



# Certified seeds or certified bags?

## Governance challenges in Ghana's seed supply system

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### Problem Statement and Objective

Ghana's formal maize seed system is dominated by just one variety, called Obatanpa. Moreover, there are serious concerns regarding seed quality (Poku et al. 2018). The objective of this paper is to evaluate the genetic and physical purity of Obatanpa maize seeds that are sold in agro-input dealer shops.

### Methodology

The study was conducted in the Guinea Savannah agro-ecological zone (Upper West, Upper East and Northern Region). The “**Mystery shopper**” approach was applied. Bags of certified seeds labelled as Obatanpa were purchased in all the shops of the Ghana Seed Growers Association that were identified in the study area. In total 56 seed bags were purchased.

Reference seed material of the variety Obatanpa was obtained from the gene bank of CIMMYT in Mexico.

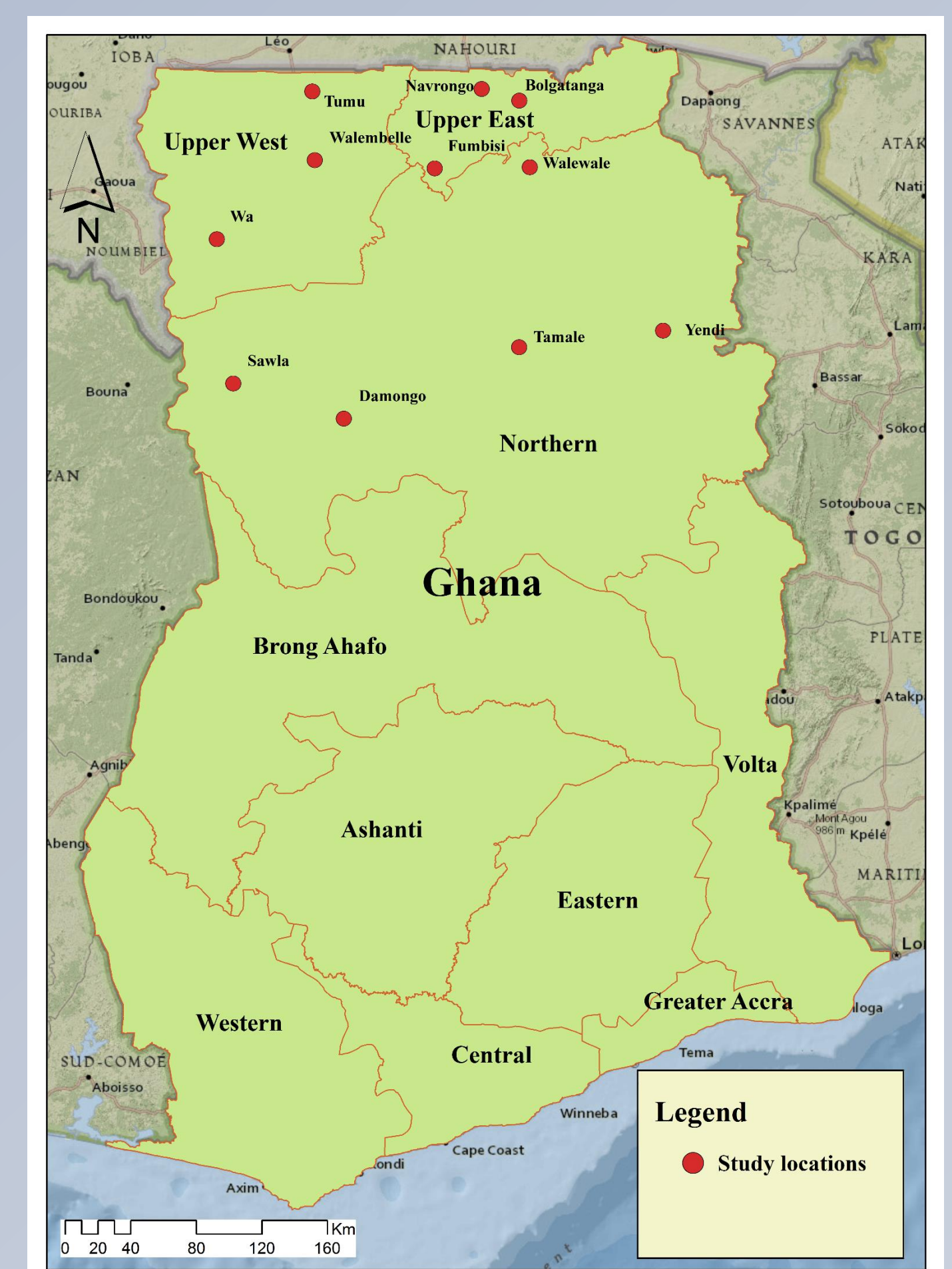


Figure 1: Map of Ghana



Figure 2: Problems of seed quality identified by visual inspection

### Visual criteria to assess seed quality:

- Weight of the bags
- Color, size and general appearance of seeds
- Contamination through pest or diseases

### Genetic features:

- Identified by genetic fingerprinting
- Principle Component Analysis of samples

### Results

#### Visual Criteria

- Average weight of packages was 854 gr instead of 1kg.
- 12 packages were closed with stiches, staplers or tape.
- 6 packages contained yellow seeds instead of the characteristic white/pale Obatanpa color.
- 8 packages were infested by insects at time of purchase.

#### Genetic features

- Principle Component Analysis suggests that only few samples can clearly be identified as Obatanpa.

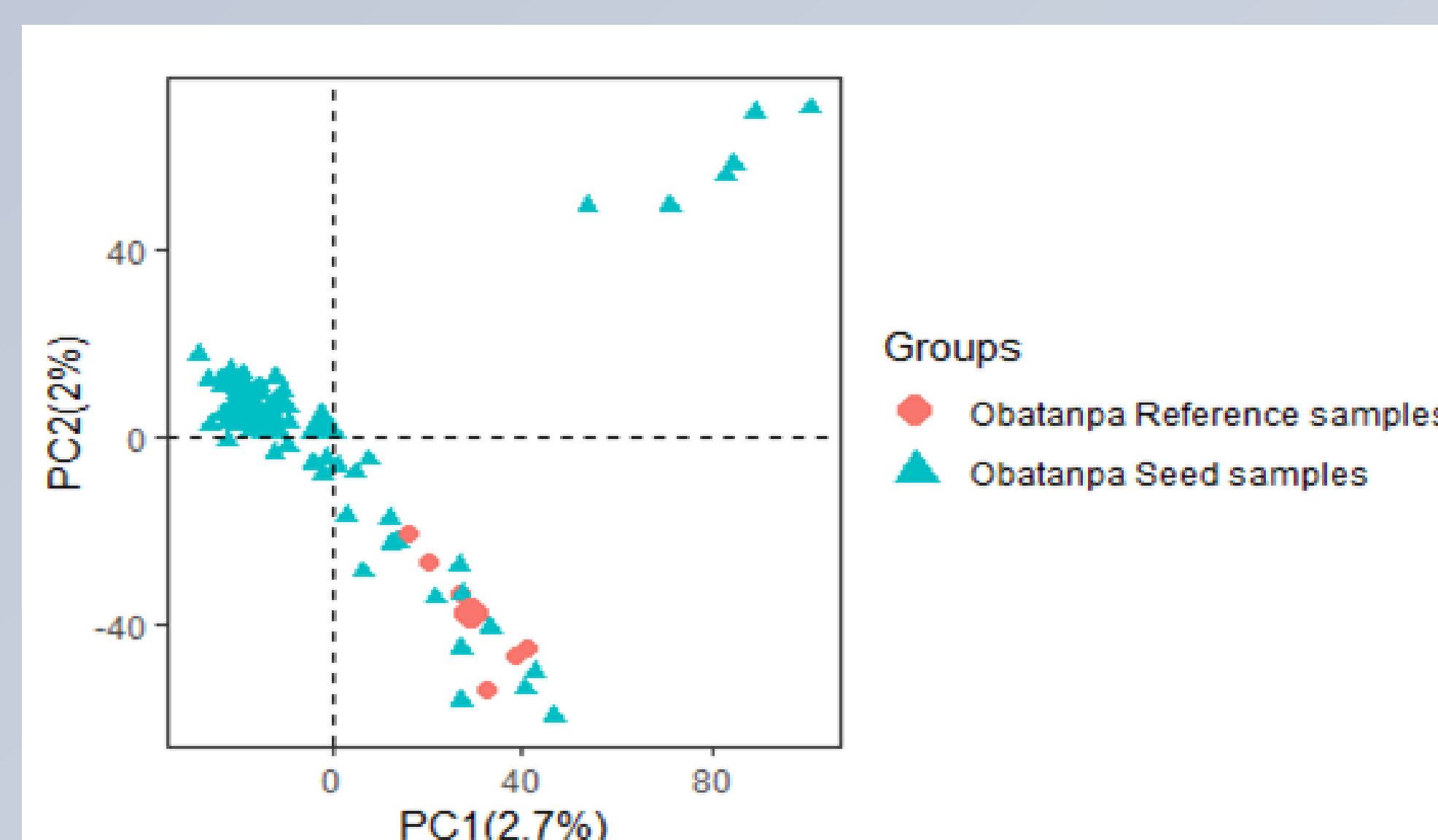


Figure 3: Principal Component Analysis



### Conclusions

The findings suggest that seed alteration is a major problem in Ghana, and entry points can be assumed along the entire production chain of the certified seeds. The study stresses the need to increase the purity of the genetic material available to small-scale farmers.