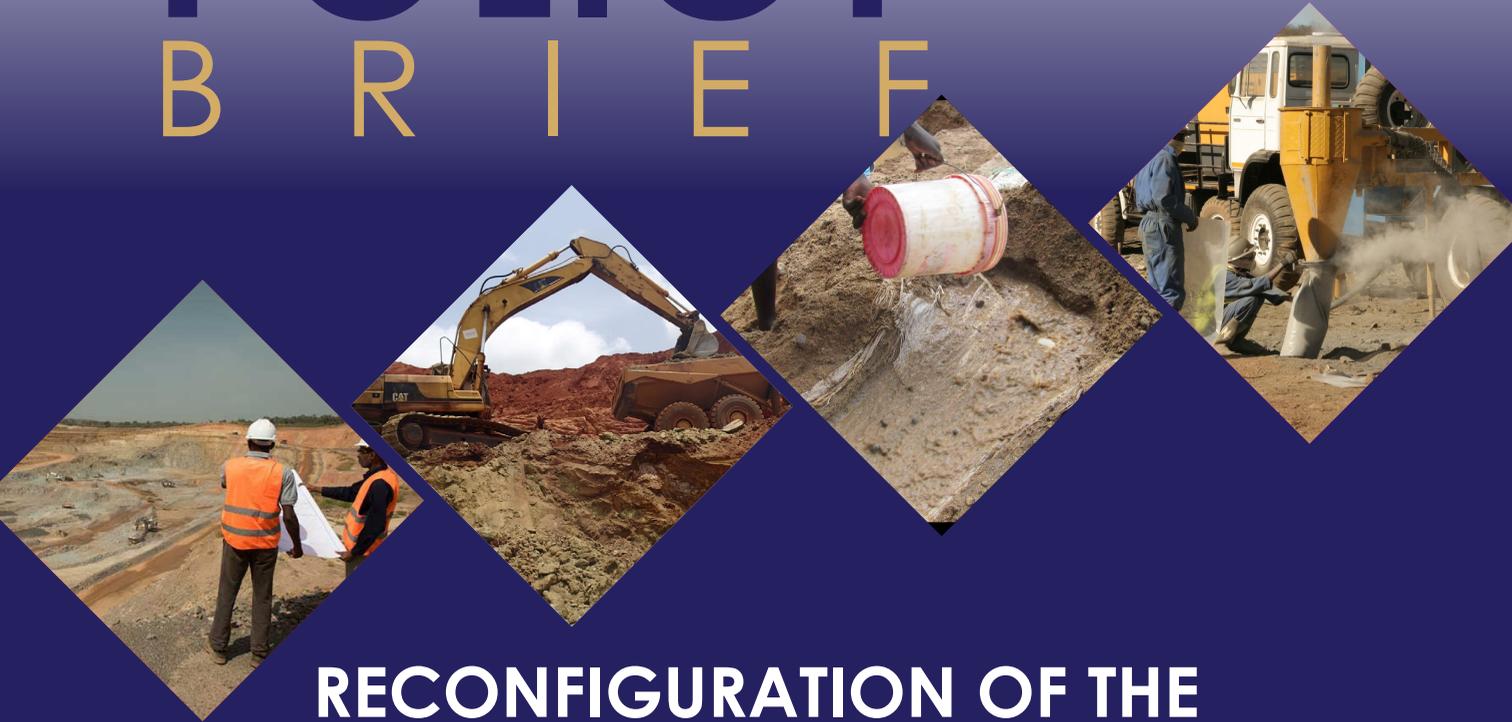




Zimbabwe Economic
Policy Analysis and
Research Unit

POLICY BRIEF

No. 1, 2017



RECONFIGURATION OF THE ZIMBABWE GEOLOGICAL SURVEY

1. BACKGROUND

This Policy Brief summarises the key findings from a detailed study undertaken by ZEPARU in 2016 entitled, 'Reconfiguration of the Zimbabwe Geological Survey'. The study was funded by the African Development Fund as a subcomponent of a grant extended to the Republic of Zimbabwe under the Governance and Institutional Support Project (GISP). The overall objective of this study was to identify institutional gaps and capacity challenges that undermine the fulfilment of ZGS's mandate and to explore the possibility of enhancing that mandate to propel the ZGS to become an effective and efficient world class institution.

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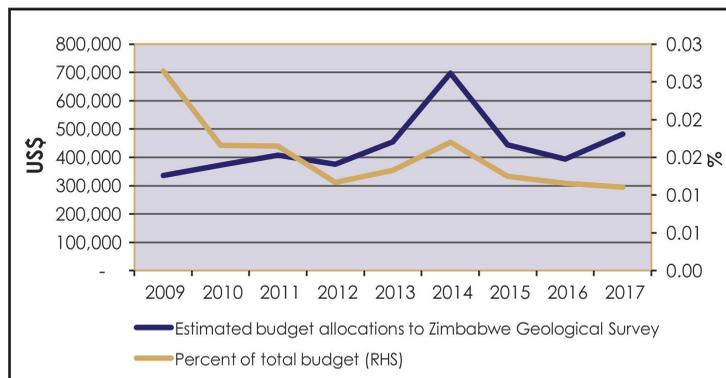
KEY POLICY ISSUES ESTABLISHED

The main challenges that have compromised the institutional capacity of the ZGS include difficulties in recruiting suitably qualified and experienced geoscientists, inability to efficiently service, maintain and replace aging equipment, and a huge research publishing backlog. The procuring of equipment for cartography, geophysics and rock cutting/ thin section preparation that was done as a component of GISP will go a long way in mitigating some of the equipment challenges.

The ZGS is currently legally recognized under Section 387 of Zimbabwe's Mines and Minerals Act (Chapter 21:05) of 1996. However, the Act does not spell out fully the functions or mandate of the Geological Survey. It only confers upon the ZGS staff authority to enter upon any land for the purposes of exploration, sampling or inspection without hindrance. The Zimbabwe Geological Survey's legally recognized mandate is therefore very limited and poorly defined, especially when compared to similar institutions in the region and beyond. The lack of a clear legal status of the ZGS imposes limitations to its functioning, growth and innovativeness.

The ZGS is primarily funded by government through treasury budget allocations. From independence in 1980 to the late 1990s, this funding was significantly supplemented through technical cooperation funding from foreign governments or their agencies. There have been no new major technical cooperation projects with other geological surveys and support from foreign governments or their agencies except for some project partnerships with Japanese, Russian and Chinese governments that are being implemented. The reduction in technical cooperation funding, has not been matched by an increase in Government budget allocations, leaving the ZGS perennially underfunded. The general decline in economic performance between 2000 and 2008 on the back of hyperinflation, financial sector instability, company closures, and low capacity utilization, among other challenges, compounded the funding capacity of Treasury. Although the economy stabilized in 2009 as a result of dollarization, budget constraints continued. Between 2009 and 2017 the national budget allocations to the ZGS have ranged from US\$300,000 to a peak of US\$700,000 in 2014. In 2017, there is an increase to about US\$482,000 from US\$394,000 in 2016 (Figure 1). However, the share of the budget allocations as a percentage of the total budget has declined from 0.03% in 2009 to an estimate of 0.01% in 2017, which generally shows that ZGS has been getting less priority compared to other competing budgetary needs. The underfunding of the ZGS continues to undermine its ability to effectively execute its mandate.

Figure 1: Budgetary allocations to the ZGS, 2009 to 2017



The ZGS (and its predecessors) has also struggled to attract and retain experienced and appropriately trained personnel. Relatively low remuneration was a major reason for experienced staff leaving to join private practice. At present the ZGS is unable to attract the most experienced and most talented personnel and has to resort to designing internal training programmes for personnel.

3.

PROPOSED RECONFIGURATION STRATEGIES

A brief outline of the different initiatives that can be instituted to reconfigure the ZGS and make it more responsive to the needs of stakeholders as well as facilitate the contribution of the mining sector to the economy include the following:

Legal status and powers

In general, autonomous or semi-autonomous state agencies have the advantage of reduced bureaucratic procedures compared to government departments. The ZGS is likely to be in a better position to create additional sustainable revenue streams that may significantly complement government funding if it transforms into a State Agency. This calls for legislative reforms that provide for such transformation. Similar transformation has happened in Geological Surveys of other countries, including South Africa, Tanzania, Algeria, Britain, New Zealand, and the Netherlands.

More and better services from ZGS may arise if the ZGS morphs into a more efficient, legally empowered and well-resourced State Agency with clearly defined functions. By positioning itself as such, the ZGS can become an indispensable institution that is critical for the development of the mining sector and the development of Zimbabwe in general. Such an Agency can work with the government and its development partners, the private sector, local authorities, training institutions and others in resource mobilisation for sustainable national development.

Expanding or maintaining traditional functions

Many Geological Surveys worldwide, including South Africa's Council for Geoscience, the British Geological Survey, and Geological Survey of Finland have since moved beyond the traditional functions of geological mapping and mineral resources inventories to incorporate areas such as engineering geology, hydrogeology, environmental management, geo-hazards mapping and climate change. While expansion of functions of the ZGS is desirable for its long term sustainability, the ZGS must initially concentrate on re-establishing its former basic functions, particularly regional geological mapping which will act as an anchor for any expansion programmes. Regional geological mapping is such a core function of a Geological Survey that is interlinked with all other functions such as cartography, petrology and mineralogy, geochemistry, geophysics, mineral exploration and mineral resources inventories.

Some areas in Zimbabwe were last mapped more than 50 years ago and some of the maps need updating to encompass evolving thinking. The 1:1 million geological map of Zimbabwe, a very important mining investment decision tool, had its last major update in 1977 and new geological knowledge acquired since then is compiled but is yet to be captured on that map. The next move would be to produce a larger-scale map for the country such as the 1: 250,000 map, in keeping with trends in other jurisdictions. Other countries are aiming for even greater mapping detail. Thus, before services are expanded, there is need for such traditional services to be perfected.

The current plans to establish a new section, Applied Geology, to encompass all non-traditional functions of ZGS and coordinate workflows between the ZGS head office and mining geologists posted at provincial centres is a welcome development. This will accommodate future expanded activities while ensuring that ZGS remains relevant in a decentralizing Ministry of Mines and Mining Development. Tasks involving some of the non-traditional functions can be offered as services to client at reasonable non-commercial costs to cross-subsidise the public good functions such as mineral determinations and grassroots geological evaluations.

Funding model

The ZGS is currently funded by the government through Treasury budgetary allocations. A capacitated and resourced Geological Survey can significantly supplement government funding through private and public sector consultancies, contracts, technical services, commissioned research and product sales. An emerging trend is that Geological Surveys can be funded 70% by government and as much as 30% through consultancies, commissioned research and provision of technical services and product sales. This 70:30 ratio has been achieved by Geological Surveys of Britain, the Netherlands and Finland. South Africa's CGS has a ratio of about 80:20, which is far better than the current situation in Zimbabwe.

However, a geological survey institution can only sustainably fund its activities from consultancies and commissioned research when it has attained a good reputation. The ZGS needs to re-tool and re-establish its former basic functions and demonstrate capacity to undertake work for private and public sectors to be able to attract funding from contracts and commissioned research.

Human and material resources

Already a number of ZGS employees with diplomas from the Zimbabwe School of Mines are enrolling with Universities to upgrade their qualifications to degree level. This should continue to be encouraged and incentivised, as recruiting experienced personnel is a challenge due to budget constraints. The coming on

stream of the Pan African Minerals University (PAMUST) for postgraduate studies should go a long way in skilling ZGS staff. Other Universities offering training and qualifications in Geosciences should also complement these efforts. For example, the Midlands State University is the first University to enrol mining industry diploma holders into programmes to upgrade their qualifications to degree level. One area for which urgent training is required is in field regional mapping which was last formally conducted by the ZGS in 2003/2004, yet 40% of the country remains unmapped. South Africa's CGS has established a field school specifically to impart mapping skills to interns and new recruits. The ZGS can establish such a school on its own or in partnership with a training institution given the binding budgetary constraints currently being experienced by ZGS.

Structure of the ZGS

Given that decentralisation that is taking place at the Ministry, there is need for a lot of clarifications regarding the operations of the ZGS within the decentralised Ministry. Some of the structural issues for consideration include the following:

- Provincial Mining Geology: Clarification is required on whether the provincial geology unit belongs to the ZGS or to the parent Ministry and how the ZGS headquarters and the provincial offices can work as seamlessly as possible.
- Applied Geology: Specialist areas, such as Engineering Geology, Geo-tourism, Geochemistry, Hydrogeology and Environmental Geology, can helpfully be itemised on the proposed structure of the ZGS. Hydrogeology is presently under the Groundwater Branch of the Zimbabwe National Water Authority. Similarly, Seismology which normally falls under Geophysics and is an important unit at geological surveys of South Africa and Namibia is overseen in Zimbabwe by the Goertz Observatory in Bulawayo.
- Geochemistry Laboratory: The ZGS should consider whether or not to re-establish this unit which was disbanded in the 1990s. One option is to outsource the services to other government or government-related institutions such as the Department of Metallurgy and the Institute of Mining Research (IMR).
- Economic Geology: Provision for mineralogist should be considered within this Section.
- Field Mapping Section: This is a priority area given that about 40% of the country has never been mapped, and that there is need to remap some areas at larger scales or to accommodate new geological knowledge. Thus, this Section appears understaffed with only five geologists and two technicians. In comparison, the Namibia GSN Regional Geoscience Division has 19 Geoscientists (similar to previous ZGS structure which had provision of 18 field geologists), two administrators, four 'workhands', a cartography subdivision manned by five cartographers and one technical assistant. One Field Orderly as proposed in the proposed new ZGS structure is inadequate; a mapping geologist requires a field assistant and a camp guard, who are normally temporary seasonal staff.
- Cartography: A deputy Chief Cartographer may be required.
- Library: The library appears bloated on the new structure given that, in comparison, it is much smaller than that of South Africa's CGS or that of the Geological Survey of Namibia (GSN). The GSN library has a staff establishment of four whereas the ZGS proposes an establishment of eight for its library. With electronic data management, including digital dissemination, the ZGS library can do with less staff numbers.
- Editor/ Mentor: There is need to provide for the position of in-house Editor/ mentor in the new proposed structure of the ZGS.

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