

Technology suitability maps for bioenergy potential in Togo

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Introduction

Energy transition in Togo is crucial to counteract deforestation and the effects of climate change. Alternative energy use from residual biomasses can play a key role in reducing deforestation. This study therefore analyses spatial information and field data to assess the bioenergetic potential for different sites (e.g. poultry farms, slaughter houses, market places).

Objective

- Assessment of the regional bioenergy potential in Togo
- Identification of suitable locations for bioenergy production
- Provision of spatial information on bioenergy potential for decision makers
- Determination of the most appropriate technologies for each energetic use case
- Consideration of region-specific preferences (e.g. deforestation) and infrastructure

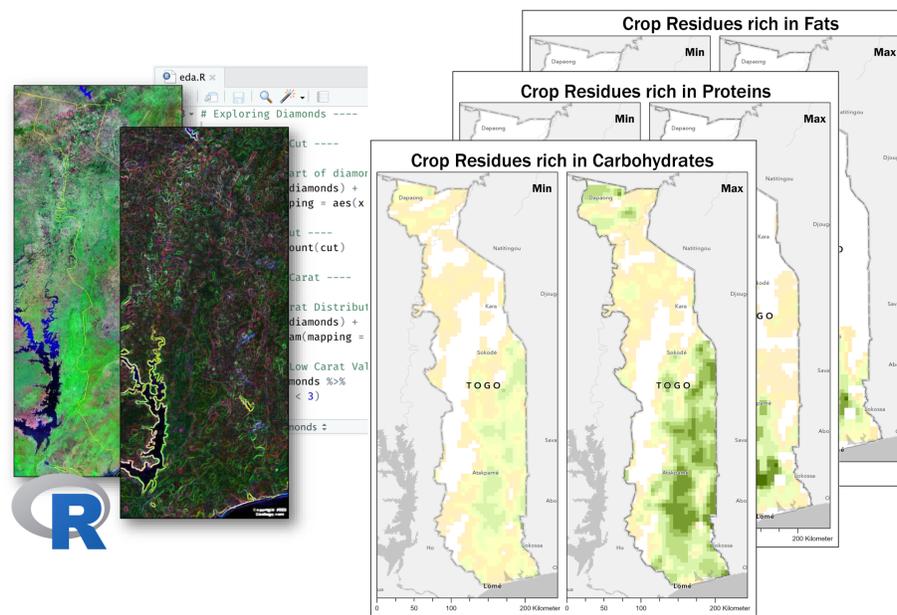


Figure 1: Graphical workflow of image processing and crop residue mapping.

Methods

- Spatial quantification of crop residues using resampled IFPRI's spatial production allocation model
- Categorization of different crop residues based on their chemical composition and specific feasibility
- Field data acquisition on site-specific residue generation
- Calculation of technology specific input requirements and spatial resource availability for bioenergy applications

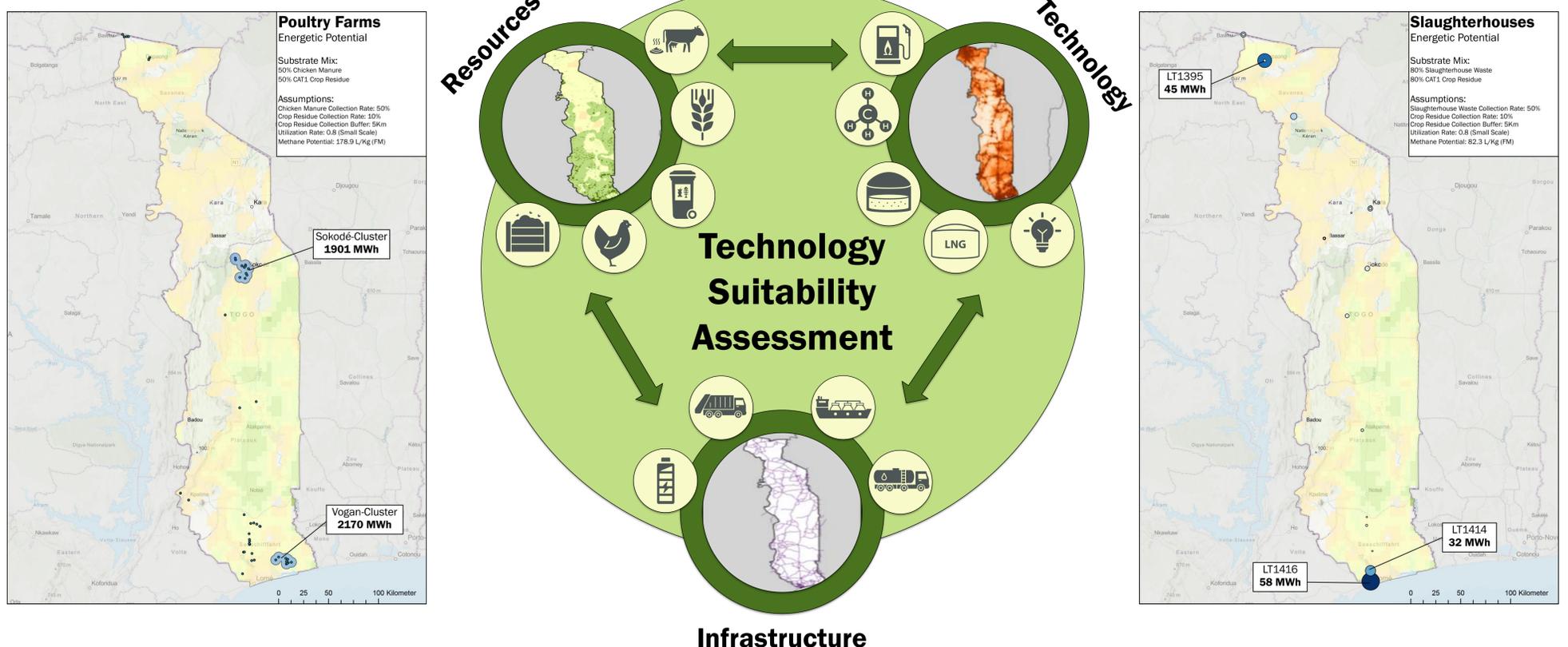


Figure 2: Assessment of specific energy outputs by combining technological parameters with infrastructure and resource availability.

Highlights

- Coupling spatial biomass potentials with quantities of biogenic residues from selected sites and technology parameters provides an estimation on bioenergy potentials for selected sites
- Underlying parameters can easily be adjusted (e.g. waste and crop collection rate, residue-to-crop ratio (RCR))
- Planned: Automatization of technology suitability maps for further regions as an interactive webmap