and a peripheral industry zone. The "port zone" comprises about 2,000 hectares (5,000 acres) and is along the ocean shoreline. The complex area is in need of a revised and updated master plan.

The Port has two operating (harbor) areas and is protected by a breakwater as shown in Figure 1-1. The breakwater extends from the mainland in an easterly direction for about 600 meters, turns northeast for another 900 meters, and then northward, paralleling the coast for 700

meters. The north-south break-water is about 1200 meters from the natural reef and overlaps the 300-meter wide entrance breech of the reef

The Outer Operating Area includes two piers: a petroleum-handling pier and a genera cargo pier. It also includes a moored 42,000 DWT LPG storage tanker for Petrobras. The inner Portuario includes a berthing face 935 meters long and consists of three berthing areas 275, 330, and 330 meters long, respectively.

The two operating areas are connected by a 300 meter opening through the reef which has been stabilized by 1000 cement grouted piles installed on both sides. The seabed has been dredged in both areas to - 15.5 meters.

The inner harbor area is protected, as the sea is generally calm and the winds are from the southeast. Port delays due to weather are not anticipated, with no down time. Sometimes the heavy tropical rains reduce the visibility, but this condition lasts for about one hour.

1.3 Present Situation

Brazil is the largest nation in South America and the second largest corn user in the Western Hemisphere. Corn consumption has grown from 32.7 million metric tons in 1994 to 36.2 million metric tons in 1999. The Brazilian Corn Balances in Table 1-1 show corn import to be in excess of 1.5 million metric tons for 1999.

Table 1-1
Brazilian Corn Balances
(1,000 metric tons)

Table 1-2

Argentina and Paraguay account for the lion's share of this trade. Argentina is in front with 71 percent in 1997 and 91 percent in 1998. This is due to the exclusionary tariffs that MERCOSUR has on corn imported from non-MERCOSUR nations. This tariff stands at 11 percent of CIEF value today. Efforts are underway by non-MERCOSUR nations, notably the USA, to remove the tariff.

The imported corn is distributed into various ports of entry. Recife, the present major port in Pernambuco has a share of about 50 percent of the imported corn as shown in Table 1-3.

Table. 1-3

Brazilian Corn Import by Port of Entry

(Metric tons)

Table 1-4 shows the corn deficit for Pernambuco to be about 641 million tons in 1997. This deficit will grow with he growth of the poultry industry.

Table 1-4
1997 Corn - Consumption / Production Balance in the Northeastern Region

The poultry industry in Pernambuco relies heavily on the imported corn for maintenance and growth of industry. The corn consumption in Pernambuco is the largest among the northeastern states as shown in Table 1-5.

Table 1-5
1997 Corn - Consumption in the Northeastern Region
(1,000 metric tons)

The State of Pernambuco and in fact most of the Northeast region's soil and climate are not well suited for corn production. The domestic supply chain, which relies mostly on trucks, is both inefficient and expensive. Pernambuco, in 1997, had a deficit of around 650 thousand metric tons, the largest in the region. The Port of Recife moved some 61 percent of total imported corn in 1997. The Federal Government has, through various price equalization programs (PEP), tried to redistribute the corn surpluses. These programs are costly and consequently politically difficult to maintain.

The grain storage facilities at Recife are limited in volume to 25,000 metric tons. Table 1-6 shows the silo capacity in Recife.

The imported corn is transported onto handy-sized vessels in lots of about 15,000-20,000 metric tons. The corn is initially moved into the storage silos in Recife and distributed by truck and also by rail. About 75 percent of corn consumption are within a radius of less than 200 km from the Port of Recife, Table 1-7 shows the corn consumption vs. Radial distances from Port of Recife.

The total Recife handling cost per ton of corn is US $6.95. The cost is used as basis to measure potential cost savings in the development of Port of Suape.

1.4 The Port of Suape Development

The development of a new grain terminal in the Port of Suape is based on the premise of growth in the economy to meet the increasing demands for corn, and on the limited available storage capacity in the Port of Recife.

Prediction of potential demand for corn in the State of Pernambuco was based on two forecasting models. Figure 1-2 shows the historical import growth record of corn through Port of Recife.

The fluctuations in the histogram are attributed to the intervention of the Federal Government through various price equalization programs (PEP), which tried to redistribute the corn surpluses. These programs are costly and consequently politically difficult to maintain.

The two forecasting models used were put to various statistical tests using data spanning some 30 years. The tests used included standard co-integration tests and Granger Causality test. All of these tests pointed to a very close relationship between the variables of the two models. When direct econometric equations were estimated, around 90 percent of the variations of the forecast variables (Brazilian Corn Demand and Pernambuco Corn Imports) were explained by GDP/CAP of Brazil and Pernambuco respectively. The analyses were made for medium and high growth scenarios of 3 and 5 percent, respectively. We believe a real per capita growth rate of 3.0 percent captured the growth in Brazilian corn demand very well.

Table 1-8 shows the results of the two forecasting models for Pernambuco.

The Pernambuco Direct Model shows 1.4 million metric tons of corn by 2005, and about 8.6 million metric tons by end of the forecasting horizon.

The import of corn through the Port of Suape is foreseen to be made using Panamax-size vessels with a bulk load of about 60,000 metric tons; and Suape is well-suited and developed to receive Panamax-size vessels.

Suape enjoys a distinct advantage in the Northeast in that it is the only Port capable of accommodating and handling fully loaded Panamax-size vessels.

Estimation of the silo storage capacity in the Port of Suape was based on 80,000 metric tons. Option B, of the two options developed, were the preferred selection as it offered more flexibility for the use of port land. The selected option consists of 12 metal -corrugated bins.

The cost and development of the grain terminal infrastructure (excluding marine construction) US $57,825,030. The estimate, including the various imposed tariffs on imported equipment, spare parts and engineering.

The costs of dredging, marine piling, and wharf construction were not included in the mentioned estimate as they will be built by the Port Authority and provided to the user for a predefined and mutually agreed upon fee(s).

The distribution of trucking distances from Suape to consumption areas is shown in Table 1-9.

The net trucking cost has increased by about US $297,824 above the trucking cost from Recife as shown in Table 1-10. A net increase in corn cost of US $0.20 per metric ton imported through Suape.

Table 1-10

Comparative Corn Transportation Cost Analysis

Port of Suape vs. Port of Recife (Trucks only)

1.5 Potential Cost Savings and Maximum Tariff

The potential cost savings arise from the use of Panamax-size vs. Handy-size vessels. A freight-rate model was used to estimate the ocean freight rate from New Orleans to Suape. The obtained ocean freight rate is compared to the actual freight rate for handy-size vessels from Argentina. The freight cost differential was calculated to be US $3.60 per metric ton in favor of using the Panamax-size vessel.

The net potential savings are US $3.40 per metric ton after deduction of US $0.20 for the increase in trucking costs.

Assuming that the total cost of handling the grain in Suape will remain as the same for that in Recife, namely US $6.95 per metric ton, the maximum net tariff at Suape should not exceed US $10.35 per metric ton. Increasing the tariff beyond US $10.35 per metric ton may adversely affect the utilization of the grain terminal by diverting some of the projected grain imports to other smaller ports using the handy-size vessels.

1.6 Project Schedule and Finances

The project is estimated to be completed within a 3-year period, in 2003. The schedule, including obtaining various federal and state licenses, engineering and the tendering and bidding cycle.

Build-Operate-Transfer (BOT) arrangement with the Port Operating Company. To achieve this objective, the Port Authority is flexible in discussing fees, tariffs, and other arrangements with the successful Port Operating Company. The BOT agreement is determined tentatively to be for 25 years, renewable for another 25 years.

The financial analysis and financial scenarios have considered the major influencing factors affecting the financing based on limited recourse project finance structure. The influencing factors are as follows:

The 11 percent tax on U.S. corn.
The high taxes on imported equipment.
The port fees for channel navigation, berthing, and land use.

The Internal Rate of Return for the various scenarios is shown below in Tables I - 11 through 1-13.

Table 1-13

Brazilian National Infrastructure Project

1.7 Other Commodities

Brazil is a large exporter of soybeans and soybean meal. Brazil exported some *6.5* million metric tons of soybeans in *1997* in addition to some *1.2* million metric tons of soybean oil and around 10 million metric tons of SBM. Brazil is the number two exporter of soybean and its derivatives after the USA. Pernambuco and CFN (the privatized Railroad Company) may capture part of this cargo, the cargo throughput of the new grain terminal and the Port of Suape will be increased considerably.

The development of soybean export through Suape is several distant years. Although some equipment such as conveyor belts can be shared, duplicate equipment and costs will be needed to retrofit the terminal area.

The Northeast in general, and the State of Pernambuco in particular, is poised to become leading pork and poultry producers. The climate is excellent, there is ample availability of suitable and inexpensive land and labor. With the right economic policies, these circumstances could give the State of Pernambuco an absolute competitive advantage in production of these two white meats on both the national and international markets. With modern processing and packing facilities the State could make significant inroads particularly into the European consumer markets.

1.8 Conclusions and Recommendations

The development of the grain terminal in Suape is an economic necessity for the continued growth of the poultry industry in the State of Pernambuco.

The feasibility study has demonstrated that cost reduction to the end-user can be achieved due to cost differential between Panamax-size vs. Handy-size vessels.

The development of the grain terminal as a BOT arrangement with foreign companies requires incentives on federal and state levels.

The use of railroad and building distribution centers is not cost effective in the near future. The Railroad Company, CFN, can still play a significant role in the development of future plans for the Port of Suape and grain distribution.

The next set of activities include the following:

Documents Preparation
- Technical Information
- Contract Preparation
- Specifications

Marketing and Promotion
- Operators and Suppliers
- Financing

Contract Services
- Bids, Clarifications, and Discussions
- Bid Evaluations

A further study to complete the above activities is recommended.

A grain terminal does not involve any processing or generation of waste products and nontoxic grain products are re-handled by the terminal. The enclosed storage facilities and conveying systems will have environmental abatement equipment installed. Most of the conveyors will be enclosed or housed in enclosed structures for protection against airborne emissions. These facilities do not pose an environmental nuisance problem. The anticipated unloading device is of enclosed design, minimizing spillage at the berth and transfer to the

conveyor system. Enclosed adjustable loading spouts, with dust collectors, are incorporated in the train/truck loading station. Any inadvertent spillage will be collected.

The construction of the storage facilities, ancillary facilities, roads, and utilities can all be done in a way that is environmentally acceptable. Rain water and sanitary wastes can be collected and treated before discharge.