

## The Tanzania Food and Land Productivity Information System

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Categories:	Government A - Services
Date:	08/31/2018
Time:	11:30 - 12:00
Room:	Udzungwa

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This information system has been created to speed up the exchange of data and information in and about Tanzania and to support faster development, particularly in the agricultural sector. It is part of a cooperative effort of several German and Tanzanian research institutes (Trans-SEC project). The system has been implemented as a suite of web maps and spatial tools covering the whole of Tanzania. It is based on PostGIS, MapServer, OpenLayers, and GDAL/OGR using SQL, PHP, JavaScript, and Python to put the implementation together. The system has four main components: two spatial tools (1) the "Tanzania Food Security Monitor" and (2) the "Land Evaluation Tool", a suite of "Map Viewers", and a collection of "Natural Resource Data". The map viewers are interactive maps covering natural resources information including soil, climate, and crop performance on a national scale, and in addition, providing selected soil maps at the village scale. The Land Evaluation Tool is an interactive web-based tool targeted at non-GIS experts. The tool is based on the FAO framework for land evaluation and applies the Storie index in order to derive crop suitability classes. Many natural resource data layers are available for use in the tool calculations by default. Following a guided step by step approach users can interactively select their desired area of interest, set a variety of parameterizations in order to evaluate crop suitability for maize (the default) or for selected other crops. In addition, users can optionally include their own spatial data in the evaluation calculation and finally download results as raster files (in a resolution of 250m) for further processing. The Tanzania Food Security Monitor delivers dekadal (10 days) rhythm information on the current and past potential biomass productivity. The algorithm behind the monitor is the "Water Requirement Satisfaction Index" (WRSI, FAO). Based on regularly updated NOAA data on rainfall and potential evapotranspiration (PET) the WRSI is calculated for 12km by 12km tiles and presented as six categorical food security indicator classes. Recent and historical dekadal spatial patterns can be downloaded. A version of the full information system is also available as a virtual machine (for Virtual Box) that can be run locally on most operating systems without the need for an internet connection. The later provides a significant advantage in educational settings and allows to use the tool for work in remote locations without internet connectivity.