

## PROJECT ASSISTANCE COMPLETION REPORT

PROJECT TITLE: St. Vincent Infrastructure

PROJECT NUMBER: 538-0138.07

FUNDING PERIOD: 08/27/87 - 09/30/93

LOP FUNDING: ESF Loan \$2,000,000; ESF Grant \$940,031

IMPLEMENTING AGENCIES: Ministry of Communications and Works (MCW); Central Water and Sewerage Authority (CWSA)

PACD: Original 07/31/90; amended to 07/31/91; amended to 07/31/92; amended to 07/31/93; amended to 09/30/93.

**1. PROJECT PURPOSE:**

To improve the physical infrastructure that is directly supportive of productive enterprise and increased investment. This sub-project, which resembles the Productive Infrastructure Rehabilitation Project (PIR), promotes economic growth in the agricultural sector through increased crop production. Specifically, road improvements will stimulate investment in the production of non-traditional crops for export to the CARICOM states, and other markets.

**2. BACKGROUND:**

This IEMS sub-project can be considered a continuation of the road rehabilitation effort authorized in FY 82 for St. Vincent under the Productive Infrastructure Rehabilitation Project (PIR) - 538-0082. The PIR project had a PACD of September 30, 1987 and provided St. Vincent with a grant of \$3,250,000 to rehabilitate roads that had been assigned a high priority by the GOSV. St. Vincent Infrastructure was designed to continue the road rehabilitation effort, selecting road segments from the same GOSV priority list. Most of the lessons learned under the PIR project were incorporated into the design of the St. Vincent Infrastructure project. These included:

- Provision of adequate technical oversight by the Public Works Department of the Ministry of Communications and Works (MCW);
- Inclusion of a maintenance component in the design;
- Procurement of basic road construction/maintenance equipment;
- Provision of an appropriate level of technical assistance.

(N.B. This assistance ended in March, 1989 with the untimely death of the AID-funded Senior Engineering Advisor. However, in an effort to ensure effective project oversight, IEMS Core Contract funds were used to provide the GOSV with the services of a part-time engineering consultant until November, 1991. From then on the AID Project Officer provided oversight.)

### 3. PROJECT FUNDING:

St. Vincent Infrastructure was a sub-project of an overall project, Infrastructure Expansion and Maintenance Systems (IEMS), that was originally authorized on May 6, 1986. The St. Vincent sub-project was authorized on August 28, 1987 at \$3,000,000 and subsequently there were two authorization amendments: on August 31, 1989 and on July 9, 1993 - when the authorization was reduced by \$59,969.

The Project Loan Agreement with the Government of St. Vincent and the Grenadines (GOSV) was signed on August 28, 1987. The initial obligation under the Agreement was \$2,000,000 in ESF loan funds. Additional obligations of ESF grant funds were made on June 30, 1989 (\$433,000) and on August 18, 1989 (\$567,000), before the grant funding was finally reduced by \$59,969 on September 8, 1993 to a total of \$940,031. The total obligated loan funds remained at \$2,000,000.

The Project Assistance Completion Date (PACD) was originally July 31, 1990 which was later amended to July 31, 1991 when the Diamond Industrial Estate water supply component was added via the Loan Agreement Amendment No. 2. Three further PACD extensions were approved by RDO/C, allowing the GOSV more time to complete all outstanding road rehabilitation work. By the amended PACD, September 30, 1993, expenditures amounted to: \$1,996,296 (loan) and \$940,031 (grant), or 99.9% of the total obligation.

A financial audit of this sub-project was performed by chartered accountants, KPMG Peat Marwick, after the PACD. The auditor's final draft report is dated January 27, 1994. The Project Officer has seen no further correspondence from the Regional Inspector General for Audit, Tegucigalpa, on this matter.

### 4. SUMMARY OF INPUTS AND ACCOMPLISHMENTS:

#### 4.1 Planned v. Actual Inputs:

St. Vincent Infrastructure had five components:

(1) Rehabilitation of approximately 14 - 15 miles of road; (2) Procurement of construction equipment; (3) Technical assistance; (4) Maintenance program; and (5) Construction of a water supply system for the Diamond Industrial Estate (DIE).

The road rehabilitation component was implemented by the Ministry of Communications and Works (MCW), and the DIE water supply by the Central Water and Sewerage Authority (CWSA). The planned, revised and actual funding levels for each of these components are summarized in Table 1 on page 3.

<b>St. Vincent Infrastructure</b>							
<b>Summary of Inputs (US\$)</b>							
<b>Component</b>	<b>Planned (Loan)</b>	<b>Revised (Loan)</b>	<b>Revised (Grant)</b>	<b>Total Revised (Loan + Grant)</b>	<b>Actual (Loan)</b>	<b>Actual (Grant)</b>	<b>Total Revised (Loan + Grant)</b>
1 Road Rehabilitation	1,773,000	1,390,000	509,344	1,899,344	1,390,000	509,343	1,899,343
2 Equipment Procurement	500,000	443,711		443,711	433,711		433,711
3 Technical Assistance	110,000	45,468		45,468	45,468		45,468
4 Maintenance	50,000	120,821		120,821	127,117		127,117
5 Diamond Industrial Estate Wat	567,000		430,687	430,687		430,687	430,687
<b>TOTAL</b>	<b>3,000,000</b>	<b>2,000,000</b>	<b>940,031</b>	<b>2,940,031</b>	<b>1,996,296</b>	<b>940,030</b>	<b>2,936,326</b>

#### 4.2 Planned Outputs:

1. The rehabilitation of approximately 15 miles of road.
2. The procurement of the following items of construction equipment:
  - a) One front-end loader;
  - b) One motor grader;
  - c) One crawler tractor;
  - d) One tandem steel-wheel roller;
  - e) Three front end dumpers;
  - f) One 4-inch water pump;
  - g) Several miscellaneous items and spare parts.
3. The provision of the services of a senior engineering advisor to the MCW for a period of two years. The advisor's primary responsibility was the effective implementation of the road rehabilitation component of the sub-project. However, other responsibilities included the design and implementation of the maintenance component (see below), as well as other AID-related and non-AID-related duties within the MCW.
4. The development of a road maintenance plan to encompass the roads rehabilitated under this sub-project.
5. The provision of a water supply for the CIDA-funded Diamond Industrial Estate. This included the design and construction of a 250,000 gallon reinforced concrete water storage tank, as well as a 2-1/4 mile, six inch diameter, ductile iron pipeline linking the tank to the estate.

#### 4.3 Achieved Outputs:

1. A total of 10.3 miles of road were rehabilitated.
2. The following items of construction equipment were procured:
  - a) One front-end loader;
  - b) One motor grader;
  - c) One crawler tractor;
  - d) One tandem steel-wheel roller;
  - e) Several miscellaneous items and spare parts.
  - f) One unplanned output was the procurement of two personal computer systems for use by staff within the Public Works Department (MCW).

**N.B.** The MCW changed its priorities and decided not to proceed with the planned procurement of the three front-end dumpers and the 4-inch water pump.

3. As mentioned above, the services of Mr. Rudy Matthews, Senior Engineering Advisor, were secured from February, 1988 until his death in March, 1989. IEMS Core Contract funds were used from then until November, 1991 to provide the GOSV with the services of a part-time engineering consultant, Mr. Bob Fedel, to help oversee the road rehabilitation component. After November, 1991 oversight was provided directly by an AID Project Officer.
4. The road maintenance plan for the recently rehabilitated roads was not implemented. This was because the GOSV obtained non-AID funding and engaged a consultant to prepare a comprehensive maintenance management system for the MCW. This plan will encompass the roads that were rehabilitated under this sub-project.
5. The 250,000 gallon water storage tank, and the 2-1/4 mile pipeline were constructed and are in use.

**5. DEVELOPMENT IMPACT:**

Assistance by the Government of the United States to the GOSV has improved the physical infrastructure on the island, especially the feeder road distribution network. Some of the nine roads that were rehabilitated had been previously allowed to deteriorate to barely recognizable tracks, and were impassible to all but four-wheel drive vehicles. The improvement in road conditions has assisted farmers by speeding up the transportation to market of the produce from nearby farms.

With the provision of a water supply to the Diamond Industrial Estate, all the primary infrastructure is in place to permit construction of factory shells there. This work is not expected to commence until 1995.

**6. RECOMMENDATIONS FOR CONTINUED MONITORING:**

Continued monitoring is not required.

**7. LESSONS LEARNED:**

**Lesson No.1** A separate project execution unit is necessary for adequate technical oversight by the Borrower/Grantee (B/G).

To implement the road rehabilitation component the MCW put in place a small project team, headed by a Project Engineer, which remained almost unchanged until the PACD. The continuity of this supervision, and the historical memory of the project team were important factors in the successful conclusion of the rehabilitation.

**Lesson No.2** Procurement of construction equipment, which is then dedicated to the construction phase of infrastructure projects, is vital to the timely execution of construction activity by the B/G.

If infrastructure projects are being contemplated in the future, and it is agreed that the B/G will participate in some, if not all, of the civil works, then the project design should include the procurement of basic construction equipment (in this case: a front-end loader; a motor grader; a crawler tractor; etc.) which were dedicated to the road works being performed. This will prevent delays in the execution of the work while waiting on equipment that is being used elsewhere.

**Lesson No.3** All construction equipment that is procured must be supplied with adequate spare parts, and wherever possible, training in the maintenance of this equipment should be included as part of the project design.

The reason for the procurement of this equipment is to prevent delays in construction activity due to a lack of adequate mechanical plant. However, the procured equipment will not solve this problem if it is not adequately maintained. The provision of adequate spare parts is usually a component of the procurement process, but if the B/G does not have access to personnel who have the appropriate training in the maintenance of the types of equipment that have been procured, then the equipment and the spare parts, will not last as long as would be expected.

**Lesson No.4** Where the Fixed Amount Reimbursement (FAR) method is used to fund construction works then ensure that each FAR agreement covers just one discrete activity - not multiple activities.

The FAR method is used where a discrete activity (in this case a road to be rehabilitated) can be identified and a fixed cost estimate can be prepared in advance. This cost estimate determines the amount of the final reimbursement. However, the B/G must finance the activity out of its own funds first, since reimbursement cannot be made until the entire activity has been completed. Initially in this sub-project, the FAR method of financing was used for a group of three roads that were located close to each other. However, the B/G had difficulty in finishing all the rehabilitation work when it started to experience cash flow problems and delays in the completion of the work were the result. Later on, when the FAR method was used for one road at a time, the B/G was able to manage its cash flow much better and the work progressed more expeditiously.

**Lesson No.5 Wherever possible, a financial audit should be performed at the mid-term of the project (or sub-project).**

The only financial audit was performed at the end of St. Vincent Infrastructure. Although no serious problems were discovered by the auditors, if there were problems there would have been little opportunity to correct them since the sub-project was over. Corrective action could be taken in future projects if mid-term audits are conducted.

Clearances:

MHJordan:DIR:   
BDSelliah:GE/GDO:(Draft)7/14/94  
RWCohn:C/GDO:(Draft)7/7/94  
HCarter:PDO:(Draft)7/19/94  
MHorween:CONT:(Draft)7/20/94  
PBisek:C/PDO:(Draft)7/19/94