

PROJECT COMPLETION REPORT

BOTSWANA-ZAMBIA ROAD PAVING 633-0072

FUNDING:	AID \$ 2,008,000	(Grant)
	399,000	(Loan)
	GOB	324,216
	EEC	22,083,000
	NORAD	8,000,000
	<u>TOTAL</u>	<u>\$32,814,216</u>

SUMMARY:

AID has a long history of involvement with the BOT-ZAM Road, dating back to a feasibility study in 1970, gravel road construction between 1973 and 1977, and now ending with the engineering design and supervision for the Bot-Zam Road Paving project. For the paving project, AID was a minor partner in a multi-donor effort, with the EEC and NORAD providing the bulk of financing. The project grew out of transport disruption caused by the independence struggle in Rhodesia, but became even more important to the Southern Africa region with Zimbabwe's independence and the formation of the Southern Africa Development Coordination Conference (SADCC). The project was successfully completed, three and a half years later than planned and about \$18,000,000 (120%) over budget. The delays and resulting cost overruns were due largely to cumbersome EEC procedures and difficulties in coordinating donors, the U.S. engineering firm and the European contractor. The satisfaction and appreciation that AID and the other donors have received with completion of the road are clouded by the large unresolved claims (over Pula 28,000,000, about US \$17,000,000 at current exchange rate). The good public relations that AID has received in Botswana and the region as a result of participating in the project has to be weighed against the lack of significant technical, cost or managerial benefits that accrued from AID's participation as a minor donor in a large multi-donor project.

DESCRIPTION:

A. BACKGROUND

The BOT-ZAM Road was first proposed to AID as a regional project serving both Botswana and Zambia in the late 1960s. The instability in neighboring Rhodesia led Zambia to look upon the road as an alternative to rail routes through Rhodesia to South African ports. Botswana was interested in linking its relatively inaccessible Northern region to the more developed and populated East. AID assistance began with grants of \$150,000 in 1970, for a feasibility study and \$850,000 in 1971, for engineering design. These were followed by capital assistance loans of \$12,600,000 in 1972 and \$4,000,000 in 1973 for construction of the road to a gravel standard. The gravel road, completed in January, 1977, was 300 kilometers long, linking Nata on the southern end, with Kazungula, the northern Botswana village on the Zambezi River where the borders of

Zambia, Zimbabwe and Botswana meet. Paved roads south linked Nata to Francistown, Gaborone and the South African port cities.

B. THE BOT-ZAM ROAD PAVING PROJECT

In 1976, while construction of the gravel road was still underway, the independence struggle in Rhodesia forced the closure of the Rhodesia-Zambia border, increasing the importance of the road link to Zambia and revising upwards the expected traffic over the road. AID and the EEC were asked to assist in upgrading the road to an asphalt surface standard. AID financed a feasibility study for the upgraded road, completed in May, 1977, and the Botswana Zambia Road Paving Project was authorized on September 12, 1977. A Grant Agreement providing \$1,500,000 was signed on September 30, 1977. The 1972 and 1973 loans were amended in February, 1981 to permit the use of the unexpended balance of \$399,000 on the road paving project. A Project Amendment was signed on June 16, 1982, to provide an additional grant of \$508,000 for the project.

AID assistance was provided for the engineering design and construction supervision contract. The EEC, GOB and later NORAD provided funding for the construction contract.

C. ENGINEERING SERVICES

A host-country contract for engineering services was awarded to the firm of Tippetts-Abbett-McCarthy-Stratton (TAMS) on December 15, 1977. This was five months later than had been planned in the Project Paper due to delays in negotiating the contract and opening the AID letter of commitment. Services for the project were divided into three phases as follows:

Phase A: Final design and preparation of tender documents;

Phase B: Assistance to the Ministry of Works and Communications (MWC) in the evaluation of tenders and in the award of a construction contract.

Phase C: Administration of the construction contract and supervision of construction.

Phase A services were begun in mid-February, 1978. TAMS was required to prepare the engineering design, tender documents and an engineer's construction cost estimate, and to prequalify contractors for the road paving work. Only the engineering design work proceeded as planned. In March, 1979, the EEC decided that they, not TAMS, would handle the pre-qualification of contractors. Problems with coordinating EEC, GOB and AID comments and a shortfall in EEC funding for the construction contract delayed completion of tender documents until September, 1979. Phase A services were completed seventeen months behind schedule.

The original EEC grant of 10 million European Units of Account (EUA) was insufficient to pave the complete 300 km of

road. Additional EEC funds could not be made available until a new Lome Agreement came into effect in 1981. TAMS was therefore requested to divide the project into two parts in anticipation that the EEC funds already committed would be sufficient for the first part. The tender documents were amended to reflect two project components; Project A consisting of the first 180 km of road from Nata, and Project B consisting of the remaining 120 km to Kazungula. TAMS Phase B Contract Award services included amending and issuing the Tender Documents, carrying out a site visit with contractors, receiving and evaluating the tender, preparing a tender Evaluation Report and discussing the report with the GOB, EEC, and AID. These activities proceeded as planned. Problems then arose with the contract award. One firm was low bidder on project A while another firm was low for project A and B. After lengthy discussions, the GOB and EEC decided to award for Project A on the basis of Project A and B bids. EEC funds were insufficient for Project A and the contract award to an Italian firm, COGEFAR, was delayed until December 3, 1980, when the GOB was able to arrange their own contribution to the project. The project was now twenty-eight months behind schedule.

COGEFAR's construction work and TAMS Phase C services began in January, 1981. Additional EEC funds became available and COGEFAR's contract was amended to include Project B on July 7, 1981. COGEFAR encountered numerous start-up problems including labor unrest and difficulty with supplying and processing road materials, during the first year and a half of work. Progress picked up in the last half of 1982, but the contractor was granted a twelve month contract extension (to December, 1984). Road paving work was completed in December, 1983, forty months behind the original PP schedule. The road was officially opened by Dr. Kenneth Kaunda, the President of Zambia, on February 10, 1984.

SPECIAL COVENANTS:

The Project Agreement established two Special Covenants as follows:

- A. Project Evaluation - "The Parties agree to establish an evaluation program...as an integral part of the project."

A special evaluation of the project, performed by an outside consultant, covered the period from the beginning of the project (August, 1977) to October, 1980. The evaluation specifically addressed the reasons for project delays and cost overruns and was asked to recommend any contract or grant agreement amendments that would improve the Phase C project implementation. This was the only evaluation performed on the project.

The evaluation concluded that much of the cost overruns and project delays could have been anticipated by AID, the EEC and the GOB during the TAMS contract review. Furthermore, the evaluation

concluded that because EEC financing limited construction to contractors from ACP or EEC countries, there were none of the technical, financial or management advantages which could accrue to Botswana from AID financing for the engineering work. The evaluation recommendations were used as a basis for approving an outstanding TAMS contract amendment, amending the Bot-Zam loan agreements to provide \$399,000 of unexpended funds for the TAMS contract, and to develop a PP Amendment which extended the PACD from September 30, 1981 to September 30, 1984, added \$508,000 in grant funds to the project, and revised the implementation schedule.

- B. Road Maintenance - "The Grantee covenants to provide an appropriate level of effort to keep the Road properly maintained. In particular, the Grantee will, to the maximum extent possible, take such steps as may be necessary to enforce vehicle weight limitations and otherwise prohibit the use of the Road by over-weight vehicles."

Under the terms of their contract, COGEFAR was responsible for road maintenance for twelve months after the last date of substantial completion of the road (November 21, 1983). The GOB has been responsible for maintenance for only the past five months and it is too early to determine if they have been satisfying this special covenant. A TAMS letter to the GOB dated March 14, 1985, points out some damage to the road caused by over-loaded vehicles. The GOB has established a new weighing station at the North end of the road and weighs Northbound traffic at an existing station in Francistown.

COMPLETION STATUS:

A. ENGINEERING SERVICES

Although the PACD was September 30, 1984, and AID grant and loans funds were fully disbursed by March, 1984, TAMS has an ongoing contractual arrangement with the GOB. TAMS performed a final inspection of the road at the end of the maintenance period in December, 1984, provided engineering decisions on the last three COGEFAR claims in March, 1985, and has yet to publish the Completion Report for the Project. Most of TAMS work over the past year has been on evaluation of COGEFAR claims, not on the engineering services discussed in the PP. All TAMS work since March, 1984 has been financed by the GOB.

B. CLAIMS

COGEFAR has submitted twenty-seven claims for additional compensation or time extensions, totalling over 28,000,000 Pula, to TAMS for evaluation (see Annex A). Claims are first evaluated, and a determination is made, by the Engineer's Representative (TAMS' chief engineer in the field

office). If the contractor chooses to make counter arguments, a decision is then made by the TAMS Engineer (the head office engineer in charge of the project). COGEFAR has suspended or TAMS has rejected all claims except as follows:

Claim No. 0: COGEFAR requested a 28 month time extension and TAMS awarded a 12 month extension.

Claims No. 1 & 2: TAMS accepted these claims in principle but could not value the claim with the documents and methods submitted by COGEFAR.

Claim No. 3: Accepted.

Claims No. 10 & 13: TAMS certified a preliminary payment of P350,000 against COGEFAR claims for P14,671,000.

Claim No. 11: TAMS certified a preliminary payment of P30,000 against COGEFAR's claim for P33,000.

Claim No. 15: TAMS certified a payment on account for P229,850 against COGEFAR's claim for P388,755.92.

COGEFAR has not accepted the TAMS decision and has advised the GOB of its intentions to seek additional compensation, either through direct negotiations with the GOB or through formal arbitration proceedings.

C. FINANCIAL SUMMARY

	BUDGET ESTIMATES		ACTUAL
	PP (6/77)	PP AMENDMENT (6/82)	COSTS (4/85)
<u>TAMS CONTRACT</u> (U. S. \$)			
AID Grant	1,500,000	2,008,000	2,008,000
Loan		399,000	399,000
GOB			324,216
TOTAL	1,500,000	2,407,000	2,731,216

COGEFAR CONTRACT
(PULA)

GOB	1,157,000	6,153,000	
EEC	10,000,000	16,000,000	16,500,000
NORAD			7,913,098*
TOTAL	11,157,000	22,153,000	24,413,098

CONCLUSION:

The Project's Goal -- To improve the economic well-being of the general populace of Botswana, and Purpose -- to increase economic and communication self-reliance by improving the transport link with Zambia, were both based on assumptions of increased economic trade and communication between the two countries. The GOB's internal policies on development of rural areas, the new relationships in the region, and transit traffic to and from Zambia and Zaire have proved to be much more important factors than Botswana-Zambia trade. Two important external factors that developed during project implementation were the independence of Zimbabwe in 1980 and the formation of SADCC in 1981. In a SADCC study of Southern African transport systems, the completion of the Bot-Zam Road project was accorded highest priority. Although Zimbabwe has reopened its border with Zambia, freight from South African ports to Zambia and Zaire continues to be the most important traffic on the Bot-Zam Road. Improved access from Botswana's more

*NORAD Grant is Pula 8,500,000

developed east to the northern Chobe, Kasane and Kazungula regions has facilitated new GOB investment in public services such as health care, agriculture, forestry and education.

These successes have not been without cost. The project was completed almost three and a half years behind schedule and at about double the original cost estimates (for both engineering services and construction). The continued political importance of the road in the context of regional Southern Africa relationships has made the delays and extra costs acceptable to the GOB and the donors involved. However, the issue of contractor claims remains unresolved.

LESSONS LEARNED:

From a political point of view, AID's involvement in the BOT-ZAM Road Paving project was successful. For a relatively small contribution of less than 10% of total project costs, AID was able to share credit with other donors for a highly visible project. Without the AID involvement in road paving, the substantial earlier contribution to the original gravel road project would have been largely forgotten. By using host country contracting procedures and not funding the construction component, AID has effectively removed itself from criticism for the large cost overruns and unsettled claims.

Politics and publicity aside, there were no significant technical, cost or managerial advantages to AID involvement in the project. The project evaluation recommended that AID consider co-financing similar projects only in circumstances where:

1. The U.S. can provide expertise not readily available from other donors;
2. The U.S. financing is a large enough portion of the project cost to allow AID to influence the direction and progress of the project;
3. The U.S. is financing a discrete part of the project construction contract, e.g., the construction of a major section of a road, the supply of specific construction materials or equipment which are of better quality, more efficient, better suited to the project, or able to meet the technical specifications at a lower cost; or,
4. Where there is some technical, cost, or management advantage to the host country from U.S. participation.

None of these criteria fit the project.

CONTRACTOR'S CLAIMS

Claim No. 0	Time Extensions
Claim No. 1 & 2	Late Award of the Contract and Rainy Season Interference
Claim No. 3 & 24	Customs Bonds and Duties; Corporate Tax, Personal Income Tax and Taxation Generally
Claim No. 4 & 12	Roadstone Chippings: Source and Haulage
Claim No. 5	Lime Stabilization: Materials
Claim No. 6	Delay in Approvals and Payment of Plant Advances
Claim No. 7	Rail Crisis: Delay in Delivery of Plant and Materials
Claim No. 8	Incorrect Survey Data
Claim No. 9 & 14	Labor Health Area Order and Rations
Claim No. 10 & 13	Change of Contract Character, Imbalance and Acceleration
Claim No. 11	Increase in the Number of Public Holidays
Claim No. 15	Devaluation of the Botswana Pula
Claim No. 16	Income Tax Amendment
Claim No. 17	Sales Tax Act
Claim No. 18	Drought: Increase in prices
Claim No. 19	Excess of Fines in Borrow Materials and Excess Overburden
Claim No. 20	Admeasurement of Mechanical Stabilization
Claim No. 21	Existing Base Course: Substandard Densities
Claim No. 22	Boreholes: Actual Capacities Below Indications of Information to Tenderers

Claim No. 23 Bypasses: Changed Circumstances
Claim No. 25 Presentation of Claims
Claim No. 26 Base Course Constituents:
 Properties and Proportion
 Variability