

Transportation and Economic Development in Botswana: A Case Study

A. V. LIONJANGA AND V. RAMAN

The transport sector in Botswana has played an important role in economic growth in the 23 years following independence. The country has been fortunate in discovering natural resources to finance economic developments, and sound policies have ensured that the transport sector grew at an affordable pace commensurate with demands for services. The system of national planning and project appraisals, major historical developments in transport, and policies that have evolved to encourage future growth are highlighted.

Botswana is a landlocked country in southern Africa surrounded by Namibia in the west and northwest, Zambia and Zimbabwe in the north and northeast, and the Republic of South Africa on its remaining borders. A map of the country is shown in Figure 1. The country has a relatively large area of 582,000 km²; however, the Kgalagari desert constitutes 75 percent of the land mass and is largely uninhabitable. In 1986, Botswana's population was estimated at 1.13 million, but it is growing rapidly at 3.7 percent per year. The majority of the people live in settlements along a north-south axis in the east of the country, adjacent to the desert. In this population belt are four centers classified as urban areas of which the capital Gaborone is the largest, with a population of approximately 125,000 people.

In 1966, Botswana had a pastoral and agricultural economy that was at subsistence levels. Per capita income was less than \$100. Employment in the public sector was minimal, industrial activity was almost absent, and educational facilities were poor. An insignificant number of citizens had graduated from universities. Such was the degree of neglect that for decades before its independence the Bechuanaland Protectorate had been administered from outside its borders—from Mafikeng in the Republic of South Africa.

The situation in the transportation sector was no different. A railway ran through the country and functioned as a link in the southern African rail network. The railway was used mainly by traffic between South Africa and the Rhodesias (Zimbabwe and Zambia) and the Belgian Congo (Zaire). Airfields were few and air services were minimal. One statistic drastically illustrates the paucity in the transportation infrastructure and capabilities—there were only 12 km of tarred roads in the entire country at the time of independence in 1966.

A. V. Lionjanga, Botswana Ministry of Works, Transport, and Communication, Private Bag 0026, Gaborone, Botswana 358509. V. Raman, Botswana Ministry of Works, Transport, and Communication, Private Bag 007, Gaborone, Botswana 358509.

Transportation projects were oriented toward meeting the commercial and political interests of their owners. Because all of the owners were foreigners, they had no incentive to develop transportation in Botswana to assist in the country's development. The country's geographical and economic situation, dispersed population, poor transportation infrastructure, and overwhelming dependence on neighboring states for transportation services made it imperative that Botswana develop the transport sector. Transportation was recognized as a service sector, that acted only as a catalyst and was rarely the prime mover of growth. Nevertheless, improvements in transportation were seen as prerequisites to stable population growth and balanced economic development.

PLANNING IN BOTSWANA

National Development Plans

Botswana adopted comprehensive national development planning to meet the aspirations of its people because the demand for investments always exceeded the financial and human resources available. Planning methods have been chosen that can establish priorities for directing the limited resources toward the most productive and efficient projects. Because Botswana has been a staunch proponent of democratic values, comprehensive consultations have been an essential feature of the process in evolving successive national development plans (NDPs), each running for 6 years. NDPs are first debated and approved by the nation's parliament, and later during a detailed midterm review of each plan a similar process of consultation and approval by the legislature is conducted. Consultation is a traditional practice used to make decisions on important issues affecting the community. One of the reasons behind the success of development planning in Botswana is that it reflects such norms of Botswana culture.

NDPs are initiated by the government through a major macroeconomic review that examines the state of the economy, potential impact of international and domestic developments during the plan period, availability of critical resources, and constraints affecting growth. The review indicates the possible framework for the plan and also highlights major policy issues. Studies on each sector of the economy are also prepared and together with the macroeconomic review are considered within the government and by the public. Ministers and members of parliament frequently discuss NDPs with villagers at Kgotla meetings to ensure that their views on

projects are ascertained and incorporated into the plan. A consensus then emerges on a program of investments and projects. After the NDP is approved, annual implementation plans are developed to cover its lifetime. Planning is coordinated by the Ministry of Finance and Development Planning, which sends officers to other ministries to assist in developing their sectoral plans. Frequent consultations between planners and between more senior levels of permanent secretaries and ministers ensure that plans are evolved and implemented after considering all viewpoints and with the commitment of all people concerned. Botswana's guiding principles in planned development are

- Rapid economic growth,
- Social justice,
- Economic independence, and
- Sustained development.

All development projects are formulated on these four principles and wherever possible also cater to the themes of job creation and rural development.

Project Appraisals

Projects and other economic activities are undertaken by Botswana that can be afforded and justified. Every project is subjected to rigorous economic analysis that considers all costs and benefits over the project's lifetime to ascertain its net present value and whether the internal rate of return is satisfactory. Such analyses include checks on the sensitivity of projects to variations in basic assumptions. The analyses indicate optimal choices between alternatives and permit different projects to be ranked when funds are insufficient and priorities have to be established. Normally, all quantifiable and non-quantifiable factors are addressed including social and environmental aspects where applicable. Projects also go through a cycle of studies to examine their feasibility, followed by a detailed design and an updated economic appraisal, and ending with a review after the project has been implemented. Considerable use is made of microcomputers at various stages of project analysis.

Botswana receives financial assistance for projects from a wide spectrum of bilateral and multilateral agencies and always attempts to meet their technical investment criteria. Often, project appraisals by these agencies constitute a second view of projects. Botswana government officials try to prevent such reviews from unduly delaying project implementation, but these officials consider it better to invest wisely and correctly than to inadvertently commit errors by hurrying matters. An additional aspect of project implementation is the commitment of government funds for future operating, maintenance, and replacement costs.

TRANSPORT DEVELOPMENTS SINCE 1966

Within the framework of the NDPs, the government has always set aside at least 15 to 20 percent of annual investments for the transport sector, reflecting its importance in the overall economy. Further, in most years, transportation has received

more investments than any other sector in the national economy with the proportion of total funds committed often exceeding the percentages mentioned.

In the first two decades following independence, investments in transportation mainly consisted of building infrastructure although the government did acquire a fleet of vehicles for its own operations. Of the three modes—rail, road, and air—government investments were not made in railways because the railway was owned by Rhodesia Railways Ltd., a company based in Southern Rhodesia. However, Botswana did construct low-standard branch lines to Morupule and Selebi Phikwe in 1972 that made the establishment of a coal mine and nickel smelter feasible. Existing airfields were improved, but air transportation was not given priority in the early years. Therefore, the majority of projects undertaken were the construction of new roads.

Government policy for developing the road infrastructure was aimed at striking a balance between major road construction and the improvement and upgrading of roads serving rural areas. The major thrust was centered on establishing an axial, paved road running through the populated eastern side of the country linking Botswana with its southern and northern neighbors and on building spurs from this road to settlements. International links with Zambia were strategically important in the difficult period of Rhodesia's unilateral declaration of independence. Following Zimbabwe's independence in 1980 and the formation of the Southern African Development Coordination Conference (Angola, Botswana, Lesotho, Malawi, Mozambique, Swaziland, Tanzania, Zambia, and Zimbabwe), paved road links with Zimbabwe and Zambia took on added importance in providing improved transportation routes to facilitate trade and as alternative routes in the event international sanctions were imposed against the Republic of South Africa resulting in a South African border closure. The result of this road building program was that Botswana's road network in mid-1989 had increased to approximately 2 400 km of paved and 2 200 km of engineered, gravel roads.

Certain infrastructure projects were undertaken as essential components of developments in the mining sector such as the branch railway lines already discussed. In addition, two connecting roads were built to appropriate standards from the eastern highway to the mining towns of Orapa and Jwaneng in 1970 and 1980, respectively. Without these transportation investments, the exploitation of minerals at these locations would have become more expensive and less profitable for the country. Continuing this trend, Botswana Railways (BR) is constructing a 175-km branch line from Francistown to Sua Pan that will assist in exporting about 700 000 metric tons of soda ash and salt each year. This railway line is expected to greatly assist in making BR profitable within 2 years. Although the justification for these specific roads and railways was the particular mining projects they served, there have been spinoffs to the economy from the completed infrastructure that were envisioned but not completely quantified during project appraisals. For example, the road to Jwaneng is the first stage of the link to the western settlement of Gantsi and thereafter to Namibia, a project now being studied. The branch railway for the nickel smelter at Selebi Phikwe has encouraged other industrial activity and the development of the settlement as an urban center.

In 1974, the Botswana government decided to nationalize the railway to integrate it with the national mainstream to help in development of the country. However, the policy was difficult to implement without Rhodesia's whole-hearted agreement, which was not forthcoming. Other more pressing demands also got higher priority. The independence of Zimbabwe gave this project a push and the takeover was finally achieved in 1987. As a result, considerable investments have been made during the last 6 years on purchasing the railway, rehabilitating tracks, establishing maintenance facilities, installing communications and train control systems, procuring rolling stock, and training employees. The government takeover and expenditures together with the Sua Pan branch line has led to the creation of a sound rail transport sector in Botswana.

The end of the second decade following independence also saw the establishment of a major international airport at Gaborone (the Sir Seretse Khama Airport, opened in 1984). As envisioned, the facility has led to increased direct regional and intercontinental air links, providing a boost to tourism and business activities. In addition, the government decided to establish a national airline in the early 1980s. After a study and with some considerable deliberation, a decision was made to revamp national and regional air services by additional investments in Air Botswana. From 1987 to 1989, maintenance facilities were established and new planes purchased, which considerably increased Botswana's civil aviation capabilities.

TRANSPORTATION POLICY FRAMEWORK

Need for Policies

At every stage in the last two decades, transportation investments were made that were required for either strategic or developmental reasons. Timing for these projects was closely coordinated with actual transportation needs and availability of funds. During this period, the lean financial situation reinforced a conservative, pragmatic approach to making investments. Only recently has Botswana had considerable surpluses from the export of minerals. However, these accumulated reserves are not being squandered, but are being carefully managed to be used to develop productive sectors that could generate future growth in the economy.

The priority in the past two decades has been to establish infrastructure; in this the nation has been largely successful. Although considerable infrastructure has still to be developed, the major, initial tasks are complete or under way. Now that all the transport modes have started developing and are under Botswana's control, coordinated intermodal policies are necessary to get the best out of the existing infrastructure. A policy framework has been evolved, the primary objective of which is to enunciate principles that will provide appropriate, safe, efficient, and cost-effective services in the sector, so that transport can aid the development process in the country.

Government's Role in Infrastructure and Investment

The government already plays a major role in the transportation sector by virtue of its policy of assuming responsibility

for its infrastructure. With a few exceptions, all major investments in infrastructure have been the government's responsibility. The sparsely populated terrain, desert and topographical conditions (flat land but high drainage requirements to deal with flash floods), as well as a shortage of good natural construction materials, combine to make the provision of infrastructure technically difficult in Botswana and expensive in per capita terms. For practical considerations, it is sensible to continue with the existing policy on the provision of infrastructure.

In the exceptional cases in which infrastructure is built by private organizations for public use, the standards of design and construction will need to be approved by the relevant government authority. Because vast sums have been spent on developing infrastructure, it would not be prudent to allow privately owned transportation infrastructure to be constructed for private use, when existing transportation networks could be more intensively used or expanded economically to accommodate additional traffic.

The policy on further development of infrastructure will be to consider projects on the basis of economic justification with particular consideration of nonquantifiable strategic and social factors in individual cases, including environmental aspects. However, this approach must be tempered by the macroeconomic resource scenario as reflected in the midterm review of the current NDP, in which the potential for significant growth in revenues from mineral developments must be considered to have reached a plateau. This consideration and the nationwide shortage of skilled manpower are the limitations within which successive NDPs will set global priorities and indicate the resources available for individual sectors, including transportation.

The mosaic of investment projects will also develop from the roles visualized for each transportation mode and the linkages between various modes. The modes themselves will have corporate plans (if they are corporations) or indicative plans (if they are not) that should evolve through some degree of market research and public consultation. Presently, it is considered unlikely that the railway infrastructure will be expanded after the Sua Pan branch line is completed. For roads, the government would like to eventually complete all the international links (particularly to Namibia) and connect the district centers with an all-weather, engineered (and preferably paved) network that will be supplemented by feeder roads of appropriate standards. (Two out of 10 district headquarters do not have satisfactory access.) For civil aviation, a major airport is under construction at Kasane in the north to cater to tourists and to provide safe air access in that area. A flight information region is being established with a view to effectively control Botswana's airspace and to improve flight safety in the country. Incremental improvements to other major airfields will take place as justified by traffic volumes.

Linkages that will be considered between the modes to decide on projects will be trade-offs between options (alternative investments as well as other policy options) to get the best transport product mix within the context of available macroeconomic resources. For example, investments in road-rail container terminals could take some heavy-vehicle traffic off the roads, resulting in more intensive use of rail infrastructure and permitting the postponement of road reconstruction. Passenger transport subsidies are a policy option in some rural areas where there are problems of poor roads and

isolated villages. Similarly, there is justification for a modest rural air service that would limit vehicle movements on poor roads.

Leaving aside the provision of infrastructure, government investment policies in transportation will vary in the different subsectors, depending on the characteristics of the mode, the government's share of activities in it, and the mix of policy instruments available in each case.

TRANSPORTATION OPERATIONS AND REGULATION

Botswana has a market-oriented economy because the government generally views free-market activities as an efficient method of supplying goods and services to meet demands and as a creative outlet for entrepreneurs.

The transport sectors of other developed free-market economies have reached their current state of development through a mixture of open-market activities and regulatory policies. No economies have been left free for any extended period of time to operate in an entirely *laissez-faire* manner. There are useful lessons to learn from this experience. Although the government appreciates the principle of competition in the market place to achieve efficiency in transportation services, it will need to intervene to avoid competition that is wasteful in resources. Sensible regulations will help nurture the transportation sector until it achieves a measure of growth and maturity and meets planning objectives. Because competition exists between modes and within some modes, the government will need to watch for destructive anticompetitive behavior. These approaches, which have evolved over the past two decades out of pragmatism and which are considered least wasteful of resources, are in between the extremes of *laissez-faire* policies and total state ownership. Because Botswana is a large country with a small population and limited resources, this is the sensible path to take. If pragmatism were to be replaced by extreme views in formulating policies in the sector, inefficient and high-cost transportation services would result.

Road Transport Operations and Regulations

For road transportation, the government will continue to try to influence matters through appropriate regulatory and promotional policies, but will not enter directly as a participant except for transportation on its own account. It is desirable that a healthy, indigenous, road transportation industry develop in Botswana. This objective provides an economic sector for entrepreneurial activities and job opportunities for citizens as well as for the strategic reason of developing an important transportation capability in a landlocked country. One of the aims of regulation in this subsector is to provide the means by which such an industry can develop. Presently, offshoots of large transportation companies from neighboring states dominate road transportation in the country. In 1987, regulatory measures were introduced to stem this flood and to begin the process by which domestic companies could develop and capture market shares. This process will be intensified through emphasizing citizen shareholding in the companies and the plans of these organizations to establish maintenance

facilities and bases in Botswana as factors to permit entry into the industry.

Because road transportation in Botswana is closely tied to cross-border traffic (mainly imports) within the Southern African Customs Union, the serious difficulties faced by Botswanan companies in obtaining permits in the Republic of South Africa for hauling goods has been a significant deterrent to entrepreneurs. Botswana, Lesotho, and Swaziland have been jointly negotiating with the Republic of South Africa for several years for equality in cross-border traffic and equitable arrangements to regulate this traffic. Recently, progress has been made on this matter.

Besides encouraging local participation, regulations are also required for safety standards, protecting the existing infrastructure from damage, monitoring and gathering information, and for avoiding harmful or unfair competition in certain areas. Developed countries, after reaching appropriate stages of growth and maturity, have found regulatory environments in road transportation a hindrance to further growth. A quality control approach is now the favored trend in such economies. The Botswana government considers these trends will provide useful guidelines for developments in the distant future, but for some considerable time to come the areas discussed will need to be regulated.

Road passenger transport will be regulated for safety aspects, frequencies of services, and prices charged to the public. There needs to be no discussion on the desirability of ensuring safe means of transportation for people who wish to travel by road. There are, however, views that prices and frequencies of services charged should be deregulated. The main differences between Botswana's situation and that of other countries, for which such deregulation has produced benefits, lie in the dispersed population and low traffic levels prevalent in the country. Regulation of timetables and tariffs is considered by the government an appropriate method of protecting the public on long-distance routes. However, within cities only maximum tariff regulations are presently used. Consideration will be given to eventually establishing bands of fares within which operators could charge tariffs to encourage competition. The tariffs are being set using computer models of road operating costs after ascertaining actual conditions of seat occupancy on various routes. These are reviewed periodically.

Transportation in the cities is presently provided by licensed taxis and minibuses. Because of the growth in city populations in the past decade, service improvements are desirable, including elements of time-tabled services on scheduled routes and the ability to call for taxi services from cab ranks. Appropriate methods will be studied and implemented, starting with Gaborone, which has the largest problem. Improvements in city transport operations will also be facilitated by increases in road widths, divided lanes where appropriate, signaled crossings, lay-bys for public transport vehicles, lighting, and other changes. These improvements will evolve and be implemented gradually. Suitable methods will be considered to strengthen the abilities of urban authorities to deal with transportation matters.

Rail Transport Operations

For rail transport, BR is a hybrid commercial enterprise with the government having exclusive modal operating rights to

avoid wasteful competition within the subsector. However, BR does not monopolize the sector and has to compete for traffic with other rail routes outside Botswana, with road transport, and even with air services. The railway is expected to improve its services and market itself aggressively to retain a proper share of the available traffic. In exceptional cases and only after careful consideration has been given to all factors, the government might rule that certain kinds of traffic move only by rail. Presently, such instructions apply to most petroleum products because the government wants to maintain high levels of petroleum stocks, which make it uneconomical to use more expensive road transport.

Marketing of rail services in Botswana was characterized by benign neglect in the period leading to the railway takeover. Reliability of train services, running block and unit trains, better information to customers about their consignments, the ability to quote competitive tariffs, and the need to orient the BR work force toward efficiency and profits are all facets of the expected improvements. In addition, BR must use two container terminals planned for Gaborone and Francistown as important aids in modernizing itself and reaching for new markets.

Air Transport Operations and Regulations

During the last four decades, civil aviation all over the world has been subjected to a regulatory framework controlled by individual states acting in concert through the International Civil Aviation Organization. As a means to share the market for international travel, the principle that sovereign states have the right to decide how their airspace should be exploited has been accepted. When properly administered by civil aviation authorities, this regulated environment has led to the development and growth of air transport markets and safe air travel facilities. In many developed countries, a stage has been reached where free-market operations can now accelerate growth better than regulation, leaving civil aviation authorities the task to set and control quality and safety in services.

In Botswana, civil aviation is in a comparatively embryonic stage and the government has opted for a regulatory system to help the industry grow. The government desires that the regulatory framework be eclectic, take into account international trends in aviation, and aim to ensure the highest possible standards of safety, efficiency, regularity, security, and economic viability in air transportation.

After several years of permitting relatively free entry into the air transport market, the government did not see positive results either in terms of cost-effective air services provided to the community or in the form of local air transport capabilities with associated local skills. Air Botswana therefore was created as a parastatal corporation and given the exclusive concession as the national air carrier for scheduled domestic and international traffic. The aim is to foster orderly growth in air transport without excluding private enterprise in the process. There are many areas in which other operators can supplement scheduled services so long as they meet the technical regulations of the government.

Because the government owns the national air carrier and also regulates the market, it is possible that conflicts of interest may occur. The guiding principle will be to give priority to

national interests, the interests of the traveling public, and those of Air Botswana—in that order. No concessions will be given on matters dealing with safety and, in any case, commercial considerations will move the airline toward high safety standards. It is the government's conviction that these monitoring arrangements can work in Botswana, as they have elsewhere.

PRICING AND TAXATION IN TRANSPORT

Botswana is committed to the principle that economic activities be undertaken only when they can be paid for. Furthermore, users of services should pay for what is used and unless there are clear benefits to the economy, financial subsidies should be avoided. Subsidies must meet the test of high comparative economic and social returns before they are instituted because resources spent on the subsidies in one sector could be used productively in another.

User charges in each of the transportation subsectors will need to be set in a manner that covers marginal or avoidable costs at a minimum and to make a contribution toward meeting full costs wherever possible. The government's transportation enterprises will be expected to provide reasonable returns on the investments made with their first target being to break even financially. The market-oriented, mixed-economy approaches for transportation previously discussed will allow reasonable competition between and within modes and also permit pricing mechanisms to operate. This environment is expected to encourage efficiency and to ensure that the sector pays its way.

Profitability is particularly required in the context of developments in the mining sector, which has been the main resource base for the economy since independence. As previously discussed, the growth of revenues from mining will start tapering off soon. Other productive sectors of the economy will have to offset the revenue loss if Botswana is to continue its development at a sustainable pace. In the past, government invested in the transportation infrastructure (mainly roads) and maintained it without expecting a direct return in the form of revenues. Economic benefits were envisioned through increases in the efficiency of transportation operations or in higher levels of general economic activity resulting from the provision of the transportation services. Because of the prospect of a reduced, or at best a static, resource base, it is important that the transportation sector meet its costs. However, it is unlikely that transportation can become a major contributor to state revenues because unlike other service sectors the volume of annual transactions (turnover) is often a fraction of total investments. Profit margins are low, and high levels of taxation would inhibit appropriate growth in transportation services.

Rail Pricing

An important aspect of BR's competing effectively with others in the market is its ability to price its services correctly. Railways have traditionally charged for their services on the principle of what the traffic can bear. This practice often led to large-scale cross subsidizations as well as the pricing of trans-

portation services well below marginal costs of operations. BR's tariffs will be set at levels that will not be below marginal costs. Thereafter, market forces will decide to what extent customers can be charged to ensure that BR recovers all its costs and also provides a return on the investment made by the government.

The government has decided that BR's full costs will include all operating expenditures, interest payments on loans, provision for future replacement of assets in a sinking fund, and provision for pensions. Assets will be revalued periodically. In this way, the state will provide the initial funds for railway services and BR must structure itself financially toward maintaining the organization as a profitable concern. It is envisioned that after the initial refurbishment the government will not need to provide funds for replacement of assets.

In its present form, BR is not required to pay taxes because it is a governmental department. Taxation would unnecessarily increase the cost of transportation services and coupled with a relatively low traffic base and high annual fixed costs, BR would find it difficult to retain its market share. But once a degree of stability has been reached, profitability targets could be set for BR without driving away customers. As the sole shareholder, the government would be entitled to dividends from profits that may accrue.

Road User Charges

It is the aim of the government that expenditures on roads and road transportation facilities be recovered from road users. A number of options are available to facilitate this, including toll roads, taxes on fuels, license and permit fees for freight and passenger public service vehicles, and customs and excise duties on vehicles and spare parts.

Tolls would require the construction of plazas with a permanent staff for collection and to allow rapid flows of traffic through gates. The public considers tolls an inconvenience unless they are associated with limited-access highways that allow higher average speeds. It will be many years before traffic levels in Botswana justify such highways, and tolls should not be implemented until then. Taxes on fuels are easy to administer and proportionate to distances traveled (fuel consumed), but are not proportionate to vehicle weights; heavier vehicles, which cause the most damage to roads, will not pay their proportionate share. Transit vehicles, which take little fuel in Botswana, will also not pay in proportion to their economic costs. Vehicle license and permit fees are not difficult to collect and can be configured to impose proportionately higher levies on heavier vehicles. For example, flat-rate, time-based fees could act as an incentive to use vehicles more intensively. However, the government for the present will use customs duties, taxes on fuels, and vehicle license and permit fees to recover costs.

The level of such fees must, at a minimum, meet the variable costs of road maintenance. The initial steps toward implementing this policy have been taken recently, and in the process legislation has been approved that differentiates between road traffic pertaining to Botswana (internal, imports, and exports) and transit traffic. Ultimately, the government will seek to recover fixed and variable costs of maintenance and the costs of replacing roads. Although the state will pro-

vide the initial capital to build roads that are economically justified, road users should eventually pay for their maintenance and depreciation. This arrangement is also desirable because the roads' competitor, BR, is expected to provide for replacement of infrastructure as well as full maintenance costs and competition between the modes should take place in a balanced environment. At an early stage, the government will seek to ensure that transit traffic bears its full costs because with foreign companies dominating the industry the transportation of these goods adds very little to the economy of Botswana.

Further reasons for taxes on fuels include the need to find additional sources of revenue, discourage the drain of foreign exchange on a commodity in short supply, and fund improvements in the road network from a safety viewpoint. But there are obvious limits to what can be raised from this source, and these levies will not be increased to the extent of deterring entry into the road transportation industry. Similar reasons underline duties imposed on equipment used in road transportation, though under the terms of the Southern African Customs Union Agreement Botswana has limited fiscal discretion and is being compensated for this loss by revenues from the common customs union pool.

Pricing of Air Services

In the airline industry, empty seats on a plane are a lost product. Therefore, Air Botswana will seek to fill marginal seats with concessional tickets that will assist in making the airline profitable and in creating a market at the same time. For normal business travelers, the fare should recover full costs plus a profit. Conditions will be attached to concessional fares to prevent sharp reductions in the number of full-fare-paying passengers and will not be pegged below marginal operating costs. Substantial increases in revenues have been achieved in the first few months of implementing this policy.

Because the market segment of business travelers is largely inelastic to variations in price, attempts to generate profits in this segment could result in the tendency for the airline to charge very high full fares without seeking to reduce costs to become efficient. In monitoring this quasi-monopolistic situation, the government has special responsibilities to seek reasonable levels of fares from Air Botswana before approving them.

In addition, the government will seek methods of raising revenues to meet some of the costs of providing civil aviation infrastructure and services with the aim toward balancing operating and maintenance budgets. Civil aviation levies such as landing fees and charges for licenses and examinations must be in step with regional trends. Certain direct levies such as passenger taxes have been considered and will be introduced at the appropriate time. Indirect levies such as taxes on aviation fuels and charges from rentals for kiosks, advertising space, and use of other airport facilities will also be considered. However, for a long time, Botswana will not achieve traffic levels in civil aviation that can generate sufficient revenues through taxes to finance the capital or replacement costs of infrastructure, and therefore the government will not seek to recover these costs.

TRAINING AND DECENTRALIZATION

The government is committed to raising the levels of skills in the country and to training citizens to run the economy. Decentralization of skills will lead to greater job opportunities for citizens, which is a desirable goal. A spectrum of educational disciplines and skills is required by the transportation sector to achieve full decentralization particularly in engineering, economics, accounting, and administration.

In addition, training to improve skill levels must be considered an intrinsic part of operations of any industrial enterprise because this increases productivity and enhances safety. Organizations in the transportation sector are no exception. Training as a component of any activity in the sector has been, and will continue to be, emphasized by the government. For example, purchases of equipment must be accompanied by training, and expatriate officers providing technical assistance will be expected to train counterparts.

Because the transportation sector is a major user of technical manpower at different levels it has an important role to play in formal engineering training. A decade ago, the government was the pioneer in training craftsmen and technicians in the automotive sector in relation to maintaining its own vehicle fleet. At higher levels, the sector has played a role in the formative stages of engineering courses in the country. In the future, transportation organizations will provide practical training for engineering students at institutions in Botswana and will continue to influence curriculum development to obtain the manpower most appropriate to meet the sector's needs.

PROMOTIONAL POLICIES

Owing to historical and geographical factors, at the time of independence Botswana inherited a transportation sector largely controlled by foreign interests. Therefore, the policy of the government has been to promote Botswana's participation in its own transportation sector. What led to the evolution of this policy was not a mere sense of national pride but rather the need to integrate transportation with national development, transfer certain economic activities to Botswana that were undertaken elsewhere, and reduce the nation's total dependence on its neighbors. However, a paucity of resources and higher national priorities in other sectors have caused progress in this matter to be slower than desired. Additional measures need to be evolved to increase national participation in the sector in the coming years.

Establishment of a framework within which it will be possible for a Botswana road transportation industry to grow has been previously discussed. However, in addition, access to capital for the industry needs to be investigated. Although capital ought to be no easier for transporters to obtain than for entrepreneurs in other economic activities, the present conditions for borrowing funds are probably more stringent for transportation activities. Lack of skills at various levels in citizen road hauling firms is a major impediment to their growth. It is necessary to consider methods by which such firms can improve their capabilities, particularly at management levels. The government will encourage such activities.

A particular service that the government wants to foster is essential transportation in rural areas. Several areas of the

country suffer from poor transportation facilities because of the existence of dispersed small villages served by poor-quality roads. Available traffic volumes and the passenger tariffs that can be charged prevent operators from offering viable services. Until the road network expands and replaces the sand tracks existing in the remote areas, operating costs cannot be reduced. If operators charge passengers more in rural areas to make up their losses, the very people who need support will be penalized further. This situation provides the rationale for the rural bus subsidy scheme whereby operators who run weekly return and mail service to selected destinations will be subsidized for every bus-kilometer traveled, depending on road conditions and seat occupancy for each route. The scheme has recently been reviewed and the subsidies will be periodically updated using computer models.

It is also government policy to encourage citizen contractors in construction activities, including road construction and maintenance. Without compromising quality, financial guarantee requirements are reduced for such firms and assistance will be provided to help them learn the skills of tendering, controlling projects, and monitoring costs. Certain activities are also reserved for citizen firms as an inducement for them to enter the field.

A specific promotional policy in civil aviation is to develop rural air services. A nucleus of destinations will be connected in southern and western Botswana that are not properly served by other transportation modes. Essential scheduled services will be provided through subcontracted charters so that costs can be kept low and services can be withdrawn with minimal exposure if they are not well patronized. The services will feed into the existing Air Botswana network.

INTERMODAL ISSUES

Containers have introduced a new element in transportation making it possible to move goods securely and rapidly using several linked modes of transportation with acceptable levels of total costs. Botswana has been largely left out of the benefits this revolution has produced mainly because container-handling facilities in the country are minimal, resulting in a forced dependence on the container-handling capabilities of neighboring states. As a corollary, road transportation is presently the main mode for small customers to move containers to their premises. Coupled with permit restrictions in the Republic of South Africa, this lack has resulted in the transportation of containers being dominated by foreign road haulers. The government seeks to change this situation and transfer a proportion of this activity to the Botswana economy. Containerization is also perceived as a potential growth area in Botswana both for its overseas and regional trade and to facilitate modal transfers in the country between railheads and places like Maun to which the paved road network is expanding. The government has decided to construct two container terminals at Gaborone and Francistown that will be serviced by road and rail modes and will be common user facilities. These facilities will also provide Botswana with flexibility in routing its external trade in the event of problems with South African routes. Additionally, these terminals will facilitate the introduction of through-bills of lading for Botswana cargoes by shipping lines.

As mentioned previously, the government does not intend to resort to regulation or taxation to encourage particular modal choices among transportation users. Exceptions to this principle will occur when economic considerations (and ecological ones in the future) clearly lead the government to a different modal choice than that made by a transportation user from a narrower perspective. Government will also intervene in the case of emergencies and where national interests are of overriding importance.

For passenger transport, the government would like the different modes to supplement one another. The modes are not competing for traffic to destinations that are only connected by roads and do not have rail services or airports. But where the modes compete, market forces should decide the best product mix that should emerge on the basis of the preference of travelers and their reaction to prices. Although agencies of the government currently set prices for the modes, the various services offered are meant for different target groups. The principle that tariffs should not be below mar-

ginal costs will bring considerable efficiency into these arrangements.

CONCLUSIONS

The framework of policies and planning perspectives within which Botswana's transport sector has grown from a negligible size to a size at which it has considerable capabilities has been described. By using rational methods of developing this service sector according to demands, the future development of transportation in Botswana will continue to provide a catalytic effect on the country's economic development.

ACKNOWLEDGMENT

The authors would like to thank the government of Botswana and, in particular, the Permanent Secretary, Ministry of Works, Transport, and Communications, for permission to write this paper and for encouragement.