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Mineral-led Economic Growth, Drought Relief, and Incomes Policy:

Income Distribution in Botswana Reconsidered

By THEODORE R. VALENTINE*

ABSTRACT. Some analysts have hypothesized that rapid mineral-led *economic growth* and *drought* in the *rural economy* have led to a severe worsening of the plight of the rural population in *Botswana*, with rural household income collapsing and *income inequality* worsening pronouncedly. Contrary to these hypotheses, Botswana's income data show that *income distribution* remained stable, since rural household incomes did not experience significant decline as a result of drought conditions. The government's *incomes policy*, the direct and indirect benefits of rapid employment growth, and the government's comprehensive *drought relief* support are seen as explanatory factors in this macroeconomic policy success.

I

Introduction

THIS PAPER has two objectives. The first is to address a gap in the literature on income distribution in Botswana. Much has been published regarding Botswana's sound macroeconomic policy¹ and the success of the government's drought relief program (DRP) in preventing famine despite severe and prolonged drought.² But analysis of income data and income distribution trends have been ignored for the most part. The second, and related to the first, is to draw upon recent income-distribution data to correct prevailing misconceptions regarding Botswana's income-distribution trends. Some of these were contained in two articles on income distribution in Botswana by R. L. Curry, Jr. (1987a and 1987b) in this *Journal*.

The analysis draws upon data from the 1974–75 and 1985–86 income-distribution surveys (Central Statistics Office, 1976; Central Statistics Office, 1988) to provide an indicator of trends in income distribution in Botswana. These data

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are supplemented by drought-relief data and by a recently published report on Botswana's incomes policy (Republic of Botswana, 1990a). Here income trends are seen to be related to the government's incomes policy, the direct and indirect effects of employment growth, and direct support for drought stricken areas, under the drought relief program.

The structure of the paper is as follows. Section II examines the sources of increased income inequality in Botswana. Section III presents data on Botswana's income distribution. Section IV briefly reviews issues related to the government's incomes policy. Section V considers the direct and indirect effects of employment growth. Section VI examines the government's support for the rural sector. And Section VI presents conclusions of the analysis.

II

Case for Perceived Increasing Income Inequality

Botswana, over the 1972–90 period, experienced two trends which are generally associated with increased intersectoral and intrasectoral income inequality. The first is rapid mineral-led economic growth.³ The second is a cycle of rain failure and severe and widespread drought conditions that has markedly depressed the performance of the rural economy.

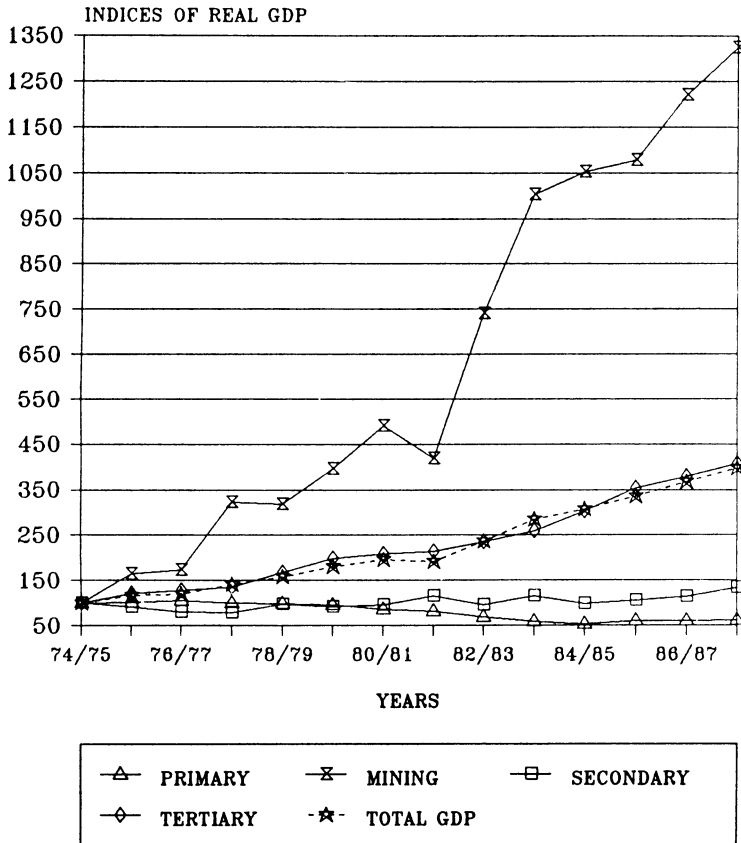
Botswana's record of economic growth is well-known and, thus, is not subject to detailed review here. Figure 1 presents data on real gross domestic product (GDP) trends for four broad sectors. These sectors are: the primary sector (agriculture, fishing and hunting, and forestry); the mining sector; the secondary sector (manufacturing and construction); and the tertiary sector (water and electricity supply, commerce, transport and communication, finance, social and personal services and government).

Over the period of analysis, real GDP increased at nearly 14% per annum. Botswana had the second fastest growing economy in the world (behind that of Singapore).⁴ This economic performance moved Botswana from being one of the world's poorest countries to a middle income country.⁵ This record of economic growth was primarily attributable to revenue earned from diamond-mining and the government's strong macroeconomic management of the resulting reserves.

The mining sector grew at 25.3% per annum, with its GDP share rising from about 13% to roughly 47%. The expansion of the mining sector and the resulting mineral revenues stimulated the growth of the secondary and the tertiary sectors. The transmission mechanism for economic growth to the other sectors in much of the economy was through the government's (recurrent and development)

Figure 1

**INDICES OF SECTORAL GDP AT 1979/80
CONSTANT PRICES, (1974/75 = 100)**



expenditures of mineral revenue. These accounted for over 50% of government revenues.

However, not all sectors performed well. Primary sector production in real terms, between 1972 and 1988, declined by an average of 3.3% per annum. Taking the 3.4% population growth rate into consideration, production declined by nearly 8% per annum on a per capita basis. The sector's GDP share declined

from 22.3% to 3.5%. The real value agricultural production fell from P87.7 million in 1974–75 to P54.3 million in 1987–88, a 38.1% decline.⁶

The decline in primary sector production was attributable to both the year to year uncertainties of rainfall and the adverse secular trends apparent in the rural sector. Nearly half the 1972–90 years found the rural population saddled with the burden of coping with, or recovering from, drought; and government policy-makers preoccupied with developing and fine-tuning programs to counteract the income-reducing, and income-distribution widening, effects of drought.

Crop production averaged 82.4 thousand metric tons during the period of good (timely and evenly spread) rains, 1972–78, with exceptional yields of 110.2 and 121.7 thousand metric tons in 1974 and 1976 respectively. Drought was severe and widespread throughout much of the ten-year period between 1979 and 1988. As a result, crop yields were extremely low, averaging 24.1 thousand metric tons. A record low of 7.3 thousand metric tons was recorded in 1984–85.

Given these occurrences, it is not surprising that Curry (1987a, p. 75) said that income inequality in Botswana is “pronounced and increasingly serious.” In Curry’s view, income distribution had become unequal as a result of structural imbalances in the economy, government policy choices, inequalities in asset ownership, land-use and water rights, and unequal access to the limited wage-employment opportunities. Other analysts shared similar views.⁷

The 1986 Rural Economic Survey (Bank of Botswana, 1987) lends support to the Curry conclusion of drastically declining rural incomes and pronouncedly worsening income inequality. It reported an intrasectoral Gini coefficient for the rural economy of 0.73. This is a measure of high income inequality by any standard. When compared to a Gini coefficient of 0.52 reported by the 1974/75 Rural Income Distribution Survey (RIDS) (Central Statistics Office, 1976), the data indicate significantly worsening of rural income inequality.

However, the survey had a major shortcoming; with the exception of incomes from livestock and crop production, it focused on the monetarized rural economy, and ignored nonmonetarized (in-kind) sources of income and public transfers. This important omission is not surprising since the focus of the survey was monetary savings, investment, lending patterns and indebtedness in the rural economy. The exclusion of in-kind income does limit the survey’s usefulness in discussions of rural household incomes and income inequality.⁸ Past studies of income distribution in Botswana have shown that cash income is much less equitably distributed than total household income, *i.e.*, cash plus non-cash income. Lower income households generally received a much larger proportion of their incomes in a non-cash form than higher income households do. The percent of income received by lower income rural households in non-

cash form was 71% in 1974–75 and over 61% in 1985–86, according to the RIDS and 1985/86 Household Income and Expenditure Survey (HIES) (Central Statistics Office, 1988) respectively.

I now turn to the evidence on household income and income distribution trends.

III

Income and Income Distribution Data

TABLE 1 presents data for mean and median monthly rural household income for 1974–75 and 1985–86.

The 1974–75 median monthly income for rural households reported in the RIDS was equivalent to P173 per month (at 1985–86 prices), compared to P132 in 1985–86. In percentage terms, rural income declined by about 24%, or at an average annual rate of about 2.4%. These data show that the collapse of rural household incomes, that Curry and others hypothesized, did not materialize.⁹

Given that different methodologies were used to calculate non-cash income and for valuation of assets in the two surveys, and the omission, which is likely, of some non-cash income and government transfers sources of income for the HIES, these figures probably overstated the magnitude of the income decline (Harvey and Lewis, 1990; Valentine, 1990).

The measures of income inequality attainable from both the RIDS and HIES Gini coefficients and data on income share by income group are presented in Table 2.

Table 1

**MEAN AND MEDIAN MONTHLY RURAL HOUSEHOLD INCOME FOR
1974-75 & 1985-86, Pulas per month, 1985-86 prices**

	1974-75	1985-86
	-----	-----
Mean Household Income		
Cash income	173	136
Non-cash income	120	83
All income	293	219
Median Household Income		
Cash income	69	53
Non-cash income	104	79
All income	173	132

Source: Central Statistics Office (1976 and 1988)

For rural households, the Gini coefficient has actually declined, from 0.52 in 1974–75 to 0.48 in 1985–86. A strict interpretation of these figures implies that rural income distribution was actually more equitable in 1985–86 than in 1974–75. However, given the sampling errors of such surveys, the difference in these two figures is probably not significant. It suffices to say that no increase in income inequality can be detected.

While the evidence in Table 2 was with regard to rural intrasectoral income distribution, some indicators suggest that intersectoral income disparities had not widened to the extent expected. Among these indicators is the change in the relative share of rural household income in total household income. Rural households received about 62% of total pre-tax household income in 1974–75 (Fallon, 1981, p. 3). Even with the drought and related secular declines in returns to rural sector activity and the rapid growth of urban-based activity, in 1985–86 rural households still received 53% of total pre-tax household income. With the rapid rate of urbanization and a consequent decline in the number of rural households which occurred over this period, the relative decline in income shares is much less than these data suggest.

From the evidence available, it can be concluded that despite the effects of prolonged drought on the rural economy, rural intrasectoral income disparities, and, perhaps, intersectoral household income disparities, have not worsened significantly.

These results are contrary to the “disenfranchisement” and the severe worsening in the conditions of rural households hypothesized by Curry (1987a and

Table 2

**MEASURES OF RURAL INCOME DISTRIBUTION FOR TOTAL
HOUSEHOLD INCOME 1974–75 AND 1985–86**

	RIDS 1974–75	HIES 1985–86
Gini coefficient	0.52*	0.48^(0.56)
Percentage of income accruing to bottom 40 percent	12	12(11)
Percentage of income accruing to middle 40 percent	30	32(28)
Percentage of income accruing to top 20 percent	58	56(61)

Source: Central Statistics Office (1976 and 1988).

Notes: *For rural households.

^For persons living in rural households.

Brackets indicate national distribution figures.

1987b).¹⁰ An explanation for the relative stability of both rural household incomes and income distribution, can be found in analyses of: the incomes policy through which the government regulated wages and salaries in the formal economic sector, the direct and indirect benefits of rapid employment growth, and government drought relief support.

IV

The Incomes Policy

BOTSWANA'S FIRST MAJOR MINING PROJECTS began production in 1971–72. It was clear to the government that investments in copper-nickel and in diamond mining would accelerate economic growth and increase the demand for scarce skills and capable management. The government feared that the resulting intersectoral and intrasectoral income inequalities would create severe social and political strains.

In an attempt to mitigate such strains the government in 1972 introduced an incomes policy and revised it in 1976 (Republic of Botswana, 1976). The policy objectives were to increase employment growth and reduce income inequality.¹¹ The policy focused on general wage restraint and narrowing the income gap.

With regard to employment earnings, the policy tied the salaries, wages and fringe benefits paid by the private sector enterprises and parastatal organizations to those applicable to public employees. ("Parastatal" is a much used, but rather imprecise word that may indicate the performance of roles that some governments themselves may play directly, and/or imply government has a controlling interest, such as more than fifty percent ownership).

The government, as the wage leader, exercised restraint in its remuneration policies. For the most part, wage and salary increases were tied to cost of living increases and the periodic awards recommended by various salaries commissions. The wage and salary structures of large-scale private sector enterprises and parastatal organizations had to be approved by the Wages Policy Committee, with the incomes policy guideline stating that wage and salary levels should generally conform to, and on no account significantly exceed, those paid by government to comparable grades of civil servants (Republic of Botswana, 1976).

Judging from broad measures, the incomes policy was successful at controlling wage and salary growth.¹² Employee compensation, as a share of non-mining GDP, grew only slightly between 1975 and 1986, from 40% to 44% (Republic of Botswana, 1990a). The incomes policy worked so well at containing the upward pressures on salaries and wages of skilled and educated manpower that an earnings compression was created. There was a reduction in the private

incentives for investment in education, skill acquisition and for undertaking further responsibilities on the job.¹³

The dissatisfaction which emerged regarding remunerations was greater between citizens and expatriates, than between high-level citizen manpower and low-paid (low skilled) citizens as Curry (1987b) implies. In 1980 expatriates comprised 5.2% of formal sector employment and received 25.4% of the total wage bill. By 1986, expatriates had decreased to 4.6% of employment, but their share of the total wage bill increased to about 28.6%. The absolute numbers of expatriates had increased from 4700 in 1980 to 5400 in 1986. Wage and salary restraint contributed to this perverse result. With expatriate remunerations being subject to less stringent control than those of citizens, the earning gap between expatriates and citizens manpower widened significantly. At the same time, the suppressing of the private returns to investments in education and skill acquisition of citizen manpower reduced the willingness of locals to undertake such investments, reinforcing the need for expatriates.¹⁴

One point of success which is widely recognized regarding the incomes policy is that wage restraint contributed to rapid employment growth in the economy.

V

Employment Growth and Structural Change

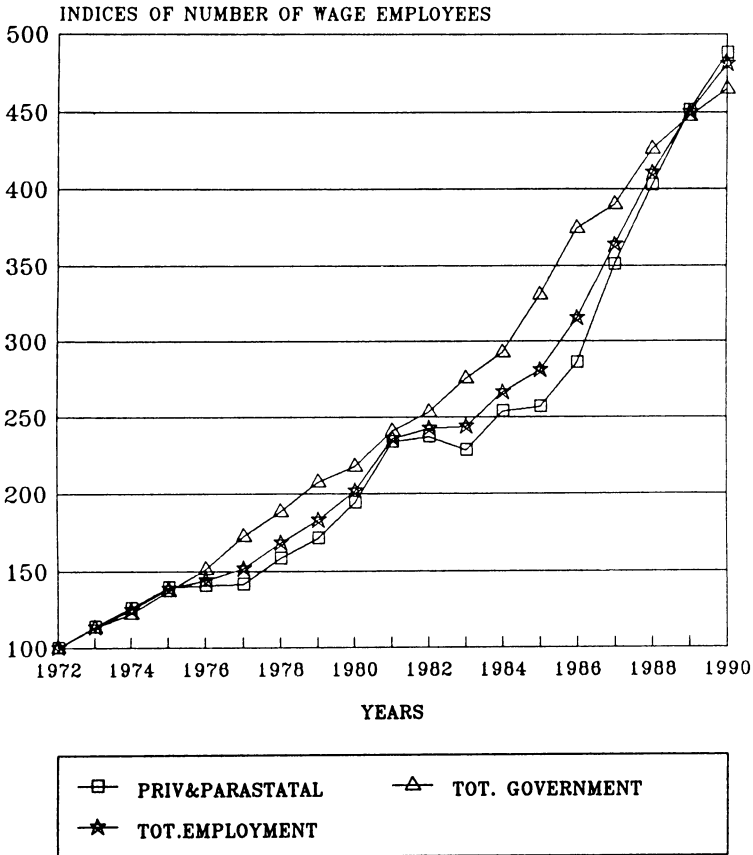
A KEY INDICATOR of general economic performance, as well as how the benefits of economic growth are distributed, is the rate at which formal sector employment grows and labor is transferred from less productive (and less remunerative) nonwage-based activities to formal sector employment activities.

Formal sector employment grew from 41,300 in 1972 to 198,500 in 1990, increasing at an average annual rate of roughly 9.0%. Figure 2 presents indices of formal sector employment trends for the period 1972–1990 as reported in *Employment Statistics* and *Labor Statistics Bulletin*, two publications of the Central Statistical Office. Trends are presented for private/parastatal employment (enumerated private sector enterprises and parastatal organizations), total government employment (all central and local government combined), and total employment.¹⁵

Two distinct periods appear to emerge, 1972–81 and 1981–90. Both periods opened with total government sector employment growth outpacing private/parastatal employment growth. Each period closed with employment growth in total government and private/parastatal enterprises converging. Both periods began with the start of production in major mineral projects.¹⁶ The likely explanation here is that, initially, as government spending of mineral revenues on infrastructure, education and social services increased rapidly, government

Figure 2

**INDICES OF FORMAL SECTOR EMPLOYMENT
BY BROAD SECTOR 1972-1990 (1972 = 100)**



employment outpaced private/parastatal employment. Later, with a lag effect, government spending (purchases of goods and services from the private and parastatal enterprises) and the infrastructure so created stimulated the private and parastatal production, leading to higher employment growth. This is the mechanism by which increased mineral revenues have stimulated growth of the total economy.

While the Botswana economy is heavily dependent on mineral production for its contribution to GDP, exports, and government revenue, the mining sector provides few jobs relative to its investments. (Mining employment is included with private/parastatal employment, as the large mines are all parastatal organizations.) This is due to the capital intensive nature of mining. In 1989 employment in the mining industry stood at 13,189, about 6.6% of total formal sector employment.

After 1985 the private/parastatal employment growth rate far outpaced that for total government. This was a result of the growth in non-mining activities in the secondary sector (manufacturing and construction) and non-government tertiary sector (particularly, trade and commerce, business services and financial services). The private sector enterprises and parastatal organizations appear to have reached a level of growth and maturity. They were embryonic when the period of rapid growth began in 1972 and continued to be so into the early 1980s. An element of self-sustained growth (employment and otherwise) may now be possible within the private/parastatal sector.

Table 3 presents a comparison of the growth of the economically active population and formal sector employment.¹⁷ The proportion of the economically active population which had been absorbed into the wage economy grew significantly. In 1972 slightly over 12% of the economically active population was engaged in wage employment. By 1981 this had increased to 18.5%. With the momentum gained in employment growth, in the mid 1980s wage employment grew much more rapidly than the economically active population. This point is illustrated by the percentage of the economically active population engaged in formal sector employment growing from about 19% in 1985 to nearly 27% in 1989.

Table 3

**THE GROWTH OF THE ECONOMICALLY ACTIVE POPULATION AND
FORMAL EMPLOYMENT, 1972-89**

	1972	1981	1985	1989
Economically Active Population (Age 15-64)	37,086	527,412	607,412	692,713
Formal Wage Employment	41,300	97,400	116,000	185,772
Formal Employment as % of Economically Active Population	12.3%	18.5%	19.1%	26.8%

Source: Central Statistics Office. *Report on the Population Census, 1971; 1981 Population & Housing Census: Analytical Report; Employment Bulletin*, various issues, and Special Projections.

In sharp contrast to the picture painted by Curry (1987a, 74–75) of stagnant employment opportunities, these data show increasingly greater proportions of Botswana's economically active population being absorbed into formal sector employment and benefiting directly from economic growth. In addition to this, because of strong extended family ties, many people who remained outside the formal sector, particularly those in the rural sector, benefited indirectly from this employment growth through the remittances by employed family members.

Evidence shows that most urban employees maintain strong ties with their home village after migrating. Migration is not generally undertaken in an attempt to escape the obligations of the family system. Family member migration and resulting remittances are integral parts of an "entitlement protection system" based upon the diversification of income sources and risk sharing (Stark and Lucas, 1988).

Many rural households had their earned incomes supplemented by remittances and, in most recent years, public transfers. Remittances accounted for a sizable proportion of rural household income, 14.2% and 23.8% in 1974–75 and 1985–86, respectively. In 1974–75, a good crop year, incomes derived from remittances exceeded those from crop farming. In the middle of the drought, in 1985–86, remittances were second only to wage employment as a source of rural income.¹⁸

Lucas and Stark (1985) and Stark and Lucas (1988) observed, based on analysis of Botswana's 1978/79 National Migration Study data, that the value of remittances was positively related to the degree of drought; the worse the drought in a district, the higher the absolute level of remittances. Rural households, with more drought-sensitive incomes and assets, were more likely to incorporate migration into their entitlement protection system. Migration, and the resulting remittances, served to assist rural households to greater diversify their incomes and asset portfolios. Low income rural households were more likely to incorporate migration into their entitlement protection system, as their incomes and assets are generally more drought-sensitive. Correspondingly, remittances were more likely to be targeted to these households. In this way, remittances served to reduce income inequality (Valentine, 1990).

Over time, migration to South Africa declined considerably, as employment in the domestic labor market has increased rapidly. As a consequence, in 1985–86 most of the remittances probably came from the permanent (migrants) wage workforce in the domestic labor market. Temporary migrants, such as those in South Africa, generally have a higher propensity to save and remit than do members of a permanent wage workforce. The level of support indicates that permanent migrants within Botswana still maintain strong links with their extended families in rural areas.

In Botswana, remittances acted to redistribute the gains of economic growth and, through risk-spreading of extended family members, served as an insurance mechanism that compensated for drought related income losses.

VI

Drought Relief Support and Income Distribution

IN AN ATTEMPT to ameliorate the negative socioeconomic effects of the 1982–88 drought, to provide safety-net support for rural households, and to facilitate the recovery process, the government in 1982 introduced a number of rural support programs under the umbrella of the drought relief program (DRP).¹⁹

The major components of the DRP and their proportions of total government drought expenditures were as follows: food distribution component (21.5%);²⁰ the work program component (21.8%); the water supplies to communities and livestock component (6.9%); the draught power component (21.3%); the livestock component (13.7%); the free seed component (4.4%); and the destumping component (3.6%). The last four components combined to form the Accelerated Rainfed Arable Program (ARAP). ARAP's aim was to encourage the rural population not to forsake the primary sector and to expedite recovery from the drought by supporting asset maintenance and rebuilding.

Curry (1987a, 80–81) makes reference to the food distribution component of the DRP, but neglects income distribution aspects of this and other components of the program. These aspects of the program should be explained.

The DRP contained both relief and development elements, reflecting the government's "relief-development strategy." The objectives of the DRP were: improve nutritional welfare and health; prevent income erosion and support the entitlement protection system of the rural economy; prevent the "whole family" migration and facilitate the return to farming when the rains resumed; contribute to maintaining household consumption; contribute to maintaining and expanding employment opportunities; and contribute to maintaining and expanding investments at the household, community and national levels (Hay, 1988). The broad-based and innovative approach of the government aimed to facilitate rural development as well as provide drought relief.

Table 4 presents data on combined government and donor nonrecurrent expenditures under the DRP. The total amount of government development funds spent on drought relief and ARAP over the six-year drought program, 1982–83 through 1987–88, was P237.19 million. This was the equivalent of 14% of total government development expenditures for that period, by no means insignificant since such expenditures were expanding at a very rapid rate. In 1985–86, the

Table 4

COMBINED NONRECURRENT DROUGHT RELIEF PROGRAMS EXPENDITURES, THROUGH DROUGHT AND RECOVERY PERIOD (in millions of Pula)												
YEARS	1979-80	80-81	81-82	82-83	83-84	84-85	85-86	86-87	87-88	88-89		
Rainfall of previous year: arable areas	-26%	+7%	+28%	-16%	-18%	-21%	-38%	-34%	-19%	+41%		
	-----FULL DROUGHT PROGRAM-----											
Govt Expenditure on drought program	3.05	2.67	0.98	5.41	11.95	30.29	44.31	56.83	88.40	92.73		
Donor funding of drought program*	0.81	0.39	0.23	0.74	0.71	2.20	3.35	6.65	12.85			
Total Expenditures on drought program	3.86	3.06	1.21	6.15	12.66	32.49	47.66	63.48	101.25			
Total Government Dev't Expenditures	98.28	121.43	121.25	160.36	140.68	209.70	247.52	405.22	558.14	797.34		
Gov't Drought Expend /Total Dev't Expend	3.10%	2.20%	0.81%	3.37%	8.50%	14.44%	17.90%	14.02%	15.84%	11.63%		
Donor funding/Total Expenditure on drought	26.6%	14.6%	23.5%	13.7%	5.9%	7.3%	7.6%	11.7%	14.5%			

Source: Rural Development Unit, Ministry of Finance and Development Planning (Botswana) and Republic of Botswana (various years).

Note: * Excludes donor support in-kind, i.e., food aid.

year of the HIES total non-recurrent drought expenditures, as a proportion of total government development expenditures, reached its peak at nearly 18%.

Combined with donor funding (excluding donor support in-kind), the total non-recurrent expenditures on drought relief was P263.69 million in current terms, or P151.66 million at constant 1979–80 prices. Over the same period, the total contribution of the agricultural sector to GDP was only P514.1 million in current terms, or P317.7 million at constant 1979–80 prices. In other words, real total non-recurrent drought expenditure was equal to nearly half of the contribution of agricultural sector to GDP over the period.

It is estimated that during the drought approximately 60% of the rural population benefited from the DRP. The total monetary value of government non-recurrent expenditures on the DRP equaled 11.1% of total rural household income. Given the targeting of drought relief support to lower income households, the overall program worked efficiently with most of those requiring assistance receiving some type of support, although a few were likely to have slipped through the safety-net (International Development Centre, 1990).

The work program component provided income support for rural households in the form of wages for public sector projects, under the labor-based relief program, and for the manual pounding of cereal grains for the school feeding program, under the hand-stamping program.²¹ The public transfer support, associated with the work program component, undoubtedly generated additional purchasing power and income-earning opportunities in the rural economy. Paying participants in cash, instead of direct payments of food-for-work as is done under DRPs in many other countries, created a significant multiplier effect, indirectly supporting other rural activities and facilitating recovery after the drought (Asefa, 1991).

Between 1982–83 and 1987–88, the work program component supported an average of 84,000 participants per annum, with an average of P7.94 million per annum in disbursements. In 1987–88, the number of participants peaked at 90,000, with disbursements reaching over P14 million.

Assuming a work-year equal to 200 days, the work program component created roughly 30,560 full-time equivalent jobs per annum. This is quite significant when it is recognized that in 1985, formal sector employment, which does not take into account employment on DRP, totaled about 105,000 in Botswana.

With 84,000 participants, the work program component in 1985–86 was the equivalent of providing assistance to 45% of the family farm labor force. Allowing one participant for each rural household in the poorest 40% income group, the average contribution of work program component support was 11% of this group's total household income. The participation rate varied widely from district to district.²²

Government expenditures under the DRP served to redistribute the gains of mineral-led economic growth, prevent famine and, along with remittances, support rural household incomes. With much of this support being targeted towards the rural poor and vulnerable groups, the distribution of income in Botswana had not worsened to the extent that trends in primary sector production and the sector's contribution to GDP would lead one to expect.

Various elements of the DRP, such as the food distribution component for vulnerable groups, the rehabilitation of undernourished children, and the destitute program (which provided allowances of food, clothing and/or shelter to people who were not employed, and who had no access to other means of support), have been incorporated into Botswana's social security system and have been integrated into the incomes policy (Republic of Botswana, 1990; Buchanan-Smith, 1990).

VII

Conclusion

BOTSWANA'S INCOME INEQUALITY did not worsen in spite of the combined effects of mineral-led economic growth and severe and prolonged drought. The government's incomes policy helped to restrain wage and salary pressures. This facilitated rapid formal sector employment growth and allowed the government, as the major employer, to use the mineral revenues to support public services and development programs, thus benefiting the broader population. The rural population benefited from employment growth directly by having access to greater wage employment opportunities, and the associated higher incomes, as well as indirectly, from remittances of extended family members employed in the formal sector. The cash balances and foreign exchange surpluses which had accrued to the government, along with an efficient institutional framework which had evolved to cope with recurring drought, helped to minimize the negative human and economic effects of a potentially devastating drought. By 1981-82 "Botswana had set up an entitlement protection system exemplary in its scope and integration" (Dreze and Sen, 1989, p. 153).

A drop in average rural income caused by drought would normally have caused a significant worsening of intersectoral and intrasectoral income distribution. Given the severity and longevity of the drought, with the HIES being undertaken in the midst of it all, the fact that income inequality had not worsened can only be seen as a major achievement to the credit of the government's macroeconomic and drought relief policies.

None of the above discussion takes into consideration the effects of the growth of public services on rural welfare and income distribution. That growth was

quite rapid, and there is some evidence that it was successfully prevented from having a bias against the rural areas (Harvey and Lewis, 1990).

While rural poverty has not disappeared and a large segment of the rural population still lives on the margin of subsistence, the government can take comfort from the fact that the "entitlement protection system," in which drought relief support increasingly played a major role, worked extremely well in providing down-side protection.

What will happen in the future to intersectoral and intrasectoral income distribution as drought relief support has ended and wage and salary restraints, and other aspects of the incomes policy are relaxed, remains to be seen.

Notes

1. For examples of this literature, see: Frederickson (1990), Harvey and Lewis, Jr. (1990), Gulhati (1990), and World Bank (1989).

2. For discussions on Botswana's drought relief program see: Buchanan-Smith (1990), Dreze and Sen (1989), Hay et al. (1985), Hay (1988), International Development Centre (1990), and Rockliffe-King (1990).

3. For example, Lewis (1984, 158) writes:

"Mining development, it seems, generally lead to a form and pace of use of mineral rents that returns the country to external payments equilibrium with a pattern of resource use that makes the distribution of income worse, the economy less diversified, export earnings more concentrated in primary products, and (possibly) the growth rate of the nonmining sectors of the economy lower than they would be without the mineral developments."

4. The World Bank (1991) now estimates that between 1965 and 1989 Botswana had the highest average annual rate of economic growth in the world at 13%.

5. Botswana's per capita rate of economic growth has been phenomenal. At independence, in 1966 Botswana's per capita GDP was \$80. By 1989 this had improved to approximately \$2,380 at current prices, comparable to the per capita GDP of Brazil, Malaysia, and the Republic of South Africa for that year. See Republic of Botswana (1991) and World Bank (1991).

6. Botswana's national currency is the pula. In December 1990 one pula (P1) was equal to roughly \$0.53 (U.S. dollars).

7. On the issue of macroeconomic policy, Gulhati (1990: p. 1155) expresses a view similar to that of Curry, writing:

"The Botswana (macroeconomic policy) record was far from perfect. . . . The government failed to carry out its policy of rural development, largely because political commitment was weak in this area."

Colclough and Fallon (1983) hypothesized that the worsening of the distribution of cattle ownership, resulting from the drought, was permanent and would lead to a permanent worsening of the distribution of income. They (Colclough and Fallon, 1983, p. 145) write:

"There was a permanent worsening of the distribution of cattle ownership at this time. On the basis of our analysis of the links between cattle and household incomes, this obviously implies a movement in the distribution of total rural incomes in the same direction."

Similar arguments were presented in Bank of Botswana (1987) and Hay et al. (1985).

8. For further discussion of the shortcomings of the Bank of Botswana (1987) rural economy survey, see Harvey and Lewis (1990) and Valentine (1990).

9. A 2.4% per annum decline may appear to be quite significant, particularly when the standard of living of the typical rural household is quite low at the outset. However, it should be kept in mind that in a number of other African countries income declines were much more pronounced without the drastic climatic conditions confronting Botswana. Tanzania and Zambia are examples of countries where such significant declines of income have occurred.

10. Curry (1987b, p. 487) painted a picture of Botswana as a country where mineral-led "economic growth without broad social and economic development centralized benefits among relatively few people and virtually disenfranchises the majority from progress." In his view (Curry, 1987a, p. 71) the "economic plight of Botswana's poor has worsened as a direct consequence of the mining sector's success".

11. For a detailed look at Botswana's income policy and a review of its effectiveness, see Republic of Botswana (1976) and Republic of Botswana (1990), respectively.

12. The incomes policy appeared to have contained upward wage and salary pressures until 1988-89, when earnings for skilled and education manpower in the private sector began to rise sharply.

13. For discussion see Harvey and Lewis (1990), especially pages 292-300, and Republic of Botswana (1990).

14. Harvey and Lewis (1990, pp. 293-294) write:

"The government faced a difficult dilemma. On the one hand, the growth of the economy led to the continuing employment of a large number of very conspicuous, highly-paid expatriates, which created a sense of injustice among citizens, especially among those being paid less for doing the same work. On the other hand, an attack on the incomes of expatriates would have made recruitment more difficult, increased turnover, and sharply reduced efficiency."

15. Employment statistics for private sector enterprises and parastatal organizations were aggregated before 1985. It is only after that year that separate employment statistics can be found for the private sector. The same was true for central and local government employment over much of the period presented here. Hence, for purposes of continuity, the employment data for private/parastatal and total government are presented here.

16. Mineral production at the Orapa diamond pipe and BCL copper-nickel mines got underway in 1971-72 and at the Jwaneng diamond pipe in 1981-82.

17. The concept of "economically active population" is used here instead of "labor force." The difference between the two concepts is as follows. The former concept comprises the total proportion of the population between the ages of 15 and 64, regardless of their status in the labor force. The latter concept comprises only those who actually work for others or for themselves, as well as those who are actively seeking work. For various reasons, generally related to age and/or gender, not everyone in the economy between the ages of 15 and 64 participates in the labor force. There are students, the disabled, the discouraged work seekers, etc., who are not presently participating in the labor force. In general, in developing countries, less than 55 percent of the economically active population are participants in the labor force (Standing, 1982).

18. For a more detailed discussion on remittances and rural household income on the national level, see Valentine (1990). For discussion at the district level, see Buchanan-Smith (1990).

19. For detailed discussions on various aspects of the drought relief program, see: Asefa (1991), Buchanan-Smith (1990), Hay *et al.* (1985), Hay (1988), International Development Centre (1990), and Rockliffe-King (1990).

20. With the inclusion of donor support, the proportion of relief expenditures which went to the food distribution component would double. See Asefa (1991) for further discussion on the food distribution issue.

21. Hand-stamping is a process, generally undertaken by women, where grain is manually pounded to separate the grain from its shell. This is a stage of the manual mealing process.

22. Hay *et al.* (1985, p. 78), based upon survey data collected for six villages, found that household participation rates varied from as high as 72% to low as 13%. See Buchanan-Smith (1990) and Asefa (1991) for further data on regional breakdown on DRP participation/beneficiaries.

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The Need for Human Centered Development

WHY DO SOME DEVELOPMENT PROJECTS FAIL? After decades of experience, several World Bank affiliated social scientists have not only answered this question, but have moved on to produce what amounts to a handbook, edited by Michael M. Cernea, on how to design successful projects.

All the authors contributing to *Putting People First: Sociological Variables in Rural Development* (2nd ed., New York: Oxford University Press, 1991), offer