

Bush Information System

A **modern decision support tool** to tackle bush encroachment in Namibia

Bush encroachment in Namibia reduces agricultural productivity and has negative effects on ecosystem services. At the same time, bush biomass can offer a huge economic opportunity. The Bush Information System (BIS) maps and quantifies bush encroachment and woody biomass potential across Namibia. The system is an open source available online. Exploring potential yield (extractable biomass tonnes/hectare) and planning of harvesting activities can be based on evidence derived from geospatial data and maps.

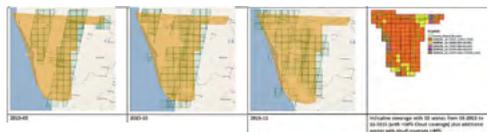
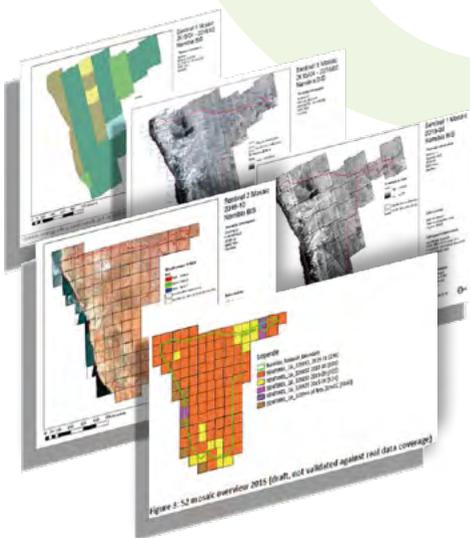
The Bush Information System allows users to:

- ▶ View and generate reports from information products
- ▶ Extract disaggregated assessments of a location
- ▶ Assess new spatial information at national level

The BIS displays the status quo and the dynamics of woody plants in Namibia. The information products are derived from existing geo information, recent sources of earth observation data and ground truthing survey.

Information products include:

- ▶ raster maps which provide information on the potential woody yield of the above ground biomass (tonnes per hectares), canopy cover, bush equivalents
- ▶ vector maps which contain spatial descriptions
- ▶ change maps which show woody cover per hectare from a bird's eye view for 2015 and 2018



The BIS is an easy-to-use tool for farmers, harvesters and government institution

Information for Farmers

Farmers can upload the boundaries of their farm and generate a number of maps as well as spatial assessments and evaluations. Based on this information, farmers will be informed where on the farm woody biomass is dense and which areas are suitable for bush thinning. The system supports for instance to manage and organise the application of harvesting and clearance permits, based on environmental assessments in combination with the BIS EO products.

Information for Harvesters

In addition to biomass density, information on roads, rivers, dams and further environmental data has been incorporated in the system. Harvesters can use it to plan their operations, taking into account transport logistics. The system is based on the estimate that 45 tonnes of biomass per hectare are required to extract 15 tonnes (i.e. 30% of the total biomass) – which is regarded a sustainable and viable option. Areas of biomass density over 45 t/ha can be displayed clearly on the map generated.

Information for the Government Officials

Officers of the Directorate of Forestry in the Ministry of Agriculture, Water and Forestry and the Ministry of Environmental and Tourism through the Department of Environmental Affairs, can explore bush encroached areas on the system. This will assist them in making informed decisions in issuing harvesting permits and environmental clearance certificates. Government officials can also use the system to monitor bush control on a wider scale and in terms of changes in biomass overtime.

The BIS was initiated with funding from the GIZ Bush Control and Biomass Utilisation Project. The system was developed by a consortium of specialised organisations, including EFTAS Fernerkundung Technologietransfer GmbH (Germany), Hansa Luftbild AG (Germany), Council for Science and Industrial Research (South Africa), Namibia Ecosystem Services (Namibia), Agri-Ecological Services, AgriConsult Namibia and Strydom & Associates Land surveyors (Namibia). The system will be hosted at the Namibia Statistics Agency.

For more information about the BIS, please contact:

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“ The Bush Information System is an extremely valuable tool in adding to the diverse data portfolio in Namibia. We strive to provide relevant data to a wide range of stakeholders, and we realised the significance of tackling bush encroachment in Namibia. We at the NSA are therefore grateful to GIZ and the Ministry for adding value to the government information infrastructure and for adhering to the NSDI guidelines in the production process of this system. We are also thrilled to host this new system. ”

Alex Mudabeti, NSA

