

Improving the Agricultural Potential of Smallholder
Farmers through the adoption of Water Conservation
technologies in the White Volta Basin of Ghana

A presentation by

Conservation Alliance

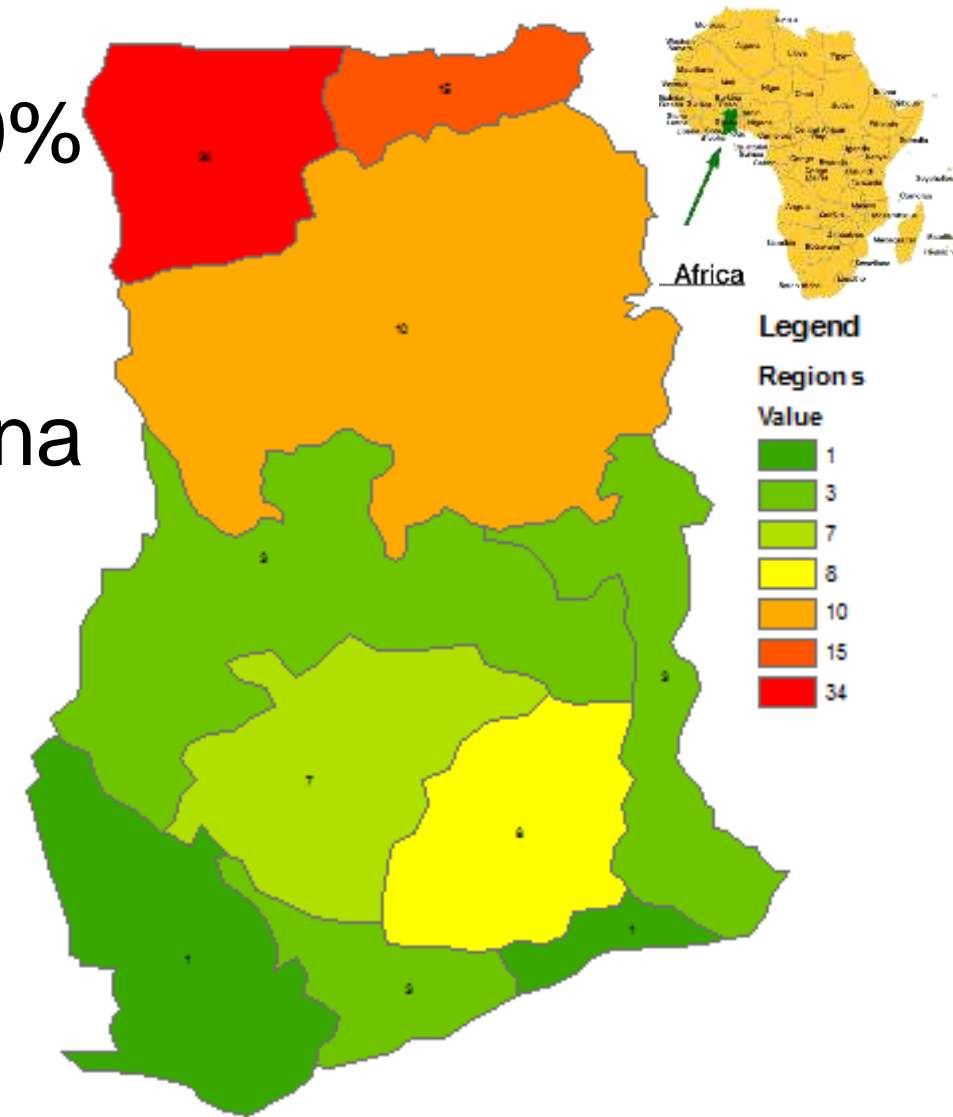
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Background

- Least Developed (high poverty rate)
- Northern Ghana contributes up to 90% to Ghana's food basket
- Agriculture constitutes 80% of household incomes in Northern Ghana
- Erratic rainfall (One season average of 1320mm)
- Temperature (Evaporation of 1415mm)
- Flooding and Drought (Mean Run-off = 1480 (million cubic litres))

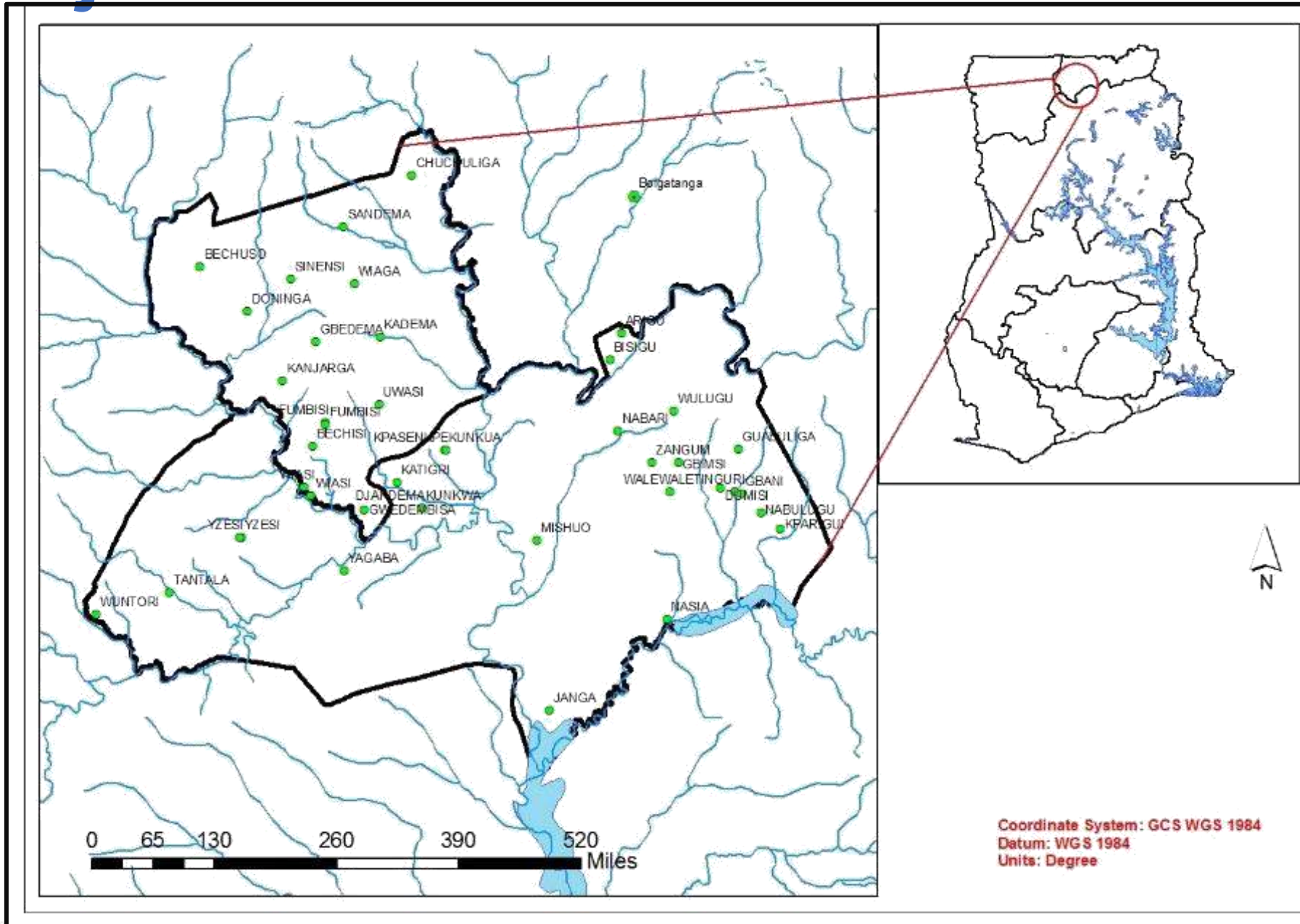
% of people that are food insecure



1:3,299,465



Project Area



Characteristics

- 100% within the basin
- Population 115,100 people (2000), 50% increase by 2025
- Economic activity Agriculture
- Water demands 81.5 (2000) expected to reach 317.5% millions litres/yr
- Annual Recharge 6.6%
- Run-off 1,480 million cubic meters/yr



Project Objectives

1. Establish demonstration plots for storage of floodwater for dry season agriculture within selected communities.
2. Assess the level of performance (e.g. water storage and delivery capacity) of the 2 technologies compared to existing small-scale irrigation schemes operating within area.



3. Assess the production trends of sites over two years of project implementation.
4. Assess the perception of rural riparian communities on natural resource use and governance documented during the 2-year period of project implementation.



Justification

- Understand the complex relationship between agriculture potential, human wellbeing and ecosystem health
- Accelerate growth, enhance food security and eradicate poverty in rural areas
- Adopt watershed planning, land use planning and appropriate methods for water storage and abstraction



Water Conservation Technologies Tested



Bhungroo Irrigation Technology



PAVE Irrigation System



Process Overview

Bhungroo Irrigation Technology



Materials Selection



Surveys / Drilling



Construction Work



Cleaning and Completion

PAVE Irrigation System



Materials Selection



Surveys/ Drilling



Construction Works



Cleaning and Completion



Approaches

Feasibility Studies

- Ecosystem Mapping and Assessment
- Hydrogeological Survey
- Soil testing and analysis
- Socio-economic data and community engagement
- Model preparation

Technology Introduction

- Community/ Site Selection
- Community Buy-in
- Materials and tools arrangements
- Construction of technologies
- Cleaning and commissioning of technologies

Monitoring and Evaluation

- Development of Model
- Periodic data collection into model
- Feedback from technology users/ community members
- Periodic expert surveys



Expected Results

- Storage of large quantities of water underground
- Water stored underground will be available for farming during the dry season
- Opportunity for both wet and dry season farming (Dual Season)
- More arable land is available for farming





Thank You