Canadian International Development Agency | Agence canadienne de développement international

Evaluation Study of the

PANAFTEL Project

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Canada

Executive Summary

Introduction

The purpose of this report is to present the results of an impact evaluation study of the PANAFTEL project, a large telecommunications project carried out by CIDA, from 1975 to 1994, in five francophone countries of West Africa: Senegal, Mali, Burkina Faso, Niger et Benin.

The study required a significant data collection effort, which included documentary research into CIDA's archives, 40 interviews in Canada and 60 in Africa, an evaluation mission in three countries (Mali, Burkina Faso and Benin) and two field studies of project impacts, one in Mali and one in Benin.

Development Context

According to UNDP's 1999 Human Development Report, three of the five PANAFTEL countries are among the poorest on earth. Niger's Human Development Index (HDI) is 173th among 174, Burkina's is 171th and Mali's is 166th. Senegal and Benin take the 153th and the 155th place respectively, their HDI however, are still lower than the average for Sub-Saharan Africa.

Indicators (1997 Data)	Mali	Burkina	Benin	Niger	Senegal	Sub-Saharan Africa
Human development index	,375	,304	,421	,298	,426	,463
Rank over 174	166	171	155	173	153	-
Real GDP per capita (PPP) $	740$	1 010$	1 270$	850$	1 730$	1 534$
Gender related development index	,367	,291	,405	,286	,417	,454
Rank over 143	136	141	129	143	127	-
Life expectancy (years) : Total	53,3	44,4	53,4	48,5	52,3	48,9
Men	52,0	43,6	51,7	46,9	50,5	47,5
Women	54,6	45,2	55,2	50,1	54,2	50,3
Adult literacy rate %	35%	21%	34%	14%	35%	58,5%
Men	43%	30%	48%	22%	44%	65,9%
Women	28%	11%	21%	7%	25%	49,6%
School enrolment (gross) % : Total	25%	20%	42%	15%	35%	44%
Men	31%	24%	54%	19%	40%	49%
Women	20%	15%	30%	11%	31%	39%
Human poverty index : %	52,8%	59,3%	50,3%	65,5%	49,6%	40,6%
Rank over 92	87	91	83	92	80	-
Population without access to (%):						
• **drinking water**	34%	58%	44%	52%	37%	50%
• **health services**	80%	30%	58%	70%	60%	..
• **sanitation**	94%	63%	73%	83%	61%	56%

The above table shows that human development remains very in all respects in the PANAFTEL countries, whether it is for life expectancy, literacy or schooling rates, access to drinking water or health services.

The idea of a Canadian participation in the development of telecommunications in West Africa emerged at the end of the 1970s, at a time when CIDA's development initiatives were inspired, as much by the political will to see Canada play a significant role in the development of French-speaking Africa, as by that of reaping the commercial benefits that might come with it. Canadian infrastructure assistance was therefore quite important and several transport and communications projects were undertaken for land-locked countries, among which the PANAFTEL project was the costliest and the most ambitious.

With the worsening economic difficulties experienced by these countries during the 1980s, infrastructure and its commercial interest became less of a priority for all donors, including Canada, and CIDA's programming was shifted towards rural development and the basic needs of populations, in particular, that of food security. Since 1990, the priorities of bilateral programs are to be found in new themes like social development through basic education, especially for girls, economic growth by providing assistance to microentreprises and cooperatives, and also good governance and support to decentralisation. The infrastructure sector is not anymore an important area of CIDA's assistance in those countries.

Project Description

The PANAFTEL project was executed in three phases from 1975 to 1984 and cost $171 M. Its major component was the construction of a micro-wave network between the capitals of the five countries, the "Réseau Dakar Cotonou" (RDC). Stretching over 3 500 km, counting 55 sites and allowing the transmission of 960 telephone lines and of television, the RDC was a major work, whose cost, including that of technical assistance for operations and maintenance, would have reached $240 M at 1996 prices.

In Phase III rural telephone systems were installed in regions without telephone service, in each country except Burkina Faso, who preferred to have ist long distance telephone network (excluded from the original construction) modernised. The project also included a very important institutional support component for telecommunications management. The table below presents the relative importance of project outputs and components.

Project components

Project outputs	Components	Phase I 1975-84	Phase II 1985-89	Phase III 1989-94	Total	Overall total	%
Physical Infrastructure	**Réseau Dakar-Cotonou (RDC) :** analogic segment: 3 000 km; digital segment: 500 km.	69 M$	17 M$	10 M$	96 M$	112 M$	70%
	Rural telephone : 10 local systems.	-	-	16 M$	16 M$		
Institutional Support	**Maintenance and operation of RDC :** maintenance procedures, training, replacement parts.	7 M$	18 M$	7 M$	32 M$	60 M$	30%
	Management systems and training of ONT .	-	6 M$	13 M$	19 M$		
	Other	-	5 M$	4 M$	9 M$		
Overall total		**76 M$**	**46 M$**	**49 M$**	**171 M$**	**171 M$**	**100%**

Project Performance

Overall, the project's performance has been excellent in the delivery of physical infrastructure and in developing the capacities of the telecommunications organisations to offer good quality service. The installation of an intercity long distance terrestrial network between the five countries has contributed to break their landlocked situation and has had a major impact on their economy and population.

The project's results are less obvious in the area of management strengthening and for rural telephone systems, since very few of the management systems developed by the Canadian technical assistance were successfully implemented, while rural telephone systems suffered in many cases from maintenance problems and were not designed in such a way as to facilitate telephone access to non subscribers.

Matrix of project results

Project outputs **Project goal /** **Project purpose**	**Community and individual level**	**Institutional and organisational level; capacity development**	**Macro level (policies, regulations, programs)**
<u>Outputs</u> **Réseau RDC** **Rural telephone** **Institutional support**	Installation of a long- distance telephone network covering 5 countries and 3,500 km Installation of 10 rural telephone systems covering sixty towns and villages	Training and assistance to the network's operating and maintenance. Design and implementation of management systems	No direct intervention at the policy level.
<u>Objectives</u> **External communications** **Internal communications** **Autonomous network maintenance and operation** **Management and financial independence of ONTs**	Good quality telecommunications between RDC countries and the sub-region Telephone service installed in regions accounting for 10-12% of population. Rural telephone systems created telecommunications links for governments, institutions, and populations in regions, with capitals, other regions and other countries.	The RDC is the backbone of telecommunications in Mali, Burkina and Benin Partially autonomy of the ONTs in the maintenance and operation of the network. Significant effects on the profitability of the ONTs, modest for other management systems Regional co-ordination of network operations	The PANAFTEL project has had little influence on telecommunications policy and on public enterprise reform
<u>Project goal</u> **Contribute to economic and social development** **Commercial benefits and partnership with Canada**	Major impact on social and economic development of the countries Telephone links create strong impact for isolated localities. Communications with parents working or living abroad CIDA's withdrawal deprives the countries of Canada's participation to the development of telecommunications	Improvement in the efficiency of governments, institutions and firms. Commercial breakthrough objective in West Africa not achieved. CIDA's withdrawal deprives the ONTs of a major partner in the development of the telecommunications and information technology sector.	The establishment of a long distance network in Mali, Burkina and Benin has been a structuring factor leading to the implementation of regional policies for bringing services to populations.

Key factors explaining project results

The major factor explaining project results are:

- **Canada's determination, at the ministerial level, at CIDA's level, as well as that of the executing agencies to succeed in putting in place the Dakar-Cotonou network and in insuring its take-over by the ONTs**

Right from the start, Canada showed a strong determination, that was not eroded by the difficulties first encountered during construction. Then, when faced with the ONTs inability to take charge of the RDC operations, Canada gave massive support to the reinforcement of their capacity to do so. Canada's will to insure the long-term success of the project was afterwards demonstrated by widening its assistance to the area of management. Even if this unwavering will came mostly from the need to protect Canada's reputation from being tarnished by project failure, it was the most potent success factor.

- **Canadian know-how in telecommunications and effectiveness of implementation**

The excellence of Canadian abilities and the effectiveness of their implementation by the executing agencies make up for the project's second success factor. Canada was the only country offering African countries an alternative to France in the areas of technology and human resources; moreover, it was being offered in French, which was a necessity for transferring know-how.

- **Partnership and willingness to work with Canada**

Although there was some resistance at the beginning, political authorities, ONT managers and personnel showed a great willingness in making the most out of the alternative offered by Canada. CIDA, for its own, developed an effective partnership all along the project.

- **Regional partnership between the ONTs**

The creation with CIDA's support of a regional co-ordination entity proved to be a very important success factor for the PANAFTEL project, since it favoured the technical well-functioning of the network and provided a useful context for project planning and monitoring and encouraged solidarity between the ONTs.

- **The well established institutional framework of the ONTs**

The project's performance was helped by the existence of the ONTs, which although being rather weak organisations, were guided by a clear mission and provided a stable institutional framework for the insertion could be inserted.

- **The Dakar-Cotonou network, a basic infrastructure**

The RDC was a basic infrastructure, essential for the development of telecommunications in these countries. It became the backbone of the national network in three countries, Mali, Burkina and Benin, were it is an essential infrastructure for economic activity. The proof of this decisive role is to be seen in the lasting duration of the network, still in use, even if it is obsolete, and in the desire of the ONTs to modernise.

- **Demand for services and strategic character of telecommunications**

Finally, a strong demand for telecommunications services and their strategic importance for the beneficiary countries, always put heavy pressure on the ONTs to expand services, which in turn, contributed to sustain their motivation towards meeting project objectives.

Policy Themes and Issues

- **Poverty reduction**

As the PANAFTEL project consisted in the installation of transmission infrastructure and in providing institutional support to telecommunications management, its beneficiaries were telephone subscribers located in the capitals and major towns of the countries, half of which were private subscribers and the other were government, commercial and institutional subscribers. Individual beneficiaries of the PANAFTEL project therefore belonged almost exclusively to higher revenue categories, as access for the poor was limited by the exorbitant cost of communications and by the small number of public phones.

The issue is to determine whether a project like PANAFTEL, with little direct impact on the poor, contributes to poverty reduction. The following three considerations may provide an answer :

- First, international experience proves that telecommunications are an essential ingredient for development, whose effectiveness is the greatest for poor countries or for those that are in the first stages of development.
- Secondly, the investments made through the PANAFTEL project, particularly the RDC long distance network, are of the very kind that that creates the strong macro-economic relationship between teledensity and economic growth. It can then be deducted that the PANAFTEL project has strongly contributed to economic growth of the beneficiary countries (or prevented further decline).
- Thirdly, in these countries where the majority is poor, economic growth has necessarily benefited the poor, although in varying degree, depending on each country's economic structure and policies. On the other hand, with respect to the project's specific effects, the RDC broke the isolation of regions far off from the capitals, where the population is mostly rural and poor.

- **Equity and access**

An investment program like the PANAFTEL could be considered as being unfair because it subsidises a small number of private subscribers, while telephone is out of reach for the mass of the population. Also, traffic volume for these infrastructures is often not sufficient to amortise the cost of investment or even to pay for operating cost, therefore private subscribers benefit from a consumer surplus, because the pay for the service at the average rate, whatever the marginal cost of the system to which they are connected. However, one cannot conclude that the project's investments were unfair, since if private subscribers were to pay for installing the service in remote regions, nobody would subscribe.

Moreover, inasmuch as these investments do not intend to favour private subscribers, but rather to open up regions or to extend the coverage of the telephone system the needs of government and economic operators, the servicing of private subscribers can be seen as a way to partly pay for the investment, rather than as a favour that creates an equity problem.

The equity problem can exist when the local network and connections to transmission installations are subsidised, and when some subscribers are connected without having to pay the just value for it. In the case of the PANAFTEL, local networks and connections where under the responsibility of the ONTs and it is possible that the equity problems may have occurred in some instances.

The equity of access objective for the poor was not clearly spelled out in the PANAFTEL, although the project contributed to it by introducing telephone service in regions and villages, where the majority is poor. The installation of public phones in a few villages has contributed to equity of access, however the fact that no specific approach for managing telephone access or for setting tariffs for non subscribers was

adopted to help reach the objective. Moreover, since maintenance systems in rural areas were not as efficient as in urban areas, equity of access in areas of low telephone density did suffer from a serious deterioration of service quality after the installation of rural telephone systems.

- **Gender Equality**

The issue of gender equality has been almost absent from the PANAFTEL, since it was not yet an issue at the time of project design and since it was considered as non existing for this type of infrastructure. The issue was more relevant for rural telephone systems, however all aspects of service delivery were the responsibility of the ONTs, who did not bother with gender equality.

Overall, field studies executed during the evaluation have found that telephone use and access are not equal for men and women, and that this depends upon the social status of women, upon their activities and upon cultural attitudes, rather than upon the lack of measures to facilitate telephone access to women.

Apart from access to automatic public phones or to privately operated public phones, it is difficult to think of any actions specifically targeted on the improvement of telephone access for women. Advertising telephone usage by women could be considered, or women could be informed about the usefulness and advantages of telephone for answering to some of their specific needs, for instance in the area of health services, to arrange medical appointments in far away centres, to obtain information, etc.

In brief, better telephone access for women appears to be a delicate area for direct intervention, and tbe best strategy could be to improve gender equality in other areas like education, health or employment, which will lead to a greater use of telephone by women.

Lessons learned

- **At the policy level**

1. Infrastructure such as the Dakar-Cotonou network and telecommunications infrastructure in general have an accelerating effect on economic growth which make them instruments for poverty reduction. Their efficiency is the greatest for very poor countries, like those of Sub Saharan Africa, as are the five PANAFTEL countries.
2. With PANAFTEL, CIDA was in a position to provide institutional support efficiently because of the leverage it had gained through the large investment made in the physical infrastructure. Its role at the institutional level would have been more efficient if it had participated in the policy dialogue over public enterprise reform, but this would have required consultation with the World Bank and another approach. The infrastructure services policy must have means that are in proportion to its intentions, in other words it will be difficult for CIDA to have real influence at the policy level, on the enabling environment or at the institutional level if it does not first intervene to provide physical infrastructure.

- **At the program level**

1. The decision to abruptly put an end, on the basis of new criteria, to an intervention started many years ago, can prevent achieving the objectives aimed by the project originally. This is what happened when CIDA gave up assistance to the telecommunications sector in West Africa, where the long-term partnership objectives in this strategic sector for the influence and presence of Canada were forsaken.
2. CIDA does not have at its disposal appropriate financing mechanisms for the needs of public service enterprises and for infrastructures projects in general, since grant financing is too generous and does not blend easily in the financing packages that may compete with those of other donors, like the

Agence française de développement or the European Investment Bank.

3. In spite of the countries' desire to pursue the relationship with Canada in telecommunications, the sustainability of CIDA's interventions has been undermined by the lack of a strategy to maintain the presence of Canada involving all the stakeholders.

- **At the project level**

1. All along the project, CIDA was unable to exert an adequate control over the results of institutional support activities by using the information supplied in the progress reports of the executing agency and of the monitoring agent, the reasons being that the monitoring of institutional support activities requires greater resources and effort than for an ordinary project, and that information systems used for reporting results are inadequate for institutional support. The successful execution of an institutional support project requires planning based on an in depth analysis of the context, integration of project activities in a political framework in order to make sure that success factors are present, close monitoring with constant CIDA involvement, and the possibility of suspending the assistance if commitments made by the beneficiary institutions are not respected, which, in turn, requires an appropriate approach for managing technical assistance contracts.
2. The PANAFTEL project was executed in a way giving priority to technical aspects, but not enough importance to socio-economic aspects and to access to telecommunications services in relation to the needs of subscribers and of the population at large. This approach has led to reduced impacts since few measures were taken to improve access to services. The planning and design of infrastructures must give sufficient consideration to economic and social aspects, otherwise, impacts will be reduced.

Conclusions

Given the fast advance of information technology, the special role of telecommunications in the poverty reduction process, and Canadian know-how in these sectors, they could be an important element of the Canadian poverty reduction strategy, and Canada may probably intervene more efficiently in this area, than in others where it tries to directly reach the poor.

The development of telecommunications infrastructure involves three CIDA policies, which must be consistent one with another with respect to the choice of the intervention sector (Poverty Reduction), of the mechanisms supporting private sector participation in infrastructure projects (Private Sector Development) and the financial involvement and type of CIDA intervention (Infrastructure Services).

- Poverty Reduction : determine if the development of telecommunications infrastructure in West Africa is an effective and relevant area of CIDA interventions for poverty reduction, and discuss the rationale and strategy in this respect.
- Private Sector Development : establish to what extent the project feasibility study and project development mechanisms of the Industrial Co-operation Program effectively encourage the participation of Canadian private firms to infrastructure projects and promote their use; at the same time the additional financial instruments that are necessary to make Canadian companies stand in front of foreign competition should be identified.
- Infrastructure Services : identify which actions could be undertaken by CIDA, to complement those of the Canadian private sector in the installation and operation of telecommunications infrastructure and determine the level of CIDA's financial support to these actions.

Given its size and its great impact, the PANAFTEL project can be considered as a major success of

Canada's foreign aid programs. On the other hand, the unique partnership created with the countries in the strategic area of telecommunications was interrupted and the potential for a sustainable commercial relationship involving the Canadian private sector was not achieved

Observations

CIDA's investments in capital infrastructure have decreased significantly in the past decade. In addition, the current trend is to use the private sector to develop telecommunication in many developing countries. CIDA's involvement in this sector is minimal. The PANAFTEL evaluation therefore leads to the formulation of observations rather than recommendations

Observation 1
Telecommunication and information technologies are essential to achieve the economic development that will lead to poverty reduction; they have also become essential to the poor in many circumstances. , In the context of poverty reduction, CIDA should consider the respective merits of various channels in support of programming in telecommunication and information technologies , bearing in mind that Canada is still a leader in these fields.

Observation 2
To ensure the effectiveness of its activities, CIDA should undertake projects to build institutional capacities, or to reform the enabling environment in telecommunication or in another sector, only in conjunction with activities supporting investment. The lack of a role for Canada or CIDA in supplying physical infrastructure often reduces CIDA's influence in proposing reforms.

Observation 3
The strengthening of physical infrastructure must be based on appropriate and competitive funding mechanisms. If CIDA is to play a role in funding infrastructure, appropriate financial instruments must be placed at its disposal. Consideration could be given to creating a funding agency than can make or guarantee loans, and contribute to financial packages in partnership with the private sector.

Observation 41
An in-depth analysis of policies relating to the sector is essential before initiating or becoming involved in policy dialogue.

Observation 5
When Canada is meaningfully involved in physical infrastructure or institution building, this can facilitate CIDA's participation in policy dialogue CIDA should also maintain regular dialogue with the World Bank, the architect of the reforms. Finally, CIDA should have ministerial contacts showing that its involvement is at a reporting level beyond the institutions involved.

Observation 61
CIDA could consider renewing contacts with PANAFTEL countries, especially Mali, Burkina Faso and Benin, in the telecommunications sector. This would require the development of a consistent strategy involving CIDA and other Canadian stakeholders.

Observation 7
Long-standing partnerships should be maintained between Canada and these countries despite temporary difficulties, especially if the sector concerned is a strategic one and an engine of development. The decision to withdraw from a sector should be made at the same level as the decisions to commit. In other words, the decision should have been made at the ministerial level for PANAFTEL.

Observation 8
Planning of CIDA's regional and bilateral activities should be better integrated, to benefit from the synergy among programs and projects.

Observation 9
When telecommunications firms operate in a foreign institutional framework which may be unfamiliar, such as ONTs, institutional support project planning should be based on an in-depth analysis following generally accepted management consulting practices. The involvement of local specialists will lead to a better understanding of constraints and an improved analysis of risk.

Observation 10
Institution building should be based on policy dialogue and seek to become a formal part of such dialogue.

Observation 11
Access to internal human resources - of sufficient number and with appropriate qualifications - will lead to improved monitoring of an institutional support project These resources should understand the issues in the project and be capable of entering into dialogue with recipient entities. CIDA should adopt contract terms and conditions that do not place executing agencies in a conflict of interest when an activity must be terminated or suspended because recipients fail to meet initial commitments.

Observation 12
To guarantee the availability of telecommunications services for the poor, who cannot afford to be private subscribers, and the effective operation of infrastructure put in place to serve them, CIDA should ensure that management agencies take steps to facilitate access to services, and that system maintenance is provided even if it is not cost-effective.