

## Improving the Adaptive Capacity of Smallholder Rice Farmers to Climate Change Variability: *The Importance of the 'Sawah' Technology.*

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### Introduction

Climate change is increasingly emerging as the most significant environmental threat to sustainability of human livelihoods in Ghana

The fourth assessment report of the IPCC further confirms that in general African countries are likely to suffer the most from the negative impacts of climate change

Emerging evidence on the potential impacts of climate change suggests that Ghana will become drier and experience more extreme weather conditions.

Farmers have responded to these adverse weather events by making changes in their farming practices

•These changes included increased crop diversification such as planting of early maturing crops

### Introduction continue

•Use of drought tolerant crop varieties and planting of different crop varieties

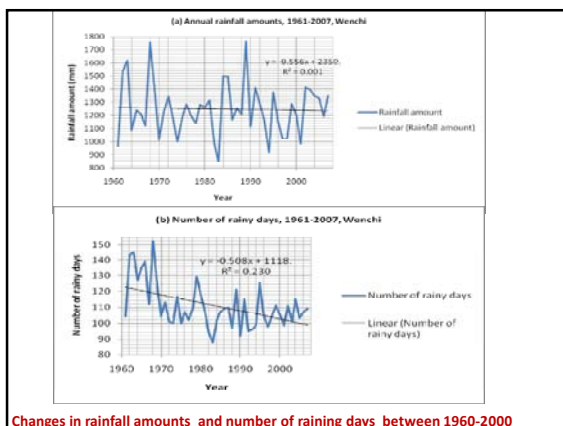
Smallholder farmers in Ghana who produce the bulk of the food and cash crops are therefore the most vulnerable to the various manifestations of climate change

Climate change will exert greater impact on smallholder farmers as they have the weakest capacity to adapt to changes in climatic conditions

### Introduction continue

In order to reduce vulnerability and future threat to food security among poorer households, there is the need to enhance the adaptive capabilities of smallholder farming communities to respond to climate change.

**THE 'SAWA' TECHNOLOGY THAT ENSURES PROPER WATER MANAGEMENT AND EFFICIENT RICE PRODUCTION WILL ENHANCE THE ADAPTIVE CAPACITY OF SMALLHOLDER RICE FARMERS**



A typical rain-fed rice field after one week of draught

Dry fields retard crop growth and grain yield



**'Sawah' refers to bunded and levelled rice field with irrigation and drainage systems.**

In addition to the bunds trapping rain water, dykes and simple reservoirs also help in water storage.





Comparison of paddy yield under 'sawah' and traditional systems

Farmer-group	2001	2002	2003	2004	2005
Adugyama-B	4.4	4.8	5.5	5.5	4.8**
Biemso-B	4.7	5.7	5.9	6.5	5.4
Traditional system*	1.0	1.0	1.0	1.1	1.1

\*rice grown under the natural condition \*\*rice fields partially affected by flooding  
Source: Buri et al. 2004

