



Republic of Botswana

Ministry of Finance and  
Economic Development

# Policy Brief

**NATURAL CAPITAL ACCOUNTING AND  
SUSTAINABLE DEVELOPMENT GOALS  
INTERLINKAGES IN BOTSWANA**

*July 2021*





## INTRODUCTION

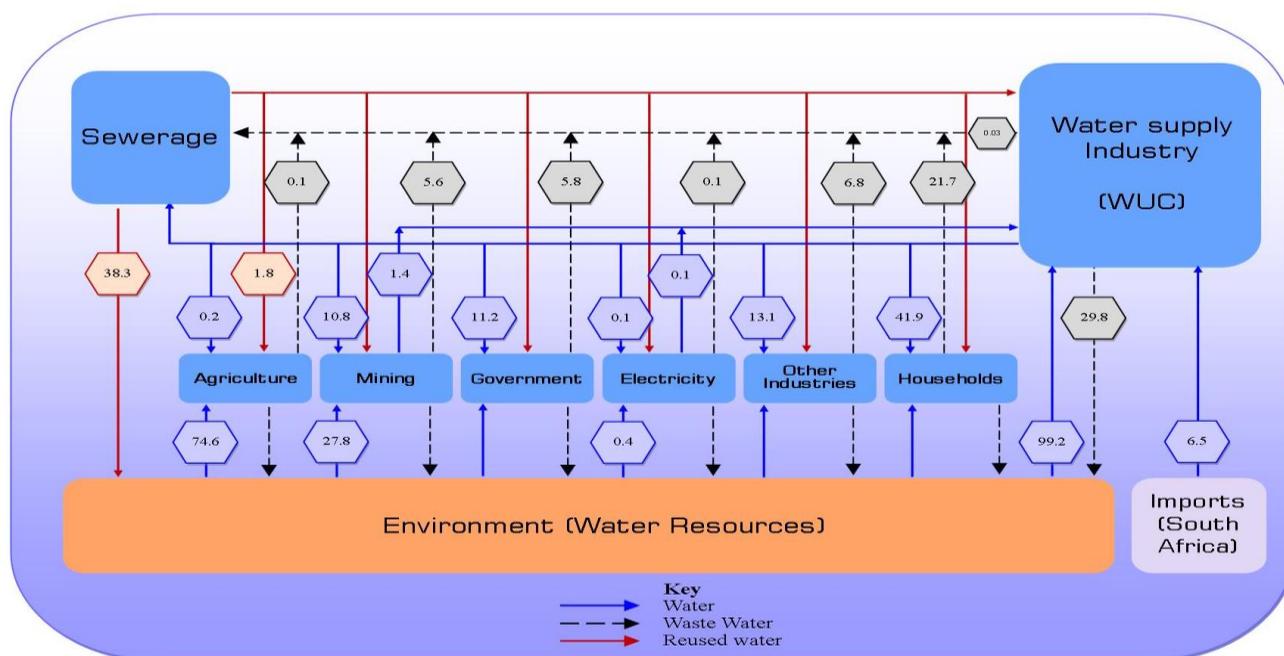
Natural capital accounting (NCA) is the process of calculating the total stocks and flows of natural resources and services in a given ecosystem or region/country. Accounting for such goods may occur in physical and monetary terms. The objective is to use this information for better government decision-making. Compiling NCA for water, energy, minerals and the adjusted macroeconomic indicators of sustainability in Botswana uses the internationally accepted methodology called the System of Environmental Economic Accounting (SEEA). Due to strategic importance of water, energy and minerals in the economy, these resources were prioritized for NCA by the Botswana Economic Advisory Council during the inception of World Bank-led Wealth Accounting and the Valuation of Ecosystem Services (WAVES) programme in 2012. The SEEA is satellite to the System of National Accounts (SNA) which is used globally to monitor economic performance of most countries. It thus uses concepts, definitions and classifications consistent with the SNA.

The increased use of the SEEA leads to improvements in data quality and therefore better economic decisions affecting natural resources management. In Botswana, data generated by different natural capital accounts is used to monitor various SDGs indicators and this linkage will be shown in this Policy Brief.

## WATER ACCOUNTS AND SGD 6

Botswana uses the System of Environmental-Economic Accounts for Water (SEEA-Water) and the International Recommendations for Water Statistics (IRWS), adopted in 2007 and 2010 respectively, by the United Nations Statistical Division (UNSD), to compile its Water Accounts. The SEEA-Water framework supports the 2030 Agenda for Sustainable Development as it captures statistics that are used to monitor SDG 6. Water Accounts are currently used to report on some SDG indicators, specifically; indicator 6.4.1 (change in water use efficiency over time), indicator 6.4.2 (level of water stress: freshwater withdrawal as a proportion of available freshwater resources) and indicator 6.5.1 (Degree of implementation of integrated water resources management).

**Figure 1: Physical supply and use diagram 2018/19 (MCM)**



Source: DWSS Water Accounts, 2021

SDG target 6.4 is monitored through Aquastat, a global public reference information system on water maintained by the Food and Agricultural Organization (FAO). Since inception of reporting on the SDGs, Water Accounts (physical supply and use tables) have been the primary sources of data for the Aquastat database. This database captures data on water sources and water use by different economic sectors. In order to ease reporting it has been aligned with the SEEA-Water framework. Figure 1 above is a schematic diagram of flows between the environment and the economy as presented by the water accounts and captured on Aquastat to compute water use efficiency and the level of water stress.

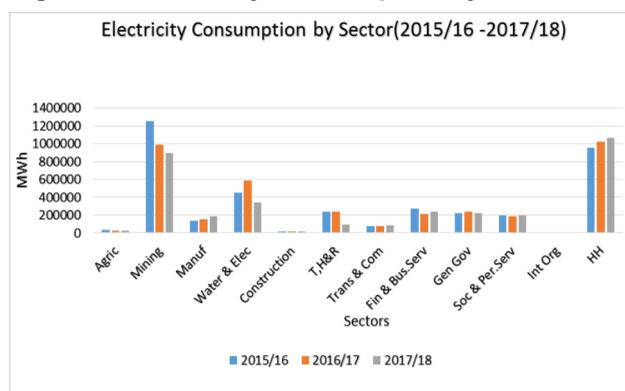
Besides providing data for monitoring target 6.4, Water Accounting is an integral tool in monitoring indicator 6.5.1 (Integrated Water Resource Management) as it is one of the management instruments for promoting sustainable and efficient water use.

## ENERGY ACCOUNTS AND SDG 7

The Energy Accounts can be used to track progress of SDG 7 which aims at ensuring access to affordable, reliable, sustainable and modern energy for all. Similar to Water Accounts, Energy Accounts also employ the SEEA–Energy to capture the interaction between the economy and the environment in order to determine socio-economic and environmental sustainability. Accounting for energy is useful in exploring available energy mix, improving energy efficiency (SDG 7, indicator 7.2.1 on Renewable energy share in the total final energy consumption and indicator 7.3.1 on Energy intensity measured in terms of primary energy and GDP) and assessing environmental impacts of energy use.

Energy Accounts currently include the following activities warranting them the potential to fully track and report on the above SDG 7 indicators.

**Figure 2: Electricity Consumption by Sector**



Source: DOE Energy Accounts, 2021

The inclusion of Phakalane 1.3 MW Solar PV Station in the Energy Accounts provides a platform for future inclusion and monitoring of renewables and their contribution to the energy mix. Currently, this Solar PV Station contributes less than 1% of total electricity generated. In a bid to address SDG 7.2 target (increasing the share of renewables in the global energy mix) and reduce the country's carbon footprint, the Ministry of Mineral Resource, Green Technology & Energy Security is planning to implement more renewable energy projects.

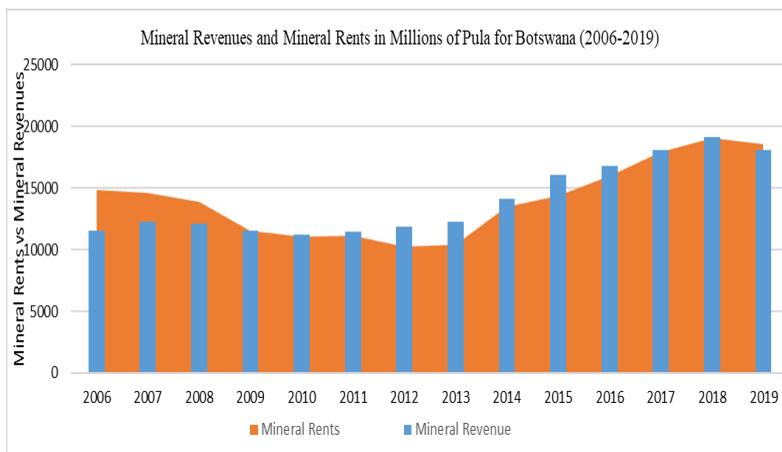
Figure 2 above shows that the Mining and Household sectors are the main consumers of electricity. This makes them targets for energy saving measures. However, further work is needed to identify most consuming activities (e.g.Space heating/cooling) within these sectors.

The Energy Accounts also track energy intensities in order to determine energy efficiencies/inefficiencies within the mining sector. In future, this activity will be extended to other economic sectors. Currently, there isn't enough data to disaggregate other sub-sectors.

## MINERAL/ WEALTH ACCOUNTS AND SDG 12

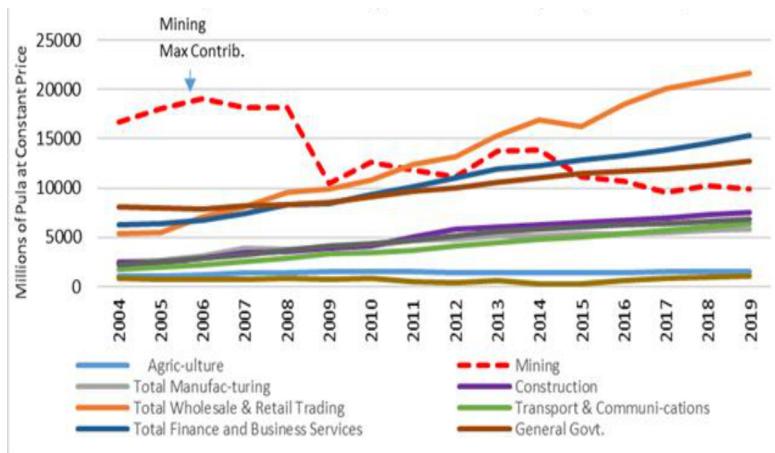
Mineral and Wealth Accounts provide evidence-based data with potential to assess SDG 12, which aims at ensuring sustainable consumption and production patterns. It is notable that target 12.2, which spells out that; "By 2030, achieve the sustainable management and efficient use of natural resources", is also supportive of Botswana's Vision 2036 pillars of Sustainable Economic Development and Sustainable Environment. Mineral Accounts reflect the country's wealth in terms of minerals and the depletion level of those resources as a result of extraction/production, while the Wealth Accounts exhibit the country's investment patterns in different assets portfolio. Therefore, this information is critical in monitoring natural resource management and determining whether a country is on a sustainable economic development path or not, given its consumption patterns.

**Figure 3: Mineral Rents from expected Revenues**



Source: BGI Mineral Accounts, 2021

**Figure 4: Value added by kind of Economic Activity at constant Prices, 2006 prices (Million of Pula)**



Source: BGI Mineral Accounts, 2021

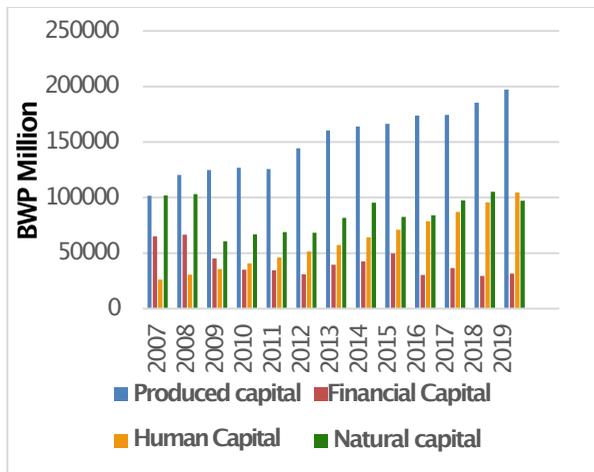
**Botswana has been deemed to be on a sustainable path as it has succeeded to obtain the mineral rents (see figure 3) from expected mineral economic values. The accounts further reveal that mining has reached maturity where its largest share to total GDP was in 2006 (figure 4), and has seen declines at various global economic shocks (2009, 2012, 2015 & 2019) affecting the economy as a whole. The accounts recommend that given the declining mineral revenues over the years, new growth models are needed with changing world dynamics such as diversifying the mining sector and unlocking potential of mine-to-market value chain.**



Mineral Accounts and Wealth Accounts have strong linkages.

Mineral value data generated by the Mineral Accounts is used as a proxy for natural capital which is included in computations of total wealth.

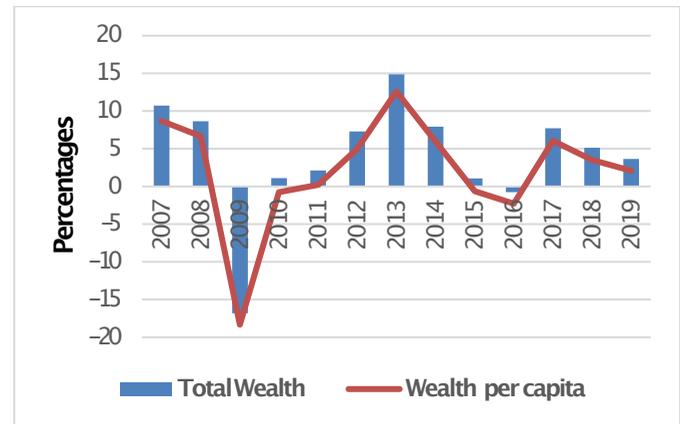
**Figure 5: Composition of Wealth, 2007-2019**



Source: MFED MISD Framework, 2021

Natural resource rich countries should transform their natural wealth into other forms of capital as the path to sustainable development. The country has been investing proceeds of minerals into different asset classes as evidenced by the huge contribution of produced/manufactured assets and human capital to total wealth (see figure 5). Natural capital used to be the main contributor to total wealth; however, from 2008 onwards, it was surpassed by produced capital. This explains why the country experienced rapid socio-economic development as a result of prudently investing mineral revenues into different asset portfolios. From figure 5 above, investment in financial capital remained relatively low during the entire reporting period. This therefore, suggests that the country has to increase its investment in financial assets which are essential to maintain macro economic stability during global economic and financial shocks.

**Figure 6: Comprehensive Wealth overtime, 2007-2019**



Source: MFED MISD Framework, 2021

For every country that aspires to have a higher standard of living for their citizens, sustainable development requires not just increasing wealth but also per capita wealth (World Bank, 2011). World Bank further indicates that if the population is growing, wealth must also increase to maintain the standard of living of each person. Figure 6 illustrates that Botswana's total wealth increased substantially between 2006 and 2019. An increase in total wealth supported an increase in per capita wealth because Botswana's population grew more slowly at an average growth rate of 2 percent from 2006 to 2019. Wealth creation is attributed to high investment in produced capital. As a result, large increases in produced capital, such as building of roads, bridges, schools and health facilities, has offset the decline in natural capital, thus increasing total wealth. Even though natural assets declined overtime, they remain key in contributing to total GDP and total revenues, and thereby enhancing economic growth.





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Ministry of Finance and Economic Development  
Economic and Financial Policy Division  
Macroeconomic Policy Section  
Private Bag 008.Gaborone, Botswana  
Tel:+267 3950275/193  
Website:[www.finance.gov.bw](http://www.finance.gov.bw)