



Tropentag, September 19-21, 2012, Göttingen -  
Kassel/Witzenhausen

“Resilience of agricultural systems against crises”

## Making Effective Use of Climate Information by Small Scale Farmers in Managing Rain-fed Maize Production: A Case Study in Bole, Ghana

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### Abstract

Crop production under rain-fed conditions largely depends on rainfall for moisture supply to crops. The rainfall received is unevenly distributed both geographically and seasonally and sets limits on crop production leading to high risk and low yield of crops due to water stress. With proper understanding of the major or important climatic factors such as rainfall, water and humid periods, important decisions for planning and management of rain-fed maize production can be made in Bole. Mean monthly historic rainfall and evapo-transpiration data covering the period of 1961–2002 for Bole were used to obtain the rainfall amount and its expected pattern and distribution, standard deviation, coefficient of variation of each month, aridity indices, risk factors, length of growing and humid periods. The results from the analyses show that the growing period for Bole is 214 days, implying that it has a higher agricultural potential and a longer drying period. The coefficient of variation and standard deviation indicate the dependability of rainfall in each month. The information developed could serve as a useful tool for a small scale rain-fed maize farmer during crop selection, timing of farming activities (supply of labour, land preparation, time of planting, harvesting and drying of crops) and also for agricultural entrepreneurs who are new to this particular environment. The information developed could serve as a useful tool during crop selection, timing of farming activities (supply of labour, land preparation, time of planting, harvesting and drying of crops) and also for agricultural entrepreneurs who are new to a particular environment.

**Keywords:** Aridity indices, climate, cropping calendar, evapo-transpiration, rainfall, risk factor