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Making Government Smaller and More Efficient: The Botswana Case

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Making Government Smaller and More Efficient: The Botswana Case

A report prepared by

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Authors' foreword

This report presents the synthesis of a study commissioned by the Norwegian Ministry of Foreign Affairs. It was jointly undertaken by the Christian Michelsen Institute, Botswana Institute of Development Policy Analysis and the Foundation for Research in Economics and Business Administration during 1998/99. The mandate of the study was to provide a research-based, in-depth analysis of the public sector in Botswana. The purpose of the study was three-fold:

1) Assess the performance of key public service sectors compared to a sample of other developing countries;

2) Assess the future scale and scope of government given:

   a) Its future revenue base, which is likely to decline substantially during the next decades;
   b) The future challenges facing the government of which the HIV/AIDS epidemic and widespread poverty are the most central;
   c) The need to sustain growth and development in the face of a relative decline in mineral revenue.

3) Draw lessons for other developing countries and donors.

The study resulted in 6 research papers (see the reference list at the end of the report), which were submitted to the Ministry of Foreign Affairs in the form of a draft report, including an introductory chapter and a chapter summarizing the findings and drawing of lessons for other developing countries, in August 1999. The present report is a synthesis of these research papers. It focuses on the transitionary problems facing countries which have been dependent on transfers of foreign exchange for a long period of time when such transfers level off, and the role and performance of the government in a comparative perspective.

Bergen, 19 June 2000

Abbreviations

BCL	Bamangwato Concessions Ltd.
BDC	Botswana Development Corporation
CSO	Central Statistics Office
CTO	Central Transport Organization
DABS	Department of Architecture and Building Services
DPPS	Department of Printing and Publishing Services
FAP	Financial Assistance Policy
GDP	Gross domestic product
HDI	Human development index
IMF	International Monetary Fund
NDP	National Development Plan
NEC	Not elsewhere classified
OECD	Organization of Economic Cooperation and Development
PPP	Purchasing power parity
SACU	Southern African Development Community
SME	Small and medium-sized enterprises
UNDP	United Nation's Development Program

Fact sheet Botswana 1998

Population	1.6 mill
Population density	3 per square km
GDP per capita	USD 3,070
GDP growth rate	3.5
Life expectancy	46 years
Infant mortality rate	62 per 1000 live births
Under 5 mortality rate	105 per 1000 children
Urban population	49 per cent of total
Government revenue	44.4 % of GDP
Exports	35 % of GDP
Imports	33.8 % of GDP

Industrial structure:

Agriculture	3.6 % of GDP
Industry	46.1 % of GDP
Services	50.4 % of GDP

Executive Summary

This report assesses the role, scale and scope of government in Botswana; a maturing mineral-led economy. It discusses the development problems commonly found in countries that receive large inflows of foreign exchange from exports of minerals. A much larger share of such income accrues to the government than from other sources of income. Therefore, these countries tend to have a large public sector. When mineral exports level off, government has to increase taxes or reduce spending in order to avoid escalating budget deficits. This report argues that aid transfers beyond the recipient country's absorption capacity have similar effects.

In Botswana, diamond mining accounts for about 50 per cent of government revenue directly and another 17 per cent indirectly through interest on accumulated reserves generated by the mining sector. The mineral sector pays about 60 per cent of its value added in taxes, royalties and dividends to the government. Other industries are only taxed at an effective rate of about 25 per cent, and the corporate tax for manufacturing is as low as 15 per cent. Assuming stagnation in mineral revenue, government revenue will decline from the present 42 per cent of GDP to about 30 per cent in 20 years. Consequently, government expenditure relative to GDP has to be reduced by at least 10 percentage points of GDP. This requires a major restructuring of the public sector and a redefinition of its role in the economy.

The Botswana Government has ventured into most aspects of economic and social activities. This it has done not for ideological reasons, but in order to get socioeconomic development off the ground in the absence of private enterprises and entrepreneurs. Over time, government provision of goods and services has created high barriers to entry for the private sector and has become part of the problem rather than part of the solution. Furthermore, lack of focus has over-extended government implementation capacity and undermined quality in basic public services such as health and education.

The quality of government core services is assessed through a comparison to a sample of 66 developing countries and, at a more detailed level, to a sample of 6 countries. The comparison shows that Botswana spends much more on education than the sample average. Yet, Botswana scores below average on educational attainment and literacy rate, where performance is close to that of Tanzania. Relative performance is somewhat better in the health sector, but Botswana appears to obtain health at a higher cost than the sample averages. While primary health care appears to be highly cost-effective in Botswana, expenditure on hospitals appears to be less effective and it appears to have worsened over time. The recent surge in the HIV/AIDS epidemic has put a tremendous strain on the health sector, and has reversed and almost wiped out the improvements in health conditions achieved over the past 30 years.

A high incidence of poverty was singled out as a central explanation for below-average performance in educational attainment. This because poor people cannot afford to send their children to school, even if it is free of charge. The larger the share of the population that lives in poverty, the slower the human capital accumulation and the slower the economic growth. It has, in fact, been established that initial income distribution is a strong predictor of future growth; i.e., the more equal distribution at the outset, the higher the subsequent growth. In Botswana, 38 per cent of the population lives in poverty in spite of the fact that the country is a middle-income country and has been so for more than a decade. In order to accelerate the accumulation of human capital, and thereby broad-based economic growth, the poverty problem urgently needs to be addressed.

This requires redefinition of the role of government, a clear focus on priority areas and strengthening the capacity to *implement* programmes and projects. The Botswana government is deservedly praised for being uncorrupt, prudent and high scoring on the quality of bureaucracy compared to the sample average of the 66 countries. Nevertheless, the sheer size of government has outgrown its capacity for effective policy implementation.

Typically between one half and three quarters of total aid transfers accrue to the government in recipient countries. When aid flows level off, or even dry up, aid recipients face a similar situation as the one described for Botswana. Tanzania and Uganda, for example, have both downsized the public sector by more than 10 percentage points of GDP when aid leveled off and declined.

The Botswana Government's development strategy, supported by donors, has many parallels in the developing world. The motivation for aid at the outset was to accelerate development, and donors took on the tasks necessary to get development off the ground. When results were disappointing because of bottlenecks in the recipient countries, donors ventured into new areas, the most recent being so-called social capital. As in the case of Botswana, temporary bridging arrangements by government or donors tend to become permanent and develop their own dynamics.

Lessons for donors:

- Aid to recipient countries' governments should aim at improving the quality of core government services rather than expanding the scope of government;

- The government budget deficit should be kept at sustainable levels;

- When the scale and scope of recipient governments are larger than what is considered optimal, donors should be careful about conditioning adjustment loans on that the recipient government mobilizes additional local resources.

1 Introduction

In a recent assessment of aid undertaken by the World Bank (World Bank 1998), Botswana is held out as a "spectacular success" of foreign aid. The World Bank explains the success by the quality of the bureaucracy and sound macroeconomic management. The study finds that financial aid has no impact on economic growth unless it is given in a context of good government in general and sound macroeconomic management in particular. Therefore, it is argued, foreign aid should be given to countries with "good policies" and, where good policies are not in place, the transfer of ideas and knowledge is more important than the transfer of money.

Both the 1997 World Development Report and the recent "Assessing Aid" study were concerned with the role of government in development. They both give examples of governments that have been catalysts and driving forces for growth and development and governments that have turned out to constitute obstacles to growth and development. The Botswana government is largely seen as having substantial capacity for development planning and is perceived as market-friendly and a catalyst for growth. Nevertheless, the present scale and scope of government appear to be unsustainable both from a financial point of view and in terms of utilizing scarce resources that might have better alternative uses. The Botswana Government states the problem as follows in the 1997/98–2002/03 National Development Plan, NDP 8: "The current size and structure of the public sector are not sustainable and measures will be put in place to 'right-size' and rationalise the public sector during NDP 8. These will entail, among others, the hiving off of some activities to the private sector and the introduction of credible measures for improving productivity in the public service" (NDP p. xxi).

This report analyzes the sustainability and performance of the Botswana public sector in a comparative perspective and is organized as follows. The next section discusses development problems in countries that receive large inflows of foreign exchange, e.g., from exports of natural resources or from aid. Section 3 makes projections on the maximum level of revenue the Botswana government can raise from local sources during the next two decades and argues that there is a need to downsize the public sector's share of total GDP by at least 10 percentage points of GDP. The maximum level of government activity is not necessarily the optimal level, however. In sections 4 and 5 we discuss the optimal size of government given its development objectives and the effectiveness of its operations. Hence, chapter 4 discusses efficient resource allocation between the private sector and the government in more detail, while section 5 assesses the effectiveness of government in its provision of services compared to a sample of developing countries. One of the most urgent development challenges facing Botswana today is poverty and income inequality. The Government's role in reducing poverty and achieving a more equal distribution of income is discussed in section 6. Throughout the report Botswana's performance is compared with other relevant countries and lessons for other developing countries facing a decline in per capita transfers from abroad are drawn. These lessons are further elaborated and summarized in section 7, which concludes the report.

2 Adjusting to declining per capita transfers from abroad

Botswana's remarkable economic development since independence has largely been fueled by mineral revenue. The country has in addition received substantial amounts of foreign aid, particularly during the early years of independence. These flows of foreign exchange have funded large-scale investments in infrastructure, the establishment and expansion of a relatively modern and effective public sector and the institutions normally found in a modern economy. During the boom years the economy experienced one of the highest rates of economic growth in the world, resulting in an 8-fold increase in real per capita income between 1968 and 1997.

Consequently, Botswana reached the stage of a mature mineral-exporting country in the early 1990s (Auty and Mikesell 1998). This means that mineral export revenue has reached a plateau in absolute terms and has started to decline in per capita terms and as a share of GDP. Many countries have experienced a slowdown in economic growth and even an absolute decline in per capita income at this stage of mineral-led development. Thus, out of 24 mineral-exporting developing countries analyzed by Auty and Mikesell (1998), only 5 had a positive rate of growth in income per capita during the period 1980–92.[1] The most publicized growth failures are mature oil-exporting countries such as Venezuela, Algeria, and Nigeria, while the largest fall in income per capita occurred in Jordan, Niger and Gabon.[2] It should, however, be noted that most of these countries grew rapidly during the early phases of mineral-led growth and reached a relatively high *level* of income before stagnation and decline set in.

Development aid has many of the properties of mineral rents. First, it is largely a "free" source of foreign exchange that allows the country to expand domestic expenditure through an increase in imports. Second, a much larger portion of aid accrues to government than from other sources of income, and allows for a larger public sector than other countries at the same level of income can afford in the absence of foreign transfers. Finally, aid inflows tend to fluctuate and eventually stagnate and decline in terms of transfers per capita.

Botswana's adjustment to becoming a mature mineral-exporting country coincided with a sharp decline in foreign aid transfers. The country's experience is therefore highly relevant to aid-dependent countries facing stagnation or decline in aid flows. The analysis of adjustment problems starts here with a brief discussion of the insights from empirical and theoretical research on mineral-led growth.

The problems related to substantial transfers of foreign exchange over an extended period of time include:

- A transfer of foreign exchange tends to lead to an appreciation of the local currency. The economy becomes more import-intensive as a consequence, and often runs into balance of payment problems when the transfers level off or decline;

- Mineral rents and foreign aid are more likely to be spent on investment compared to other sources of income. This usually leads to higher growth, but over-investment and misallocation of resources are common in mineral-exporting and aid dependent countries;

- A larger portion of mineral rents and foreign aid accrues to government than from other sources of income. This typically leads to an over-extended public sector and

1) The five countries are Indonesia, Colombia, Chile, Oman and Botswana.
2) The annual average rate of decline in GDP per capita during the period 1980–92 was -5.4, -4.3 and -3.7 per cent for Jordan, Niger, and Gabon respectively.

budget deficits and often a financial crisis when transfers level off or decline.

The balance of payment problems following stagnation or decline in transfers are due to the fact that it takes time to adjust by replacing imports with local goods and services and replacing mineral exports (or aid) with non-mineral exports. A depreciation of the exchange rate is usually part of the adjustment process. In the long run this helps to narrow the balance of payments deficit, but in the short run more expensive imports and higher costs of servicing foreign debt in terms of local currency may worsen the balance of payment.

If the opportunity cost of capital earned from mineral rents and foreign aid is perceived to be close to zero, the required return to investment may be very low. When the social rate of return to investment falls below the international cost of capital, this is clearly a symptom of misallocation of resources. Since the return to investment typically declines with the per capita stock of capital, the following happens when resource rents or foreign aid level off:

- The cost of capital increases with the diminishing amount of "free" sources for investment financing;
- Investors therefore require a higher return to their investments, and consequently they wish to hold a smaller stock of capital;
- Capital flight results and the rate of investment becomes insufficient to replace obsolete capital.

The capital stock and the real income per capita will in other words adjust to a sustainable level from above, causing an extended period of stagnation or recession. This is what many of the mineral-exporting countries studied in Auty and Mikesell (1998) experienced.[3]

Since a higher proportion of both aid and mineral rent accrues to the government than from local sources of income, government either has to downsize its activity level or to increase taxes when foreign aid or mineral rent inflows stagnate or decline. Most reform programmes in aid-dependent developing countries aim at a combination of these two measures. Since it is easier to expand than to downsize the public sector, however, loss of revenue often leads to substantial tax increases and erosion of the quality of public sector services rather than downsizing. Both large tax increases and erosion of the quality of core public services have a negative impact on economic growth.

Stagnation or decline in per capita income during an adjustment process induced by a fall in per capita foreign transfers can be avoided in three ways. First, financial resources in excess of the absorption capacity of the economy can be invested abroad during the period of increasing transfers. Second, it is possible to design a policy mix of monetary, fiscal and exchange rate policies that keeps the public sector expansion in check, keeps inflation in check, and prevents wages from increasing beyond productivity improvements. Third, industrial and labour market policy can ensure that entrepreneurship is encouraged and that there are sufficient incentives for investment in productive activities and skills. All these measures *prevent* a crisis from occurring and would give somewhat slower growth in the early phases of mineral-led growth. It is, however, easier said than done to design such a policy mix, and very few mineral-exporting countries and aid dependent countries have managed the transition without a sharp slow-down in economic activity.

Botswana is held out as one of the exceptions to the dismal growth performance of mature mineral-exporting countries. The country has actually invested some of its mineral revenue abroad, and has very little external debt. Furthermore, an exceptionally high growth rate has been sustained for three decades. Nevertheless, the public sector has expanded

3) See also Rodriguez and Sachs (1999) for a theoretical analysis of the adjustment process, which is then applied to Venezuela.

beyond what can be sustained when the mineral sector matures. Furthermore, there are indications that the return to investment is quite low both in the private and the public sector. Finally, the economy has only recently reached the mature stage of mineral-led growth, and it remains to be seen whether the necessary adjustments will foster new engines of growth and development.

3 How large should government be?

3.1 The fiscal aspect

Botswana's current economic objectives centre on diversification of sources of income and moving away from its historical dependence on diamonds and government. The primary aim is to ensure economic growth into the future as the mineral sector growth slows down. Diversification of economic activities would address the problems of unemployment and poverty through employment creation and economic growth. Apart from these objectives, diversification changes the structure of the economy and the nature of economic activities. It therefore has important implications for the ability of government to raise revenue through taxation and for its ability to finance its expenditure. The key point is that any diversification will cause government revenues to fall, in relative terms. The diamond sector is extremely profitable, and those profits are taxed at a very high rate. As the economy diversifies, other sectors will emerge that will be less profitable and less highly taxed.

Table 3.1 clearly illustrates this point. While government receives almost 60 per cent of value added in mining as taxes, royalties and dividends, it receives less than half of this in taxes from the non-mining private sector. Clearly, as the relative share of the mineral sector in GDP declines, government revenue as a share of GDP declines with it. All figures in the table are period averages over the 5-year period.

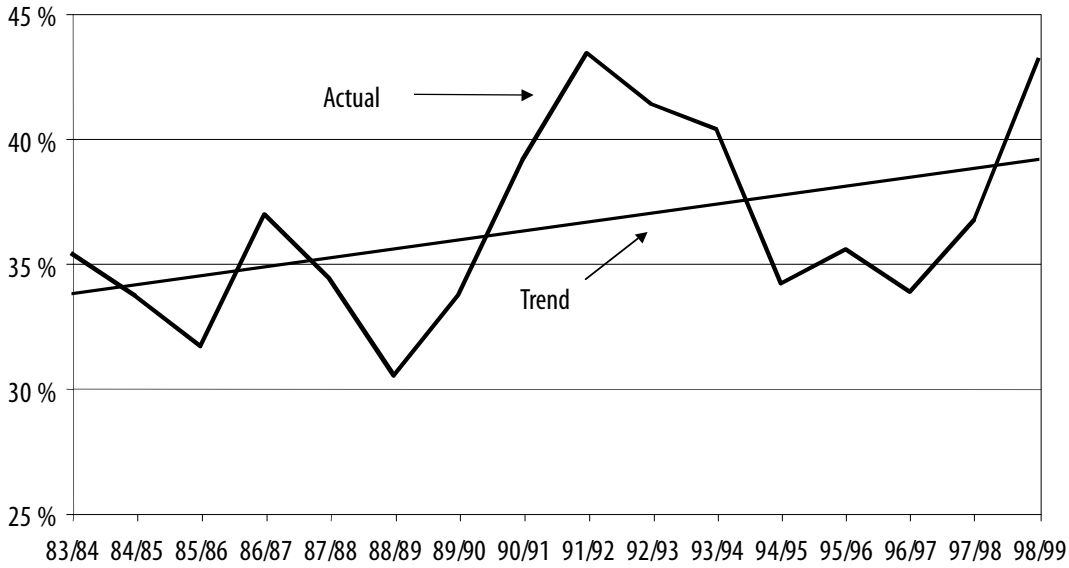
Table 3.1 Sectoral GDP and tax revenues, 1993/94–1997/98

	Share of GDP	Tax revenue as per cent of sectoral GDP	Per cent of total govt. revenue
Mining	35.5	57.3	49.6
Private sector (excl. mining)	49.5	28.0	33.5
Government	14.9	n/a	16.9
Total	100.0	41.3	100

Source: Jeffris (1999)

Figure 3.1 below depicts development in government spending as a per cent of GDP during the period 1983/84–1998/99. A trend line has been inserted. The figure shows large fluctuations in government expenditure, but a clear upward trend. A continuation of this trend is no longer feasible and is incompatible with diversification of the economy.

Figure 3.1 Government expenditure as share of GDP[4]



Source: Jeffris (1999)

In spite of this increasing trend, the Government has run a budget surplus over most of the period concerned. This has resulted in accumulation of reserves that generate interest income, which accounts for about 17 per cent of total government revenue on average during the period 1993/94–1997/98, as can be seen from table 3.1.

In order to illustrate the adjustments needed to finance future government expenditure, some projections have been made of the maximum resources the government can raise under various assumptions.[5] The projections show that under a variety of different assumptions about sectoral growth rates, taxation and spending, government will have to significantly reduce its role in the economy. The base case scenario indicates that revenues will drop from around 40 per cent of GDP at present to 30 per cent over a 20-year period. Such a change will have major implications for choices to be made about the allocation of public expenditure.

Table 3.2 below presents the basic assumptions behind two scenarios, the base case scenario and a less optimistic scenario regarding the speed at which the non-mining private sector picks up steam. The table depicts actual growth rates by sector for 1998, and assumed annual average growth rates for 1999 and the period 2000–17.

The base case yields annual GDP growth between 3 and 4 per cent during the period 2000–17, while the slow growth case yields annual growth rates between 1.7 and 2 per cent during the same period. In either case growth is much lower than Botswana's growth performance during the 1980s and early 1990s.

4) Note that government expenditure/GDP refers to current and development government expenditure as a share of total GDP, while the government share of GDP presented in tables 3.1, 3.2 and 3.3 refers to government production of services relative to total production of goods and services in the economy.
5) See Jeffris (1999) for further details.

Table 3.2 Assumptions on growth rates

	1998	1999	2000–17
Base case			
Mining	0	15	0
Private non-mining	6	6	6
Government	10	3	2
Total economy	6.3	8.7	3.7
Slow growth case			
Mining	0	15	0
Private non-mining	6	4	3
Government	10	2	2
Total economy	6.3	7.7	2

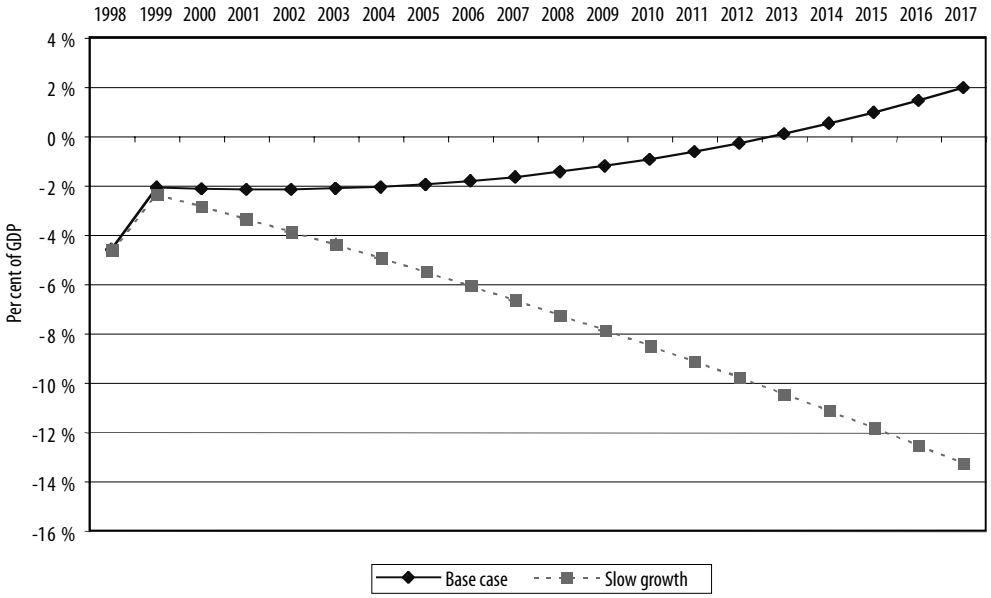
Government spending will fall from the current 42 per cent of GDP to 32 per cent of GDP after 20 years in the base case scenario. However, because government spending grows relatively slowly (2 per cent a year), the situation is sustainable. After initially running a budget deficit, the government eventually returns to a budget surplus in year 2013. All budget deficits can be financed from the accumulated reserves. The reserves fall from current levels, but are not depleted; hence earnings from the reserves continue to provide a significant proportion of overall tax revenues.[6] The reason that this scenario is sustainable is that government spending grows at a lower rate than the overall economy, and remains within the constraints of the lower growth rate of revenues imposed by the structural economic shift.

The base case scenario assumes a relatively high rate of growth for the non-mining private sector. However, this is by no means assured. For comparison, middle-income countries experienced an annual average growth rate of 6.7 per cent in manufacturing and 3.3 per cent in services during the period 1990–97, while the corresponding figures for sub-Saharan Africa were 1.1 and 2 per cent respectively (World Bank 1999). Scenario 2 therefore assumes that the private sector grows at 3 per cent a year from the year 2000, e.g., closer to the sub-Saharan experience. Government spending grows at 2 per cent a year from 1999 onwards.

The second scenario shows how crucial diversification and growth in the non-mining sector is to government finances. With the slow growth of the private sector, and hence in total tax revenues, a government growth rate of 2 per cent becomes unsustainable. Government savings are depleted by year 2012, and the government budget deficit reaches 13 per cent of GDP by year 2017! Government revenue (net of interest) declines to 29 per cent of GDP. This scenario represents the adjustments so many maturing mineral-exporting countries have experienced before: declining GDP per capita and huge budget deficits. In order for the government budget to become sustainable with slower private sector growth, the growth rate of public spending must be cut from 2 per cent to 1 per cent a year (Jeffris 1999). Although the government would still exhaust its reserves, the deficit is contained at a manageable level.

6) It is assumed that the real interest rate on reserves is 5 per cent p.a.

Figure 3.2 Budget deficit (as share of GDP) projections



Projections of the composition of GDP and taxes are presented in table 3.3:

Table 3.3 Outcomes 2017

	Share of GDP	Share of taxes	Taxes/GDP
Base case			
Mining	19	35	11
Private non-mining	69	61	19
Government	12	4	1
Total	100	100	32
Slow growth case			
Mining	27	55	16
Private non-mining	56	56	16
Government	17	-11	-3
Total	100	100	29

The above analysis shows that the maximum share of total GDP the government can spend without running into unsustainable deficits is about 30 per cent. At present the share is 42 per cent, meaning that a major restructuring of the public sector is necessary. In the next section we will analyze whether the maximum share is the optimum share. Box 1 draws some lessons for aid-dependent countries and donors from Botswana's experience regarding the scale of government.

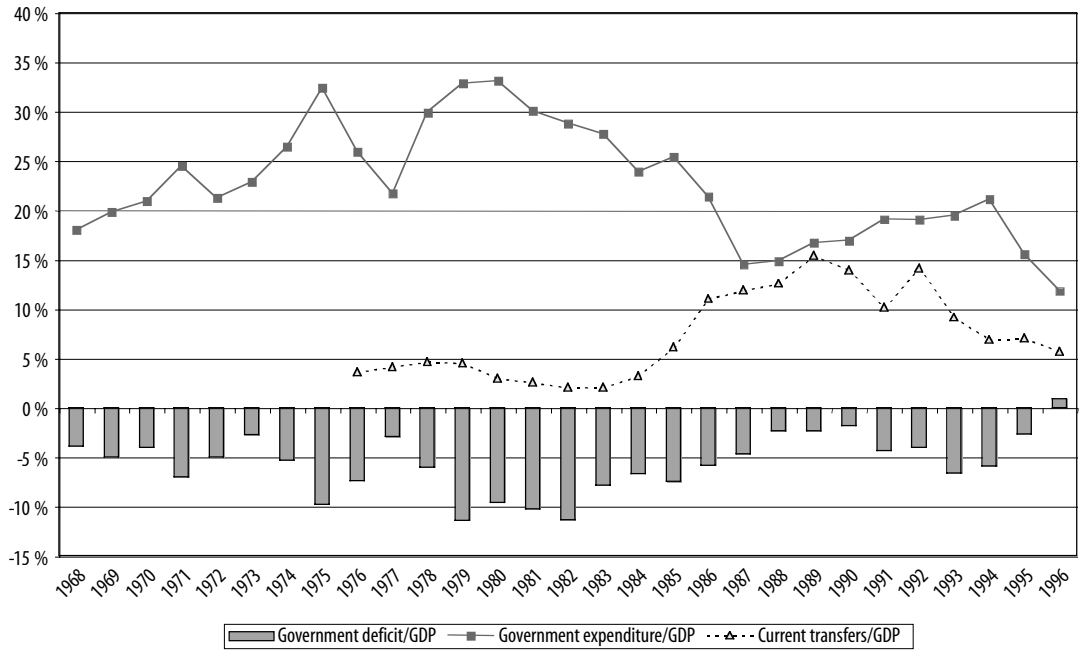
Box 1

The scale of government and development aid

Aid has in common with mineral rents that it generates much more government revenue than other sources of income. In Tanzania about 70 per cent of aid flows went to government on average during the 1990s (Bank of Tanzania 1999). Aid then needs to induce local income-generating activities at least 4.5 times the value of aid flows in order to maintain government revenue at the same level relative to GDP when aid flows stagnate or decline. We have assumed about 15 per cent effective tax on local productive activity, which is probably a maximum in the least developed countries. Thus, a 1 million dollars transfer of development aid will have to be replaced by about 4.5 million dollars worth of local value added in order to generate the same level of government revenue.

Most aid-dependent governments do not have reserves to draw on during the transition period. Public sector reform therefore has to be undertaken within a much shorter period of time than Botswana can afford, and often results in a recession during the transition. Tanzania's experience is a case in point. The figure shows government expenditure/GDP, transfers/GDP and government deficit (including grants)/GDP during the period 1968–96.

Tanzania: Government expenditure, aid and government deficit as share of GDP

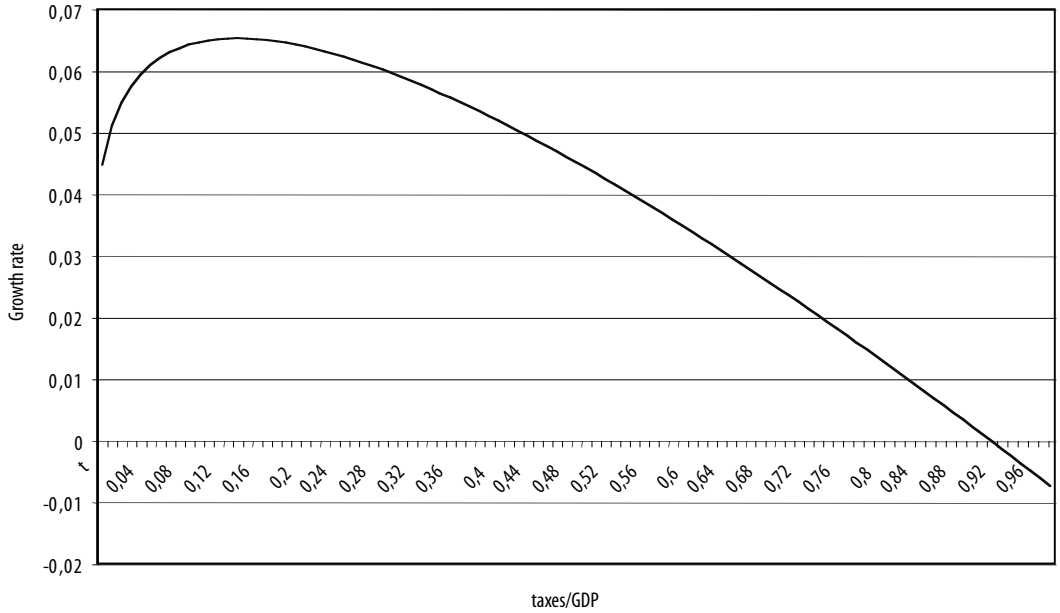


Following the economic crisis and donor withdrawal in the early 1980s there was a sharp decline in public expenditure. Donors returned in 1986–87, fuelling a mini-boom in public expenditure, followed by a new adjustment process and reduction in transfers from 1994–96. After a lengthy and painful adjustment process, government consumption is back to a sustainable level at about 12 per cent of GDP.

3.2 The efficiency aspect

Government expenditure on infrastructure, education, health, and establishing and maintaining a legal and institutional framework for economic and social activities improves the working of the economy and enhances economic growth. On the other hand, public expenditure requires resources that could alternatively be used for private investment or consumption. Barro (1990) showed that at low levels of government expenditure, an extra dollar allocated to government increases economic growth. As the public sector grows larger, the gains from transferring an additional dollar to the government decline and eventually become negative. This is illustrated by figure 3.3, which shows a stylized example. As government expenditure increases, a peak is reached on an inverted u-shaped curve, and additional government expenditure becomes an impediment to economic growth thereafter.

Figure 3.3 Economic growth and scale of government



Dowrick (1996) tested Barro's model empirically.[7] His results support Barro's finding that there is an optimal size of government that maximizes long-run growth. However, the optimal size varies across countries and over time. The maximum size is smaller in poor countries, but sparsely populated countries need a somewhat larger government because it is more expensive in per capita terms to provide infrastructure and a minimum level of government institutions in these. Dowrick (1996) ran a regression that included 116 countries (among them Botswana) and found that the optimal size of government in terms of government consumption as a share of GDP (both measured in nominal terms) ranges between 10 and 18 per cent. Among the 116 countries included in the regression, Botswana ranked as number 107 according to government consumption/GDP starting with the country with the lowest share (e.g., only 9 countries in the sample have a higher government consumption/GDP ratio than Botswana). According to Botswana's own statistics, government consumption was 28 per cent of GDP in 1996/97, twice the average for lower middle-income countries (CSO 1999, World Bank 1999). Botswana thus most likely lies to the right of the peak on the curve in figure 3.3, and would consequently have a higher future long-term growth rate if government consumption was reduced relative to GDP.

Aid or mineral rent could in principle increase public expenditure without increasing taxes and thereby allow a higher optimal expenditure to GDP ratio than could be obtained otherwise. However, resource allocation between the government and the private sector is not just a question of allocating *financial* resources. If human resources are scarcer than financial resources, and human resources can not be imported to fully match demand, government could still crowd out development-enhancing private sector activities by occupying scarce human resources. Table 3.4 shows the allocation of different skill categories among sectors in Botswana. Clearly, the government occupies a large share of all skill categories.

7) He regressed government consumption/GDP (not taxes/GDP) on GDP growth.

Table 3.4 Distribution of skill categories among sectors 1993/94

Area of Training	Central govt.	Local govt.	Parastatals	Traditional agriculture	Informal sector	Private sector	Total
No training	14.1	12.3	2.8	18.6	20.3	31.8	100
Humanity	83.1	1.9	1.5	0.6	1.6	11.4	100
Social science	26.5	16.0	8.6	0.5	3.4	45.1	100
Natural science	55.1	11.0	2.0	0.2	1.9	29.9	100
Craft and industry	16.9	11.0	8.9	2.3	15.2	45.6	100
Engineering and other technical	39.7	5.8	5.7	0.9	4.2	43.7	100
Service Trades	49.0	7.6	3.4	2.2	8.1	29.7	100
Other	15.1	28.9	7.1	0	0	49	100

Source: Republic of Botswana (1998)

In the aggregate, central government accounted for about 30 per cent of formal sector employment, while local government added another 7 per cent in 1998. Total public sector employment, including the parastatals, accounted for about 43 per cent of total employment (CSO 1999). Looking at recent trends, the share of central government in total employment increased from 25 to 30 per cent during the 5-year period 1992–97, while local government employment increased from 6 to 7 per cent of the total. There has, in other words, been a substantial increase in the government share of total employment, as well as an increase in the absolute number of government employees. This happened during a period of slow growth in overall employment. Thus, during the 5-year period (1992–1997) total employment increased by only about 4 per cent, while central government employment increased by 22 per cent.

The NDP 8 states that the vacancy rate in the public sector was 9 per cent in the middle of 1996. This was due to shortages of people with relevant skills, especially sciences and mathematically based occupations, teachers and managerial level personnel. This means that in order to maintain quality at the present level of government activity, e.g., filling the vacancies, an even larger share of professional and skilled labour is needed, which only underscores the need for scaling back the government activity level.

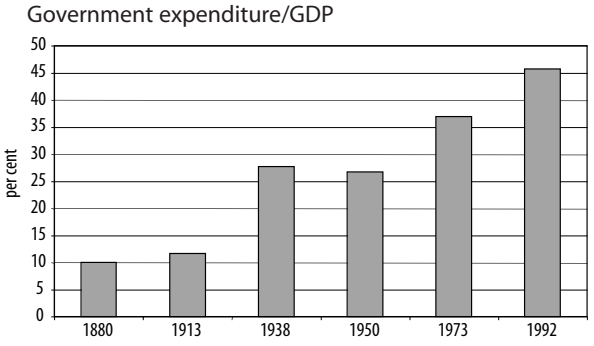
Box 2 below illustrates that "big government" was not the engine of growth in early stages of development in the presently rich, industrial nations. Neither was public expenditure an engine of growth in the newly industrialized Asian economies, although the governments did intervene in the economy through their industrial policy. Thus, there are few sustainable growth success stories where government expenditure has been the driving force.

Box 2

The role of government during transition

The OECD countries went through the transition to dynamic industrial economies during the period 1820–1913. During this period taxes and government expenditure were low and in balance. Government largely confined its role to law and order, defence, elementary education and preventive health measures. The chart shows average government expenditure as a share of GDP for 6 countries (France, Germany, Japan, Netherlands, UK and USA).

Source: Maddison (1995)



4 What activities should government undertake?

If we assume that the Botswana Government can spend a maximum of 30 per cent of GDP, how should it allocate its expenditure, and should the Government aim for spending the maximum 30 per cent of GDP? The answer to the first question depends on the Government's priorities and objectives, and the social and economic situation in the country. The second question relates to efficient allocation of resources and finding a division of labour between the government and the private sector that yields the highest level of welfare. Since the government still receives mineral rents, it is also a question of how to transform mineral wealth into productive capacity that will benefit future generations.

Starting with priorities and objectives, the Botswana Government defined 4 development objectives soon after independence, and has maintained them ever since. These are (Government of Botswana 1997, NDP 8):

1) Rapid economic growth,
2) Social justice,
3) Economic independence and
4) Sustained development

The first and third objectives have clearly been obtained. The second objective of social justice, however, leaves much to be desired if we interpret social justice as a more equal distribution of income. In spite of numerous social development programmes, rural development programmes and financial assistance to small-scale local businesses, income distribution is still highly unequal and the incidence of poverty is very high for a country at Botswana's level of income. Sustained development depends on the country's ability to diversify, which so far has been somewhat disappointing. This raises the question of how the scale and scope of government are related to the diversification objective.

It is important to distinguish between government provision of basic public goods such as enforcing law and order and the enforcement of contracts, on the one hand, and private goods that in principle can be sold in the market, on the other. It was previously argued that, up to a certain point, public goods and services enhance economic growth and development. Furthermore, it is well known that public intervention is necessary in order to obtain an efficient provision of public goods and rectify market failure. It is important, however to bear in mind that government can not always correct market failures and that it seldom has sufficient statistical knowledge to know exactly what it should do.[8] This section focuses on the government's role in the provision of *private goods*. In order to get the background for the role of government in Botswana at the turn of the century, we need to take a step back in the country's history:

At independence in 1966, Botswana was a poor country with a very small population of about half a million people. The industrial base and public infrastructure were extremely underdeveloped. But the discovery of minerals, especially of diamonds in the 1970s, changed the situation tremendously. The revenue from the mining sector together with greatly increased Customs Union revenue after the re-negotiation of SACU in 1969, made it possible for the government to provide many social amenities. To speed up development efforts, with very little private sector presence in industrial and commercial activities, the Government found it necessary to develop and support many of these functions within its own organization. This was done through three main methods:

- Setting up a parastatal by an Act of Parliament;

8) See Stiglitz (1998) for a discussion.

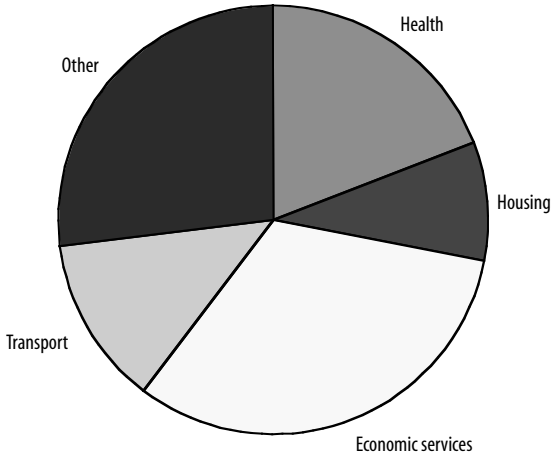
- Indirectly through the Government's investment arm, the Botswana Development Corporation (BDC), which was established in 1970[9];

- By creating departments, which performed tasks that in most developed economies would be predominantly performed by the private sector, such as the Central Transport Organisation (CTO), the Government Printer, etc.

Thus, over the years, government investment extended to hotels, tourism, repair and maintenance operations, construction services including architectural services, publishing, transport, financial institutions, agriculture and estates management. Parastatal institutions have played a key role in the economy. In fact, it has been noted that non-financial parastatals aside from two mining companies – Debswana and BCL (the copper/nickel mining company) – are some of the largest institutions operating in Botswana (World Bank, 1989). In short, government has been playing a dominant role in the economy and has been the largest employer. Based on available data, government spending in Botswana was growing faster than any country in the world during the period 1965–1989.

Central government expenditure on private services accounted for about 25 per cent of total recurrent expenditure and about 5 per cent of GDP in Botswana in the late 1990s. Figure 4.1 shows the composition of this expenditure category in 1996/97.[10] The share of total expenditure going to services that are private in nature and could be provided by the market is not particularly high from an international perspective. However, given the relatively high government expenditure share of total national income, and the dominant role of parastatals in the economy (not included in the 25 per cent), the share of GDP that government spends, directly and indirectly, on private services and goods is relatively high.

Figure 4.1 Composition of government expenditure on private goods



Source: Central Statistics Office

Government provision typically implies that government agencies or parastatals establish a monopoly position, at least in segments of the market, imposing high barriers to entry for private sector entrepreneurs. A government monopoly is in turn typically characterized by a narrow range of goods and services, slow productivity growth and technological progress, and shortages (e.g., people queuing to get access to the service or good). At early stages of development this may be seen as the only option to provide such services at all, but as the market expands, business opportunities open up if the government steps back. In contrast, if government maintains its dominant position in the economy, it may well contribute to the lack of private supply of goods and services, simply because the government crowds out the private sector. This may happen both in the output and the input markets. Those with access to government-provided goods and services, often at highly subsidized prices, are rarely seen as potential customers for private business. In the input market, government occupies scarce human capital resources, creating shortages of

9) In its 1996 Annual Report, BDC reported shareholdings in 66 companies, and investments (equity or loans or both) in 119 companies.

10) Other services are food and social welfare, local and regional development NEC, urban infrastructure, cultural recreation, broadcasting and press.

skilled labour in the private sector. This is particularly the case when wages are regulated such that the private sector can not attract human capital by raising their wages above government wages. Until the early 1990s, this was the policy in Botswana.

Private goods and services are usually provided most effectively in a competitive market. Hence, a private monopoly is not necessarily better than a government monopoly. We do not have sufficient data to assess the market concentration and competitiveness of the private sector in Botswana. It appears, however, that at the aggregate level the government is at least as effective as the private sector. The relative prices of government services have in fact declined compared to private sector services during the 1990s (Nordås 2000). In addition, it appears that the return to invested capital in the non-mining, non-financial private sector is quite low. Data from the 1992/93 Social Accounting Matrix (SAM), reported in table 4.1, illustrate the point.

Table 4.1 Factor payments (P million) from the 1992/93 SAM

Factor of production	Industries	Mining	Central govt.	Local govt.
Professional and technical, citizens	459	34	262	39
Professional and technical, non-citizens	258	31	70	4
Administrative and managerial, citizens	164	2	44	8
Administrative and managerial, non-citizens	165	14	18	1
Clerical, citizens	404	17	219	38
Clerical, non-citizens	5	0	0	0
Skilled manual, citizens	540	182	122	24
Skilled manual, non-citizens	75	24	0	0
Unskilled	413	41	140	25
Informal sector	550	0	0	0
Net operating surplus	1045	2532	0	36
Depreciation	1003	157	489	0
Net taxes and subsidies	-30	1	0	0
Total value added	5052	3034	1363	176

Source: Central Statistics Office, 1996

Table 4.1 gives a more detailed breakdown of skill levels than table 3.4. Besides, it distinguishes between citizen and non-citizen employees. Note, however, that while table 3.4 reports the distribution of employment *numbers* on sectors, table 4.1 reports the distribution of *payments* to each skill category. There are two important features worth noticing in this table. First, net operating surplus less depreciation of capital stems almost entirely from the mineral sector, as the net operating surplus in the private industries is only marginally above what is needed to replace outdated capital. This indeed reflects the point discussed in section 2; a very low cost of financial resources may lead to low return to invested capital.

A second feature worth noticing in table 4.1 is that shortages in skilled labour can be overcome to some extent by importing workers. Thus, more than a third of total payments to professional and technical employees, and half of total payment to administrative and managerial employees go to non-citizens in all industries (except the mining sector) combined. In the mining sector, the share to non-citizen professional, technical, administrative and managerial staff is even larger, reaching more than 85 per cent in the administrative and managerial category. This probably increases labour costs in the private sector significantly, as expatriates have to be remunerated at internationally competitive rates.

Relatively low return on capital and low productivity apply to the private non-mining sector on average and do not imply that there are no internationally competitive companies in Botswana, which indeed exist. Nevertheless there is a danger that government provision of private goods and services alongside generous subsidies through the Financial Assistance Policy (FAP) have distorted incentives for entrepreneurs. Besides, the fact that the government until recently employed university graduates by default may have contributed to lack of skilled and professional workers in the private sector. Thus, the sheer size of the public sector combined with a small overall market may well have impeded productivity growth in the private sector.

Even if strong government involvement in economic activities was necessary to get development off the ground in the early years, the situation of the economy is presently very different from that of 30 years ago. Firstly, Botswana now has a more developed private sector, capable of supplying goods and services in competition with, or instead of, government. Secondly, the financial sector is more developed, reducing the need for government lending to large enterprises. Thirdly, with the international economic thinking shifting towards less government intervention in the economy, foreign investment tends to be less attracted to an economy with an exceptionally large public sector. Fourth, it is recognized in the current National Development Plan (NDP 8) that the public sector has become too large for the government's capacity to manage it effectively. This suggests that the private sector should take over some of the activities currently undertaken by government wherever that can be done efficiently, leaving government the task (which remains very large) of managing those activities which cannot be adequately, willingly, or efficiently undertaken by the private sector.

There is no economic justification, for instance, for continued government involvement in the provision of urban housing. Many of the public sector activities can be undertaken more efficiently by the private sectors. Even for traditional public goods such as police services, the evidence in Botswana (and elsewhere) indicates that such services are complemented by the private sector through private security services. There is also no economic justification for services such as cleaning services, food services, gardening, refuse collection to be part of the public sector.

Furthermore, government departments, councils and other public bodies provide many other goods and services that are very similar to goods and services produced by the private sector. The Central Transport Organization (CTO), Department of Architecture and Building Services (DABS), Department of Printing and Publishing Services (DPPS), Roads Department, etc. are all good examples. Because the financing of those government agencies is part of the general budget, there is no direct relationship between the value of the good or service provided and the cost of producing it.[11] Under these circumstances, on the one hand, it is extremely difficult to evaluate performance of service providers and, on the other, users are not motivated to economize on using these services. The result is generally wasteful resources, poor quality and inefficient delivery of the good or service. Therefore, government should withdraw from these activities and leave them to the private sector. This would also free government resources for improving quality in core activities such as education and health, as will be further discussed below.

11) In fact, most of such services have been provided to the user free of charge or at highly subsidized fees.

5 Efficient resource allocation – a comparison

In most countries, including the OECD countries, productivity is lower in the public sector than in the private sector, and productivity growth is slower (Ferris and West 1996). Botswana appears to be an exception to this empirical regularity. The relative cost of public services has not increased over time compared to the cost of private sector services (Nordås 2000), and productivity in the public sector has grown faster than productivity in the private sector, at least during the period 1974–94 (Mandlebe 1997). Does this mean that the public sector in Botswana is exceptionally effective, or does it mean that the (non-mining) private sector is ineffective, or both? In order to answer that question, Botswana's performance in two important sectors – education and health – is compared to a sample of other countries, focusing on productivity, e.g., how much health and education the country gets from its expenditure compared to other countries. Botswana is first compared to a sample of 66 developing countries on some broad performance indicators.[12] Next, a somewhat more detailed comparison to a smaller sample of 6 countries is provided.

But before discussing the performance of the two key social sectors, it is worth noting that compared to a sample of 66 developing countries, Botswana is more democratic, has a far better bureaucracy, is less corrupt and has a less distortive economic policy than the average country with a similar level of income (Hagen 2000). This finding is based on econometric estimates using several indicators of the quality of government. It is, however, supported by a number of qualitative studies.[13]

5.1 Education

This section first compares Botswana's expenditure and performance in the education sector to the sample of 66 developing countries. Table 5.1 shows data for the educational attainment of the population of Botswana aged 15 years and above at various dates,[14] while table 5.2 shows the sample means of the 66 countries. The very low level of human capital at independence in 1966 is immediately obvious. It can also be seen that the country has made progress in alleviating this deficit. For example, the share of the population with no schooling was almost halved by 1990, while the average total years of schooling more than doubled to 3.75 years.

Table 5.1 Measures of educational attainment for Botswana 1960–90 (per cent)

	No school	Primary complete	Secondary complete	Higher education complete	Total years of schooling	Average years of primary schooling	Average years of secondary schooling	Average years of higher education
1960	65.3	8.0	0.7	0.1	1.72	1.60	0.11	0.01
1965	66.2	6.3	0.5	0.1	1.61	1.50	0.1	0.00
1970	61.2	6.8	0.8	0.4	1.95	1.76	0.17	0.02
1975	58.8	10.0	1.1	0.3	2.24	2.01	0.22	0.02
1980	45.8	15.2	2.3	0.1	3.12	2.77	0.34	0.01
1985	41.7	9.9	1.7	0.2	3.24	2.81	0.41	0.02
1990	35.8	10.0	1.7	0.4	3.75	3.17	0.55	0.03

Source: Barro and Lee (1993, 1996)

12) The 66 are the developing countries for which sufficient data is available.
13) See for example Harvey and Lewis (1990) and Nordås et al. (1998).
14) Note that these are point estimates, not averages.

The share of the population of Botswana over age 15 that has completed primary school was 18 per cent below the sample mean in 1990. The corresponding figure for secondary school was 75 per cent. The sample mean of average years of higher education is five times Botswana's 1990-figure! While the pipeline of pupils and students currently in the system will most likely improve the absolute figures, it is not at all clear that Botswana's relative position will become more favourable. Although some progress has been made, Botswana seems to be lagging behind. Admittedly, the country started from a very low level, but given its phenomenal growth rate of income, one would have expected the country to have done much better by now.

Table 5.2 Sample means of educational attainment variables (per cent)

	Primary complete	Secondary complete	Higher education complete	Total years of schooling	Average years of primary schooling	Average years of secondary schooling	Average years of higher education
1970	12.33	3.11	0.82	2.95	2.35	0.55	0.05
1975	12.00	3.67	1.02	3.23	2.50	0.66	0.07
1980	12.52	5.15	1.39	3.78	2.80	0.88	0.09
1985	11.89	5.33	1.84	4.09	2.98	0.99	0.12
1990	12.21	6.74	2.43	4.44	3.15	1.14	0.15

Source: Hagen (2000)

Hagen (2000) also estimated a relationship between GDP per capita level and educational attainment on the basis of data from the 66 country sample. Applying these estimates to Botswana reveals that the country is an underachiever with respect to educational attainment. The deficits are sizeable, particularly with respect to secondary and higher education, where the expected levels were about twice and 3.5 times the actuals respectively in 1990. Even though the figures tend to move in the direction of closing the gaps, and even if we take into account the inevitable inaccuracy of such calculations, there is clearly still a long way to go before Botswana reaches the level of educational attainment commensurate with its level of income.

Educational performance measured by the illiteracy rate does not change the above conclusion when Botswana is compared to a narrower group of countries with some similar features.[15]

15) Tanzania and Uganda are aid-dependent countries, Gabon is a mature mineral-exporting developing country, while Malaysia and Mauritius are two highly successful newly industrialized countries. See Bøe (2000) for further discussion.

Table 5.3 Illiteracy rate (percentage of population 15+)

	1985		1990		1995	
	Female	Male	Female	Male	Female	Male
Botswana	39.6	18.5	35	16	40.1	19.5
Gabon	56.9	30.1	51.5	26.5	46.7	26.3
Mauritius	22.9	11.3	..	..	21.2	12.9
Tanzania	..	..	..	..	43.2	20.6
Uganda	71.0	42.9	65.1	37.8	49.8	26.3
Malaysia	35.0	16.8	29.6	13.5	21.9	10.9

Source: World Development Indicators, The World Bank

Table 5.3 clearly shows that by 1995 Botswana lagged far behind the newly industrialized countries (Malaysia and Mauritius), it performed somewhat better than Gabon and Uganda, but only marginally better than Tanzania, a least-developed country that has given primary education high priority. Moreover, the literacy rate has not improved in Botswana over the decade between 1985 and 1995, as opposed to all other countries in the table except for Mauritius.

Is this somewhat disappointing performance a result of neglect on the part of the Botswana Government? In fact it is not. In terms of expenditure on education, Botswana comes out on top both compared to the 66 countries' sample mean and compared to the 5 countries included in table 5.3, as can be seen from tables 5.4 and 5.5.

Table 5.4 Public expenditure on education (per cent of GDP)

	1980	1985	1990	1995
Botswana	7.0[a]	6.8	7.6	9.6
Gabon	2.7	4.5	..	3.2[c]
Mauritius	5.3	3.8	3.7	4.3
Tanzania	4.4	3,6	5.0	..
Uganda	1.2	3.0[b]	1.5	..
Malaysia	6.0	6.6	5.4	5.3

a) data from 1979; b) data from 1984; c) data from 1992

Source: World Development Indicators, The World Bank 1998.

Table 5.5 Expenditures on education as a share of total government expenditures

	Sample			Botswana		
	Exp. on schooling	Exp. on higher education	Total exp. on education	Exp. on schooling	Exp. on higher education	Total exp. on education
1970–75	0.105	0.022	0.159	0.092	0.025	0.131
1976–80	0.096	0.025	0.149	0.153	0.031	0.211
1981–85	0.089	0.022	0.142	0.121	0.027	0.187
1986–90	0.092	0.020	0.142	0.134	0.026	0.195

Source: Hagen (2000)

From table 5.5 it is evident that, except for the first period, Botswana has placed greater priority on education than the average of the sample. This holds across the board; i.e., for expenditures on primary/secondary education ("schooling"), higher education, and total

education.[16] The differences are sizeable, about 50 per cent for schooling, 25 per cent for higher education, and 33 per cent for total expenditures during the 1980s.

It is also possible to analyse how Botswana has divided its educational budget into expenditures on schooling and higher education compared to the sample mean. From table 5.6, it is apparent that the country has put greater emphasis on primary and secondary education, and less on higher education, than the average. For schooling, the relative differences are rather small over the whole period, with Botswana spending about 65–73 per cent of its educational budget on these items, while the mean is very stable at 65–66 per cent. However, in the last three sub-periods, Botswana has spent about three percentage points less of its budget for education on higher education than the average, which means that the share is 15–20 per cent lower.

Table 5.6 Shares of schooling and higher education in total government expenditures on education

	Sample		Botswana	
	Exp. on schooling	Exp. on higher education	Exp. on schooling	Exp. on higher education
1970–75	0.661	0.153	0.694	0.203
1976–80	0.665	0.179	0.727	0.146
1981–85	0.659	0.168	0.651	0.144
1986–90	0.647	0.161	0.689	0.132

Source: Hagen (2000)

An empirical analysis investigating how current real total spending on education affects subsequent educational attainment suggests that Botswana is not getting as much out of its spending on education as one would expect. An estimate of the relationship between spending and subsequent attainment is made based on the 66 countries sample, and then applied to Botswana. The result is presented as predicted values in table 5.7 below, and the predicted values are compared to the actual values. The discrepancy between predictions and actual figures is clearly greatest in terms of higher education. The actual values never exceed 25 per cent of the predicted values; the only consolation is that the gap is closing in relative terms. When it comes to schooling, Botswana does not lag that far behind. However, by 1986–90, the actual value was still only about 91 per cent of what the analysis predicts. For average total years of education, the ratio was about the same (89 per cent).

Table 5.7 Predicted and actual values of educational outcomes for Botswana

	Predicted average total years of education	Actual average years of total education	Predicted average years of schooling	Actual average years of schooling	Predicted average years of higher education	Actual average years of higher education
1970–75	..	2.24	..	2.23	..	0.02
1976–80	3.79	3.12	3.60	3.11	0.10	0.01
1981–85	3.98	3.24	3.82	3.22	0.12	0.02
1986–90	4.20	3.75	4.09	3.72	0.14	0.03

Source: Hagen (2000)

16) The latter does not necessarily follow from the first two, as there is a residual category – "other expenditure on education" – which is not shown. The reason why primary and secondary education is lumped together, is that disaggregated data was not available from the source (nor from the primary source, IMF's Government Finance Statistics). Note that it includes spending on pre-primary education as well.

To sum up, Botswana's performance on the accumulation of human capital from education is similar to Tanzania's, in spite of having a GDP per capita about 12 times Tanzania's (measured at PPP), and in spite of having spent about twice as much of its GDP on education. This clearly shows that financial resources are not sufficient to produce the desired results. Furthermore, judging from Tanzania's performance, results can be achieved with limited resources. Since both Botswana and Tanzania have received significant amounts of foreign aid and technical assistance in the education sector, aid does probably not explain the difference in efficiency between Botswana and Tanzania.

Government expenditure on education has probably reached a ceiling in Botswana. The immediate challenge is therefore to identify the reasons for the relatively low productivity of the educational sector. Why is it that Botswana appears to get less value for money in education than the other countries in the samples? Is it due to a mismatch of the curricula and the skills that are needed in the economy? This needs to be assessed through a careful study of the schooling system in relation to the industrial structure of the economy, and lies beyond the scope of this study. Another possible explanation is a small and scattered population and small training units. However, the average number of pupils per teacher is not particularly low in Botswana (Bøe 2000), so this can hardly explain the difference in outcome. Finally, a shortage of qualified teachers and lecturers could partially explain low performance. This has been and still is a problem in Botswana, but it is also a problem in most other developing countries, and is probably not responsible for the difference. Other possible explanations may be found outside the school system itself.

Two likely explanations for lower performance than expected in the education sector are probably related to the high incidence of poverty in Botswana and incentives to acquire skills at the individual level. With 38 per cent of households falling below the poverty line, it is likely that many households can not afford to send their children to school, at least not at the secondary level. This problem is further discussed in section 5.

One would expect that people would invest time and effort in education if it improves their standard of living through a higher probability of getting a well-paid job or better opportunities for self-employment. In Botswana the informal sector is much smaller relative to GDP than in most developing countries, suggesting that this is not a very attractive option. At the same time, transfers account for a larger share of household income than subsistence production of food and other goods (CSO 1995), which could partly explain why informal sector activities are unattractive.

Unemployment stands at about 20 per cent of the workforce, which in turn is about 50 per cent of the working age population (Government of Botswana/UNDP 1998). At the same time there are relatively well-paid jobs for unskilled and semi-skilled workers in the government sector, manufacturing and South African mines. The latter have laid off workers on a large scale over the past few years, but it has until recently been a highly significant source of income to Botswana households. A combination of low incentives to participate in the informal economy and high barriers to entry in the formal economy may have resulted in a situation where expected gains from education, e.g., the difference between expected life-time earnings with and without education, is below what people consider the cost of education, at least for those who can only afford a few years of secondary education. Improving the workings of the labour market may therefore be an important element in a policy aiming at advancing educational attainment.

5.2 Health

Botswana spends about 6 per cent of total government expenditure on the health sector, a figure similar to the sample mean of the 66 developing countries. The Botswana government nevertheless spends a larger share of total GDP than the sample average on health services (about 1.5 per cent as compared to

about 1.1 per cent). Comparable data are only available for the period 1986–90 (see table 5.8). At least during that period, Botswana spent somewhat above the mean on hospitals, but substantially less on clinics and practitioners. In fact, the meagre share of the health budget (3.3 per cent) devoted to primary health care is only about 25 per cent of the sample mean (13.6 per cent).

Table 5.8 Shares of clinics and hospitals in total government health expenditures

	Sample		Botswana	
	Exp. on clinics	Exp. On hospitals	Exp. on clinics	Exp. On hospitals
1986–90	0.136	0.579	0.033	0.602

Source: Hagen (2000)

A more detailed comparison of performance can be done within a smaller sample of countries. Table 5.9 compares expenditure shares of real GDP and some measures of the curative capacity, e.g., the quantity of health services resulting from that expenditure.

Table 5.9 Health spending and personnel

	Public health expenditure	People per physician		People per nurse		People per hospital bed	
	% of GDP, 1990–95	1980	1993	1980	1993	1980	1993
Botswana	1.9	8,122	5,151	700	480	421	635
Gabon	0.6	2,184	1,987	225	1,173	..	305
Mauritius	2.2	1,920	1,165	627	392	320	347
Tanzania	2.8	..	..	..	..	716	976
Uganda	1.8	21,405	22,399	2,009	6,762	661	760
Malaysia	1.4	3,917	2,441	570	480	439	437

Source: World Development Indicators, The World Bank

It can be seen that Botswana spends less than Mauritius and Tanzania on health services compared to real GDP, but more than all the other countries included in the table. The most efficient provider of health services appears to be Gabon, spending only 0.6 per cent of GDP on health services and yet performing rather well on the access to health resources indicators.[17] Malaysia also appears to have a relatively efficient use of health expenditure, particularly in primary health care. The picture for Botswana is rather mixed. Recalling that Botswana spends a large share of its health expenditure on hospitals and a small share on primary health care, it appears that primary health care is remarkably effective (persons per nurse), while expenditure on hospitals appears to be relatively ineffective (people per hospital bed and people per physician).

The Global Strategy for Health for All by the Year 2000, adopted by the World Health Assembly in 1981, marked a radical change in the focus of health and development discussions in multilateral fora. The strategy aimed at attaining a socially and economically productive life for all people by shifting the priority within national health systems towards primary care. The strategy includes a list for monitoring and evaluation. The indicators of primary health care are expressed as percentage of the population with access to:

17) The figures do not take quality and private sector health services into account.

- Safe water in the home or within 15 minutes' walking distance;
- Adequate sanitary facilities in the home or immediate vicinity;
- Immunization against the major infectious diseases;
- Local health care, including the availability of at least 20 essential drugs within one hour's walk or travel, trained personnel for attending pregnancy and childbirth and family planning services.

Tables 5.10–5.12 illustrate measures of outcome of expenditures in these areas. Table 5.10 depicts the percentage of the total population with reasonable access to an adequate amount of safe water. In urban areas the definition implies water from a public fountain or a stand-post located no more than 200 meters away. In rural areas the definition implies that members of the household do not have to spend a disproportionate part of the day fetching clean water.

Table 5.10 Safe water, percentage of total population with access

	1970	1975	1985	1995
Botswana	29	45	77	70
Gabon	1	..	50	67
Mauritius	61	60	99	100
Tanzania	13	39	52	49
Uganda	22	..	16	42
Malaysia	29	34	71	89

a) data from 1988

Source; World Development Indicators. The World Bank.

The only country in the sample with universal access to clean water is Mauritius. Botswana lags behind the middle-income counties in the sample, but performs much better than the least developed ones. Botswana has, however, universal access to safe water in urban areas.[18] Much the same picture emerges when access to sanitation is compared. Mauritius is the only country in the sample with universal access. The difference between middle-income and low-income countries is smaller for sanitation than for safe water. Botswana comes last in this comparison with even lower access than Tanzania and Uganda. However, Botswana is by far less densely populated than the other countries in the sample. Since per capita costs of sanitation are higher the lower the population density, the cost/benefit ratio of sanitation may be so high in Botswana that this has not been a priority area so far.

Table 5.11 Sanitation, percentage of population with access

	1985	1995
Botswana	36	55
Gabon	50	76
Mauritius	97	100
Tanzania	..	86
Uganda	13	67
Malaysia	78[a]	94

a) data from 1988

Source: World Development Indicator, The World Bank

18) See Bøe (2000) for further details.

Child immunization is another important factor raising the general health standard thereby promoting general well-being in the population. Table 5.12 provides some data on child immunization, depicting the rate of vaccination against measles and DPT (diphtheria, pertussis or whooping cough and tetanus) among children under one year of age.

Table 5.12 Child immunization, percentage of children under 12 months vaccinated

	1981		1985		1990		1997	
	Measles	DPT	Measles	DPT	Measles	DPT	Measles	DPT
Botswana	70	64	68	68	55	..	79	76
Gabon	..	..	58	14	76	78	5	41
Mauritius	..	82	61	85	76	85	85	89
Tanzania	51	55	66	67	79	78	69	74
Uganda	22	9	17	14	74	77	60	58
Malaysia	..	54	20	59	70	89	83	91

Source: World Development Indicators, The World Bank

On this indicator Botswana's performance is about what could be expected from its level of income and health expenditure.

Turning to local health care, Botswana spends less of its health budget on local, primary health services, but the share has increased over time (Bøe 2000). It is interesting to note that the countries in the sample with the highest share of expenditure on local, primary health care, Malaysia and Gabon, obtain among the highest performance indicators on access to health services (table 5.9) at the lowest cost.

Life expectancy at birth and infant mortality rates are common measures on the overall health standards in a country. Hagen (2000) finds that the level of income is more important than expenditure on health as a determinant for life expectancy. Botswana's performance on life expectancy relative to income and expenditure on health service is about the same as the sample mean. This does, however, not take into account the sharp decline in life expectancy experienced during the 1990s as a consequence of the AIDS epidemic that has hit Botswana more severely than any other country in the world.[19] Table 5.13 presents the figures for the sample of 6 countries in 1990 and 1998. Here the impact of the AIDS epidemic is clearly seen. Life expectancy has declined by 11 years during the 1990s, and the infant mortality rate has increased by 7 per 1000 live births. This is a much larger deterioration than that experienced in Uganda, which was most seriously affected by AIDS in the late 1980s and the early 1990s. Both Tanzania and Uganda have managed to improve the infant mortality rate during the 1990s, in spite of being heavily affected by the AIDS epidemic, while a reversal of the AIDS epidemic has not yet occurred in Botswana.

19) See Granberg (2000) for a discussion

Table 5.13 Health performance indicators

	Life expectancy at birth		Infant mortality rate	
	1990	1998	1990	1998
Botswana	57	46	55	62
Gabon	52	53	96	86
Mauritius	70	71	20	19
Tanzania	50	47	99	85
Uganda	47	42	104	101
Malaysia	71	72	16	8

Source: World Bank, 2000

To conclude this section, Botswana had achieved a level of health services that is compatible with other middle-income countries and performed about average for the chosen samples of countries by 1990 on the indicators of access to health services. However, measured by overall health performance indicators such as life expectancy at birth and infant mortality rate, Botswana still lagged behind middle-income countries such as Mauritius and Malaysia in 1990. On these two indicators performance has deteriorated to become more equal to least developed countries after the AIDS epidemic hit the country. The incidence of HIV is close to 25 per cent of the adult population (Granberg 2000), among the highest in the world.

5.3 The public sector – effective at the macro level, ineffective at the sectoral level?

It was indicated earlier that the quality of the bureaucracy in Botswana is much higher than average given the country's level of income. Nevertheless, the productivity in the education sector, and to some extent in the health sector, is significantly below average. How can these two findings be reconciled?

A possible explanation lies in the distinction between the ability to formulate policies, take policy decisions and adhere to budget constraints, on the one hand, and implement the policies and plans on the other. The government has been praised for the former, while its capacity for implementation has been criticized. The government has expanded into a very broad range of activities and undertaken a large number of projects and programmes. However, the extensive scope of government activities has over-stretched its capacity for implementation. As a result, there have been delays and poor project execution, resulting in cost and time overruns, even though the overall budget balance has shown a healthy surplus (Government of Botswana, NDP 8). It may therefore be concluded that the central government in Botswana has established a deserved reputation for clean and competent policy and decision making. However, these high standards do not always apply all the way down to project execution.

6 Social justice and income distribution

6.1 Income distribution and growth

Social justice has been one of the four development objectives of the Botswana Government since independence in 1966. This has also been a priority area for donors who contributed significant financial and technical resources during the first two decades of development. This section briefly discusses Botswana's performance on this issue and the policy measures aiming at a more equal distribution of income.

A commonly used measure of inequality is the Gini coefficient. For Botswana this coefficient was estimated at 0.56 in 1993/94 (BIDPA 1997), which is among the highest in the world.[20] Another indicator of income inequality is the difference between the ranking according to GDP per capita and the ranking according to UNDP's human development index (HDI). The difference is -33 for Botswana, (UNDP 1998), meaning that economic development has been faster than social development. Hence, Botswana has been less successful in transforming prosperity into favourable living conditions than the average country in UNDP's ranking. Finally, the share of total households below the poverty line provides additional information on income distribution. The share was 38 per cent in 1993/94 (Government of Botswana/UNDP 1997). This is a notable improvement from earlier estimates, but it is still high, given Botswana's relatively high per capita income, and the period of time since it became a middle-income country

A number of studies have found that a high incidence of poverty and a largely unequal distribution of income are detrimental to economic growth. There is strong empirical support for a negative correlation between initial distribution of income and subsequent economic growth, e.g., the more unequal initial distribution of income, the slower subsequent growth (Perotti 1996, Deininger and Squire 1998).[21] The channels through which income distribution affects growth are through education and fertility decisions and through sociopolitical stability.

Galor and Zeira (1993) argue that a high incidence of poverty yields a low rate of human capital accumulation, which in turn is the most important determinant of economic growth. Thus, given that education has a cost in terms of tuition fees and/or loss of income from children's work in the household or from wage employment, the larger the share of the population that can not afford to send their children to school, the slower the rate of human capital accumulation and the slower the rate of growth.

Bearing in mind Botswana's record on human capital accumulation and its rate of poverty incidence, this result suggests that there is an urgent need for Botswana to reduce poverty in order to obtain sustainable growth when mining revenues and government activities level off. Some policy measures required to obtain a more equal distribution of income are discussed below.

6.2 Distribution policies – taxes versus benefits

There are two approaches to income distribution policies. One is to redistribute income via taxes and subsidies in order to achieve an equal outcome. Such policies have been considered detrimental to growth because redistribution requires relatively high taxes that in turn create distortions and disincentives (see section 3.2). In addition, it is argued that high-

20) The Gini coefficient has a value between 0 and 1. The higher the value, the more unequal the income distribution.
21) Deininger and Squire (1998) argue that the relation is strong when looking at initial distribution of assets such as land, while the relation is not as robust as previously thought when looking at initial distribution of income. They reach this conclusion from new and better data sets.

income groups have a higher propensity to save than poor people, and that means that redistribution of income would lead to lower savings and investment and thereby slower growth. While the first argument is widely accepted, the second is highly controversial. Furthermore, the literature on income distribution through taxation and subsidies suggest that there are limits to what can be achieved from such measures. Harberger (1998) demonstrates through a very simple example that even a very progressive tax system does not change income distribution much. His example is reproduced here, but with data for Botswana's income distribution to illustrate his point.

Table 6.1 Income distribution and tax and benefits[22]

Income group (quintile)	Income and distribution before tax	Tax	Income after tax	After-tax distribution	Benefits	Income after tax and benefits	After-tax and benefit distribution
	(1)	(2)	(3)=(1)-(2)	(4)	(5)	(6)=(3)+(5)	(7)
First	2.5	0.0	2.5	3.49	2.84	5.34	6.22
Second	6.5	1.0	5.5	7.68	2.84	8.34	9.72
Third	12.0	2.4	9.6	13.41	2.84	12.44	14.51
Fourth	20.0	5.0	15.0	20.95	2.84	17.84	20.79
Fifth	59.0	20.0	39.0	54.47	2.84	41.84	48.76
Total	100.0	28.4	71.6	100.00	14.20	85.80	100.00

For illustrative purposes, a progressive tax system is introduced with the average tax rate increasing from zero in the first quintile to 33 per cent in the fifth quintile. Distribution is presented as the share of total income earned by each quintile in columns (1), (4) and (7). Following Harberger it is assumed that half of tax receipts are spent on services or benefits to which every household have equal access or receives the same amount. The after-tax distribution of income in terms of percentages received by each quintile is better after tax than before tax, as can be seen from comparing the distribution figures in columns (1) and (4). However, the improvement is more than proportionally better after an equal amount of benefits have been distributed among households, as can be seen from column (7) compared to columns (1) and (4) in the table. The poorest quintile improves its relative position from earning 2.5 per cent of total income before taxes and benefits to 3.5 per cent after taxes and 6.2 per cent after taxes and benefits.

The important lesson from table 6.1 is that the tax system has to be very progressive in order to have a significant impact on income distribution. As is well known from the public economics literature, such progressive taxation is highly distortive and is usually associated with substantial efficiency losses. In contrast, services provided by the government in an equal quantity to all households have a more significant impact on income distribution.

The expenditure categories that potentially have the largest distributional effects are primary education, primary health care and services such as safe water and sewerage systems. However, these expenditure categories are often regressive in developing as well as developed countries. Primary schools and health services are quite often of much better quality in affluent areas than in poor urban slums or poor rural areas. Moreover, secondary and tertiary education is often more subsidized than primary education and it is still the case that a larger proportion of relatively well-off children and youngsters attend higher level education. According to Harberger (1998) it

22) The figures on income distribution are taken from the 1985/86 survey, which is the latest survey undertaken.

would be a great step forward merely to ensure that poor people have access to the same quality public services as their better-off fellow citizens have.

Table 6.2 Education level by income group, percentage of total

Income group	No education	Primary only	Secondary	Tertiary
Very low economic resources	36.90	48.55	14.41	0.13
Low economic resources	24.06	55.53	20.37	0.05
Better off	15.99	50.33	30.17	3.51

Source: Republic of Botswana 1996

Table 6.2 shows education level by income group in Botswana for persons aged 5 and over in 1993/94. This does not fully explain the relation between household income and access to education, since a low income can be a *result* of a low level of education rather than a cause. However, since a large share of the Botswana population is below the age of 20, and there is usually a high correlation between parents' and children's education level, the table gives a rough idea of the distribution of education. The share of the very low economic resource households that has obtained secondary education is half of the better-off households. It is, however, worth noting that as much as 16 per cent of persons from well-off households have no education. They probably represent the older generation in well-off farm and cattle-raising households.

Harberger's findings applied to the Botswana context suggests that improving the quality of primary and secondary education in poor areas should be a priority area both for redistributive reasons and reasons of sustained economic growth.

6.3 Redistribution policies – government provision or transfers

It was argued that benefits are more effective instruments of income redistribution than progressive taxes. Furthermore, benefits provided in equal amounts to all households significantly improve income distribution and represent a notable improvement to the present situation in most countries, including Botswana. Besides, an equal amount to all households is easier to administer than a more complex system.

The question then arises, should benefits be given in the form of income transfers or through public provision of services? The government has the choice whether to produce services itself, outsource the provision of services to private companies, or pay poor households a transfer such that the household can purchase the good or service in question in the market. It has been argued in the literature (Arrow 1971) that the latter solution is better because the government does not know household preferences. This solution does, however, depend on the existence of an efficient market for the services in question, which is often not the case for services with properties of public goods such as education. Government interference is therefore necessary beyond transferring financial resources to households.

Whether the government should produce services itself or outsource to private providers depends on the relative effectiveness of the private and public sectors. In section 4 it was indicated that the private sector is on average not more effective than the government, while section 5 indicates that government provision of services is not very effective in a comparative perspective. Outsourcing and privatization will thus improve the quality and availability of public services to the poor only if it means increased competition and improved economies of scale for private sector providers.

To conclude, an equal income distribution is found to be positively correlated with growth. However, this merely states that countries that

have an equal distribution of income in the first place tend to grow faster than countries with an unequal distribution of income. The literature provides little guidance as to how to achieve a more equal distribution of income. What is clear, however, is that universal access to education of good quality improves income distribution in the longer run. Redistribution of assets and access to credit for small enterprises probably have a similar effect. In contrast, a very progressive tax system does not improve distribution much, while discouraging private investment.

7 Challenges ahead and lessons for other developing countries

7.1 Challenges ahead

It follows from the analyses in this study that several challenges remain, which require that the Botswana Government give priority to:

- The poverty problem;
- Improving the quality of core public services;
- Scaling back from the provision non-core private goods and services;
- Creating space for the private sector.

Botswana can not solve its transitional problems merely by improving the quality of education and downsizing the government, however. Investment in human capital has a long gestation period, and diversification and job creation need to be a continuous process. During the process, private investment in productive activities is crucial. Private investment has to be funded from the country's savings, or from abroad. Hitherto, the national savings rate has been adequate to finance investments, but most of the savings have been on the government's hands. The projections presented in section 3 clearly show that government savings are on a declining trend in all conceivable scenarios.

In order to obtain an investment rate that is sufficient to sustain a growth rate of 5–6 per cent, the savings rate needs to be at least around 30 per cent. An important challenge for the government is to ensure that there are sufficient incentives for private savings. Taxation, monetary policy, housing policy and social security are important policy areas that affect private savings. Taxation and monetary policy affect the after tax return to private savings, while housing policy and social security affect the need for private households to save. It is probably necessary for the government to assess its policies in these areas focusing on how they affect private savings.

Investment and job creation are interrelated with income distribution. Savings and access to credit and education are important assets that could enable poor people to escape poverty. Botswana has generous investment incentives and credit programmes, e.g., the FAP, SME credit scheme etc. The challenge is to ensure that such programmes provide sufficient incentives to invest in competitive and sustainable small and medium-sized enterprises. This means that the return to investments should be positive both for the investor and the economy as a whole. In addition, it is necessary to assess whether there are unnecessary bureaucratic obstacles to private sector entrepreneurs, both foreign and local.

Job creation and investment incentives have been focused on manufacturing industries. Whether or not the emphasis on manufacturing is detrimental to other sectors should be assessed.[23] Botswana may be well placed to take advantage of recent developments within trade and investments in the service sectors. It is the fastest growing area of international trade and investment, and several developing countries export services such as back-office processing of documents, development of computer software and financial services to mention but a few. It is important that opportunities in these areas are not forgone in the effort to promote manufacturing industries. A possible approach is to create a business-friendly environment that is neutral with respect to industry. In addition, it is important to play an active role and take advantages of regional and international trade agreements.

23) The financial sector has recently been pointed out as a sector of great potential for employment and foreign exchange generation. Botswana also aims at becoming an international finance service centre (NDP 8).

7.2 Lessons for other developing countries and donors

Turning to lessons for other developing countries during transition from high inflows of foreign exchange to sustained development from local resources, it is important first to reiterate the conclusion of the "Assessing Aid" study (World Bank 1998): Aid enhances growth and development when the recipient country has sufficient absorption capacity and accountable institutions. This does not only apply to the central government's capacity to allocate resources to projects and account for the use of transfers. Equally important is the capacity to implement projects and the existence of complementary local resources. These capacities are most often lacking in aid-dependent countries. Thus, capacity-building must go hand in hand with development aid and lower levels of government should receive more attention in this regard.

Development aid has some of the same features as mineral rents. It is an external transfer that in the first instance accrues to government. Aid-driven development therefore potentially imposes the same problems as those for a mineral-driven development. Furthermore, scaling back the level of development aid in a country that has had a long history as a recipient of aid may create the same kind of transition problems as those for a mineral-rich country. In particular, hysteresis appears to be a problem in the public sector. This means that a government activity or institution tends to persist and grow once it is established even if resources and changes in the circumstances suggest that it should be downsized or shut down altogether. Developments in Tanzania and Uganda illustrate this point. They built up a relatively large public sector that could not be sustained in the face of declining aid transfers. Both countries had to scale down their public sectors by more than 10 percentage points of GDP during the transition. However, as opposed to the situation in Botswana, downsizing of the public sector came as a consequence of an economic crisis. A crisis is usually not the ideal framework for reform and transfer of non-core government activities to the private sector. The crisis thus led to a decline in the quality of services due to under-funding in the first instance. Only after the return of donor transfers on the condition of reform, did the public sector undergo a genuine reform in Tanzania, while the public sector deficit went back to unsustainable levels in Uganda. The lesson from these experiences is that aid should be directed towards improving the quality of core government services rather than broadening the scope of government.

A donor-funded expansion of the public sector appears to require an ever increasing amount of transfers to be sustained. As soon as transfers level off or decline, a recession may easily result. Only if aid serves as a catalyst for local income generation about four to five times the amount transferred to the government, will aid-funded public expenditure be sustainable. This is most likely to happen when aid focuses on government core activities as emphasized above. In addition, aid should not fund unsustainable budget deficits over an extended period of time, since such deficits indicate that government expenditure does not increase the productive capacity of the economy.

Botswana's experience shows that government provision of services and use of scarce resources, particularly human capital, may crowd out the private sector. This does not only apply to activities that directly compete with or substitute for government services, but also to private sector activities in general. Donors' supply of goods and services and use of scarce resources in the recipient countries may in a similar way crowd out private sector activities in the recipient counties. Donors should take this aspect into account more explicitly when the costs and benefits of aid projects and programmes are assessed. This is of particular importance in the case of tied aid and in relation to the administration of aid projects and programmes. Integrating this in the recipient country's own budgeting and planning process, as has been done in Botswana, economizes on scarce human capital and administrative capacity.

Poverty reduction and a more equal distribution of income have been priority areas for donors and the Botswana government alike. Botswana has reduced poverty significantly since the 1970s. Yet, the most recent estimate of the incidence of poverty in Botswana suggests that close to 40 per cent of the population remain under the poverty line. Given Botswana's relatively high level of income per capita, and given the priority poverty alleviation has received, this is indeed worrying. Botswana's performance on this account raises the question whether both the government and donors have put too much emphasis on poverty *alleviation* at the expense of poverty *reduction*. The two are not the same thing and correspond to the classical distinction between "teaching a person how to fish rather than giving him fish." Hence, it is important to focus on poverty reduction measures that ensure equal opportunity through access to productive assets rather than income distribution through taxes and hand-outs.

Put together, these findings have the following implications for aid:

- Aid to recipient countries' governments should aim at improving the quality of core government services rather than expanding the scope of government;

- The government budget deficit net of aid should be kept at sustainable levels;

- When the scale and scope of recipient governments are larger than what is considered optimal, donors should be careful about conditioning adjustment loans on that the recipient government mobilizes additional local resources.

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