

# Natural Capital Accounting and Policy

## Botswana



### Why Is Natural Capital Important?

Botswana has prepared water, mineral, and energy accounts and developed macroeconomic indicators for sustainable development.

- Botswana is a middle-income country with fast growth and well-managed resources. It is highly dependent on nonrenewables. National and international actors acknowledge a need to diversify the economy.
- The country has high levels of inequality, even though poverty levels have fallen. Degradation of the natural resource base heavily affects those not in formal economies.
- Water is scarce, and supply is expected to be adversely affected by climate change. Table 1 shows changing water supply and consumption data.

**Table 1.** Water Account Results

Supply (millions of cubic meters, Mm <sup>3</sup> )		2010/11	2014/15
Abstractions by form of distribution	Own use	99.5	89.8
	Distribution	97.7	98.1
By source	Groundwater	99.3	108.8
	Surface Water	97.9	79.1
Total water abstraction		197.2	187.9
Consumption (Mm <sup>3</sup> )		2010/11	2014/15
Agriculture		74.6	70.2
Households		37.2	41.2
Mining		32.4	39
Government		15.7	10.3
Other productive sectors		12.6	6.1
Total water consumption		172.5	166.8

Source: WAVES. *Botswana Country Report 2016*. Washington, DC.



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# What Do the Accounts Show?

**Water accounts show biophysical and monetary information** on sources and uses of water, and where users are located.

- Total water abstractions went down 5 percent between 2010 and 2015, reflecting a period of drought. Groundwater abstractions increased by 10 percent, while extractions from surface water oscillated over the period but showed an overall downward trend. Only half of the total water abstracted in Botswana is for distribution (rather than own use), although this has been changing over time with better resource management (49.5 percent in 2010, 52.2 percent in 2015). Better distribution presents more possibilities to capitalize on the available resources.
- Total water consumption increased between 2010 and 2013 by 3.4 percent, driven by a marked increase in use by the mining and public sectors. Water consumption dropped for the second part of the period (2013–15), reflecting a fall in consumption levels from government and “other” productive sectors. The agriculture sector—much of

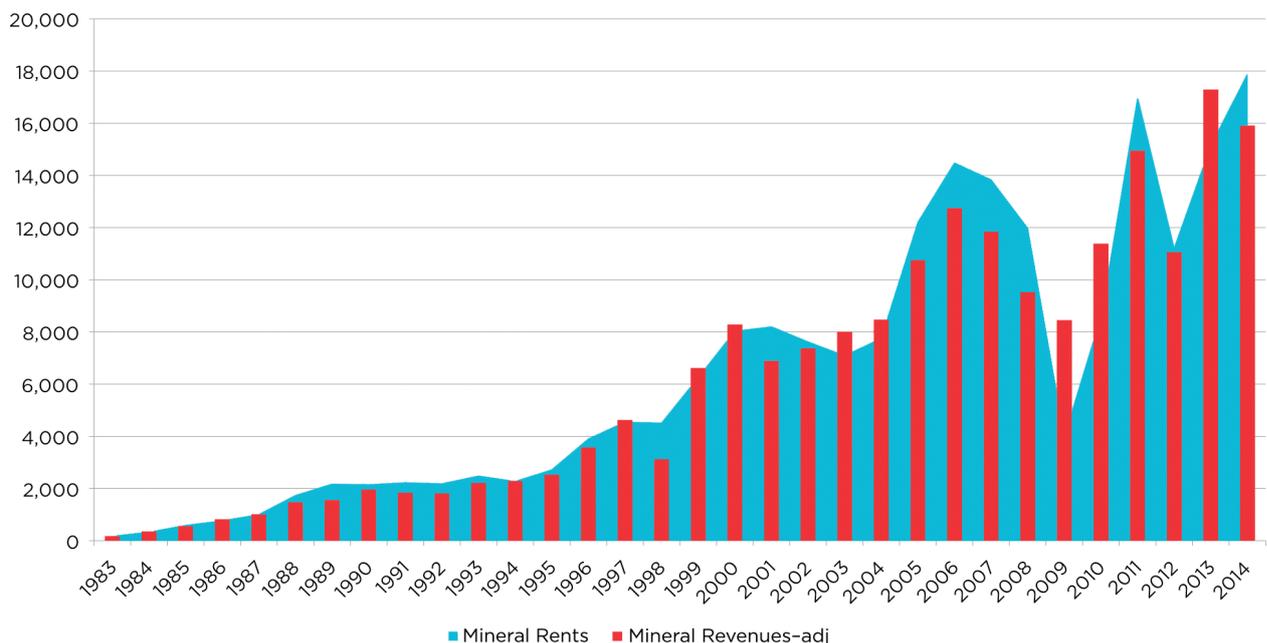
it subsistence—was the main user of water throughout the period, with very low added value per cubic meter. Mining is the second-highest water user, with low added value and harmful pollution effects.

- Services (transportation, communication) have the highest value added, along with construction, finance, and tourism. This information helps determine the sectors’ capacity to pay, and feeds into potential rate reform.

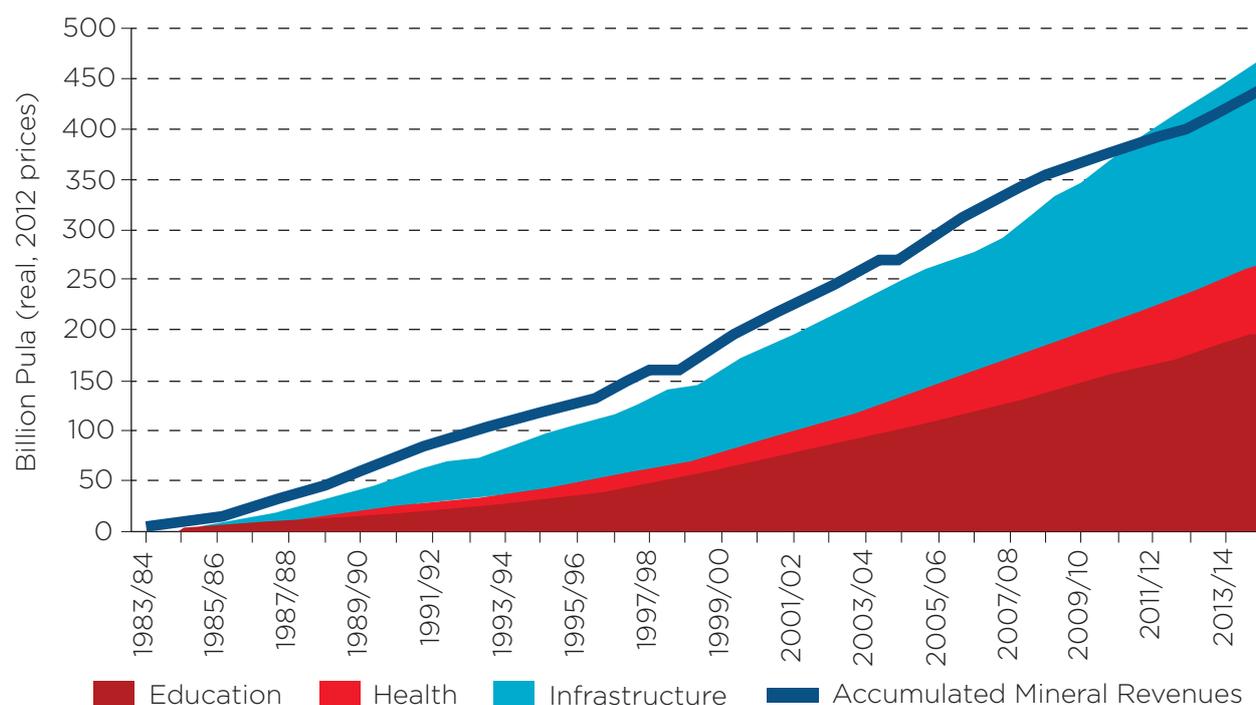
Water accounts also depict geographical links between availability and consumption, showing where water scarcity is at its highest. The accounts show the need for more efficient water allocation and better management of water resources, such as recycling wastewater.

**Mineral accounts provide valuable economic information** on diamonds, copper/nickel, gold, coal, and soda ash. They report on rent recovery, distribution, and investment, as well as strategies to deal with short-term price drops (such as during the 2008–09 financial crisis, which affected diamond and gold prices). They also

**Figure 1. Mineral Revenues and Rents**  
(in millions of pula, the local currency, at current prices)



**Figure 2. Highlights of Results from Macroeconomic Indicators**



Source: WAVES. *Botswana Country Report 2016*. Washington, DC.

provide a basis for long-term planning, especially in terms of energy investments. Some of the results:

- The accounts show that, in contrast to many countries, Botswana has been successful in recovering most of the resource rents, which can be used for the benefit of citizens.
- Rents from coal have been consistently negative.
- Minerals contributed an average 19 percent of gross domestic product (GDP) from 1994 to 2014, but this contribution is in decline. In 2009, resource rents fell to just 5 percent of GDP due to the global economic recession.

**Energy accounts provide information on diversification from coal** to more renewable sources. Botswana has made investments that could turn the country into a net exporter of electricity in the future, mostly using coal. This has a high impact on emissions and increases dependence on nonrenewables. Some of the results from a scoping exercise conducted in 2014/15<sup>1</sup> show that:

- The share of domestic electricity production increased from 14 percent in 2010/11 to 69 percent in 2014/15, a gain obtained through investment in coal power. Consumption of electricity increased by 22 percent over the same period. Electricity imports have declined.
- The transition has been difficult because of operational problems at the Morupule coal-fired power station, Botswana's biggest source of domestic power generation. This needs to be addressed to guarantee a reliable supply in the country and minimize costs of sudden demands for electricity imports.
- Coal production is a high emitter of carbon dioxide. Domestic emissions increased from 0.7 million tons in 2010/11 to 3.2 million tons in 2014/15. Although emissions from imports have decreased (from 2.5 to 1.2 million tons), Botswana is still a net emitter of carbon dioxide. This can have impacts in international negotiations about climate change.

**Macroeconomic indicators include mineral revenues and public finance.** Botswana has been good at investing mineral revenues in

physical and human capital assets, especially during the years of fiscal surplus (Figure 2). This has changed in recent years because the resource base is being depleted, though the country has managed to save from its resources.

## Policy Impacts

**Strategic policy.** Better data on physical stocks and flows is informing the National Development Plan (2017–22), as well as the National Strategy for Sustainable Development, the National Vision 2036, and ratification of the Gaborone Declaration for Sustainability in Africa (GDSA). The government led the demand for the accounts.

**Information for fiscal planning and strategic investments.** From a series of surplus years, the fiscal balance moved to deficit in fiscal year 2015/16 of P6.63 billion, higher than the projected P4.20 billion.<sup>1</sup> The main reason has been the volatility in mineral export revenues. The economy is still expected to rebound again, driven by the mining sector, but new investments are needed in non-mining activities to help stabilize revenue and address the challenges of poverty, unemployment, and income inequality.

**Diversification strategy.** Natural capital accounts provide input to the government's economic diversification drive. Water accounts, for example, are helping the Ministry of Finance and Development Planning understand the economic contributions from water to other sectors, to better design water allocations and rates. The accounts, especially the mineral accounts, have the ability to inform the new Economic Recovery Plan.

**Water sector reforms.** Water accounts are being used in the National Water Master Plan and water sector reforms, as well as the Master Plan for Wastewater and Sanitation, the 2013 Integrated Water Resources Management Plan, the National Development Plan (2017–22), and Vision 2036.

**Benefit-sharing strategies.** The information from the accounts can help assess the economic impacts from investments—such as in protected areas. This information can be used to help design better benefit-sharing from tourism to communities.

**Capacity sharing.** Botswana has been supporting and sharing experiences with neighboring countries such as Rwanda and Zambia.

## Notes

<sup>1</sup> Khama, I. December 12, 2016. "SONA: Economic Outlook." *The Patriot*. Available at: [www.thepatriot.co.bw/news/item/3551-sona-economic-outlook.html](http://www.thepatriot.co.bw/news/item/3551-sona-economic-outlook.html) (accessed on May 30, 2017).

## Wealth Accounting and the Valuation of Ecosystem Services

WAVES is a World Bank-led global partnership that aims to promote sustainable development by ensuring that natural resources are mainstreamed in development planning and national economic accounts.

 [www.wavespartnership.org](http://www.wavespartnership.org)

Credit: written by Ina Porras and Rosalind Goodrich, IIED.

