Canadian International Development Agency | Agence canadienne de développement international

Bamako-Ségou Very High Tension

Connector Line Project,

Mali

Canadian International Development Agency
200 Promenade du Portage
Gatineau, Quebec
K1A 0G4
Tel: (819) 997-5006
Toll free: 1-800-230-6349
Fax: (819) 953-6088
(For the hearing and speech impaired only (TDD/TTY): (819) 953-5023
Toll free for the hearing and speech impaired only: 1-800-331-5018)
E-mail: info@acdi-cida.gc.ca

Canada

Executive Summary

1.0 Introduction

The evaluation of the *« Bamako-Ségou Very High Tension Connector Line »* project in Mali is one of the many evaluations carried out within the framework of CIDA's *« Infrastructure Services Performance Review* ». This report is a summary of the results of the evaluation. The information used in this exercise was collected in April-May 1999. The data was collected by means of a documentation review, interviews with key stakeholders and an in-field mission. In total, more than 100 people were met, both in Mali and in Canada. Five professionals took part in the evaluation – two Canadians and three Malis.

2.0 Project Description

Canada has been co-operating in the development of the energy sector in Mali for more than 23 years and, to date, has injected approximately CAN $23 million into it. This figure should climb to approximately CAN $32 million by the year 2000. This support, provided in co-operation with the World Bank and several other bilateral and multilateral donor agencies, was focused specifically on strengthening Mali's hydroelectric power production, transmission and distribution capabilities, a sector in which Canadians are experts.

The *« Bamako-Ségou Very High Tension Connector Line »,* project carried out at a cost of CAN $9,062,600, was the second in a series of three projects aimed at strengthening the energy sector in Mali funded by CIDA since 1976. It was preceded by the *« Sélingué Dam: Energy Transmission Line »* project carried out between 1976 and 1980 and followed by the *« Bamako Electricity Sector Strengthening »* project which began in 1991 and which should be completed by the year 2000. These projects had the same ultimate aim – contributing to the socio-economic development of the country.

The end purpose of the project was to provide electricity to the city of Ségou and outlying centres (Fana and Dioïla) by means of a connector line between Bamako and Ségou fed by the Sélingué hydroelectric station. Its goal was to build the connector line. It consisted essentially in supplying the materials and equipment needed to build the very high tension (VHT) line, on the one hand, and technical assistance and training in strategic planning and supply management, on the other hand. It should be noted that this operation was part of a multi-donor agency project for the construction and putting into service of the Bamako-Ségou VHT line, a project which was itself part of a much larger program, the World Bank's *« Second Electricity Project »*. Thus, it is important to point out that Canada's contribution alone would not have made it possible to carry electricity and distribute it in the Ségou, Fana and Dioïla areas, given the great costs involved (CAN $32.6 million).

3.0 Development Context and Energy Context

Mali is one of the poorest countries in world with a real per person GNP of US $543, compared to US $965 for the least-developed countries as a whole. It is in the 171st place on the *« Human Development Indicator »* (HDI) scale. Despite the fact that its domestic economy grew at an average annual rate of 3% over the last 10 years, its social indicators are among the lowest in the world: life expectancy – 46.6 years; adult literacy rate – 29.3%; gross education rate, all levels included – 17%, infant mortality rate – 161 per 1,000 births; one doctor for every 20,000 inhabitants; only 10% of country dwellers and 46% of city dwellers have access to drinking water; 68.8% of Malis eat less than the minimum recommended to meet food energy requirements.

At the end of the 1970s, Mali was in a precarious situation as far as its energy supply was concerned. At that time, more than 90% of its energy came from ligneous resources and, because of a lack of connecting power lines, a dozen or so secondary cities were supplied by very expensive to operate thermal stations. When the *« Bamako-Ségou Very High Tension Connector Line »* project was being planned in 1987, it was estimated that only about 4% of the population of Mali had access to electricity.

4.0 Results

4.*1* *Deliverables*

The *« Bamako-Ségou Very High Tension Connector Line »* project results, as described in the logical framework, have been delivered. Thus, in addition to building a 240 km, 150 kV line between Bamako and Ségou and another 40 km, 30 kV line between Fana and Dioïla, the Canadian technical assistance provided for the project made it possible to train four Mali managers, including the present Director General of EDM (Énergie du Mali – Mali Energy) and his assistant, in the areas of strategic planning and supply management and to transfer technology in those two fields. The Canadian materials were judged to be adequate and very well suited to the climatic conditions in the region while the tools developed and the techniques, methodologies and processes introduced within the technical assistance framework are still being used daily at EDM, the public company responsible for water and electrical services.

4.2 Effects

The goal of the project, as defined in the logical framework, has been achieved. The 150 kV VHT and the 30 kV MT lines have been put into service and are still fully functional and, more importantly, being used. Their installation and operation have met with no particular technical difficulties.

4.3 Impacts

The *« Bamako-Ségou Very High Tension Connector Line »* project has gone beyond achieving its purpose as described in the logical framework and has achieved a series of results that were mapped out in the project's various planning and approval documents. Thus, in addition

to i) supplying hydroelectric power to the cities of Ségou, Markala, Fana and Dioïla from the Sélingué Dam and (ii) completely closing the Markala and Fana thermal plants as planned in the logical framework, the project also made it possible to (iii) regularize electricity supply, (iv) reduce the amounts of fuel used by the old electricity « *self-producers* », (v) improve socio-sanitary facilities and health services and, finally, (vi) increase the level of economic development in the affected areas. It is worth noting that, according to figures supplied by EDM, savings following the shutdown of thermal production at the Ségou, Markala and Fana stations should reach 4.6 billion francs CFA over the period from 1992 to 2001.

Moreover, the following results, observed during the infield mission, were not even foreseen during the planning of the *« Bamako-Ségou Very High Tension Connector Line »* project. The presence of VHT and MT lines made it possible to (i) establish conditions, in the Ségou and Fana-Dioïla regions, favouring the implementation of Mali's decentralization of industrial development policy, limiting problems of income distribution imbalances among the regions and reducing pressures on urban infrastructures in the Bamako Governorate and its surrounding areas, (ii) create new revenue-generating activities and improve the quality of education, thus helping to retain more young people in these regions, (iii) extend shop business hours through a regular supply of electric power, (iv) increase the comfort levels in households (e.g., lighting, ventilation, air conditioning, use of household appliances, televisions, telephones, etc.), (v) improve perishable food conservation though greater use of household appliances, (vi) increase community cultural activities and communications among populations through concerts, parties, dances, presence of local radio stations (FM stations), increased television viewing, etc., (vii) improve the security of citizens through public lighting and (viii) improve the operation of public administrative and technical services and of development projects by improving the quality of their tools and work milieus.

5.0 Benefits for Canada

The main benefits of the project for Canada came from the very high Canadian content of the materials and equipment used in the construction of the VHT and MT lines. Five Canadian companies thus benefited from materials and equipment supply contracts and the provision of shipping and insurance services worth almost CAN $7.7 million. Moreover, the supply of technical services to EDM undoubtedly allowed Hydro-Québec International (HQI) to further strengthen its competitive position both in Mali and in the various markets that were subsequently opened to international competition in a number of places throughout the world.

Another benefit of the project is the increased reputation Canada and CIDA enjoy with the Mali government and the Mali people in general.

6.0 Main Success Factors

Four factors in particular explain the success of the *« Bamako-Ségou Very High Tension Connector Line »*. The first two factors are the *relevance* of the operation, the energy sector, and, more specifically, electricity being one of the key components of economic development in Mali and its *adequateness*, since the construction of the Bamako-Ségou VHT line has been one of the main priorities of the Mali government since its beginning in the 1980s.

A third success factor was the existence of a real *partnership* which was characterized by excellent co-ordination among the various donor agencies at the project and sector levels (*« Second Electricity Project »*) and by close co-operation between EDM and the consulting engineers consortium responsible for supporting EDM at the management and overall work supervision levels. Finally, it should be noted that a last success factor was the *efficient use of human resources* which resulted from the very high professional quality of the human resources supplied by HQI, both as regards the technical assistance funded by Canada and the work supervision funded by the *European Investment Bank*.

7.0 Lessons learned and recommendations

7.1 At the Policy Level

Lesson

Canada played a decisive role both in the construction of the Bamako-Ségou VHT line and in the development of the capabilities of EDM managers and in policy development. This role could be taken on because, among other reasons, Canada provided significant funding which made it a major and indispensable player, both for other multilateral and bilateral donor agencies involved in the electricity sector in Mali and for the Mali government.

Recommendation #1

That Canada, if it wishes to continue to be a major player in the infrastructure services sector, whether through its own government, its businesses and public agencies or its private sector, accept to devote significant financial resources to it.

Lesson

Even if, in the short and medium terms, the electricity service made possible by the construction of the Bamako-Ségou VHT and the Fana-Dioïla MT connector lines is not available, because of cost, to the majority of the population and particularly to the poorest people, it is nevertheless an essential socio-economic development factor in these areas.

Recommendation #2

That operations planners in the infrastructure services sector fundable by CIDA systematically evaluate the potential economic effects and impacts that the use of these infrastructures might have and that they not dwell on the fact that the poorest people or women or youth are not, in the short or medium terms, direct beneficiaries of these infrastructure services.

7.2 At the Country-program Level

Lesson

The viability of the projects *« Bamako-Ségou Very High Tension Connector Line »* and *« Second Electricity Project »* was limited by the Mali government's lack of will to carry out the reforms it had agreed to with the World Bank and other bilateral and multilateral donor agencies relating to improvements in the legal and regulatory environment of the Mali energy sector.

Recommendation #3

That the planning of all infrastructure services projects include identification of major constraints imposed by the legal and regulatory environment of the affected sector and that a firm commitment by the recipient government (new measures, implementation timetable, etc.) be an integral part of any agreement to be signed between it and the government of Canada.

Lesson

Even though the *« Bamako-Ségou Very High Tension Connector Line »* project lasted only four years, Canada had previously invested in the Mali energy sector in the context of the construction of the Sélingué Dam and continued its involvement by its support of the *« Bamako Electricity Sector Strengthening »* project and of the SRDO (Manantali hydroelectric facilities). Thus, Canada has maintained a presence in the Mali energy sector for more that 23 years and is one of the main players there. This consistency of action not only made it possible to achieve results in terms of development but also contributed to Canada achieving significant diplomatic credibility. Canada's long term involvement also allowed it to gain a strong position in the community of donor agencies working in Mali and to have considerable influence there. Finally, it seems evident that the sustainability of the investments made in sectors of this complexity can only be achieved over very long periods of time.

Recommendation #4

That CIDA country-program planners and decision makers be aware that investment in establishing electricity services is a long-term investment and that they must, in all likelihood, make a commitment for periods of up to twenty years or more.

Lesson

The effects of the project on the economic development of the affected regions could be maximized because the requisite subsidiary conditions for this development - water, raw materials (agricultural products) and favourable economic policies - were present.

Recommendation #5

That CIDA country-program planners, with a view to optimizing the planned infrastructures, ensure that a minimum of the subsidiary factors required for the development of the regions served by such infrastructures be present.

7.3 At the Project Level

Lesson

CIDA increased project planning effectiveness by retaining the services of a quality control and supply tracking specialist who commented on the pre-project engineering study carried out by HQI and other documents produced by that company, such as calls for proposals, contracts with suppliers, etc.

Recommendation #6

That CIDA project managers join forces with specialized professional resources, from inside or outside the Agency, needed for effective project planning and monitoring.

Lesson

This evaluation was the first *« Bamako-Ségou Very High Tension Connector Line »* evaluation. Thus, the evaluation team had very little analytic information and written opinions they could use to orient and support their work.

Recommendation #7

That all projects, whatever their nature and without exception, be subject to continuous performance measurement in accordance with the relevant standards established by CIDA.

Lesson

The impacts of the project could not be definitively demonstrated due to the absence of an adequate picture of the socio-economic situation in the regions affected by the project when planning took place.

Recommendation #8

That, within the context of result-based management, all project planning processes include a starting point analysis, including identifying key indicators.

Lesson

The close co-operation between Canada, the other donor agencies, the government of Mali and EDM, on the one hand, and the flexibility shown by Canada in managing its financial contribution, on the other hand, ensured that the Canadian technical assistance provided was well targeted, completely relevant and undeniably useful.

Recommendation #9

That any Canadian contribution to the execution of multi-donor agency projects be flexible enough to allow Canada to react, when necessary, to major constraints that were not identified or that were not present when project planning was carried out.