



MARKER-ASSISTED BREEDING OF SELECTED NATIVE CHICKENS IN MOZAMBIQUE AND UGANDA

INTRODUCTION

In Mozambique and Uganda, village poultry production is an important component of rural livelihoods and development. Most chickens are kept in small-scale extensive traditional systems in rural areas and supply meat and eggs that constitute almost the only source of animal protein and source of income for most rural families (UBOS, 2016; Mavale, 2001). Compared to other livestock species, chickens are fast-growing and prolific and produce meat and eggs over a short time-span. In Mozambique, two thirds of the territory is infested with tsetse fly, which limits cattle farming, hence poultry production is vital (Mata et al., 2000). Native chickens face major challenges, namely: low productivity of meat and eggs low genetic potential, difficulty in accessing productive assets such as feeds and vaccines, as well as inadequate marketing and distribution systems (Kayitesi, 2015). In addition, market access and growth potential are constrained by low purchasing power of consumers, inadequate extension services, poor disease control, inadequate economies of scale and high transaction costs due to farmers being widespread.

Limited studies however exist on genetic improvement of native chickens (Mapiye et al., 2008), with hardly any effort recorded in Mozambique and Uganda. Limited work on phenotypic characterisation shows that there are three native chicken phenotypes: normal feathers, naked neck and frizzled feathers in Mozambique (Matola & Mabunda, 2003) and Uganda (Kyarisiima et al., 2004). Crossbreeds have high adaptability to the free-range system and improved production under semi-intensive conditions (Islam & Jabbar, 2005; Huque et al., 1999). This action seeks to improve performance of native chickens for body weight and egg production while maintaining adaptability to the free range system. This will be achieved through identifying and quantifying variation existing among the available ecotypes using phenotypic and genetic markers; and crossbreeding with a known elite line (Kuroiler). Use of genetic markers in screening elite chickens has been done in commercial poultry breeding in Korea (Sodhi et al., 2013), India (Rahim et al., 2017) and native chickens in Iran (Bahmanimehr, 2012).

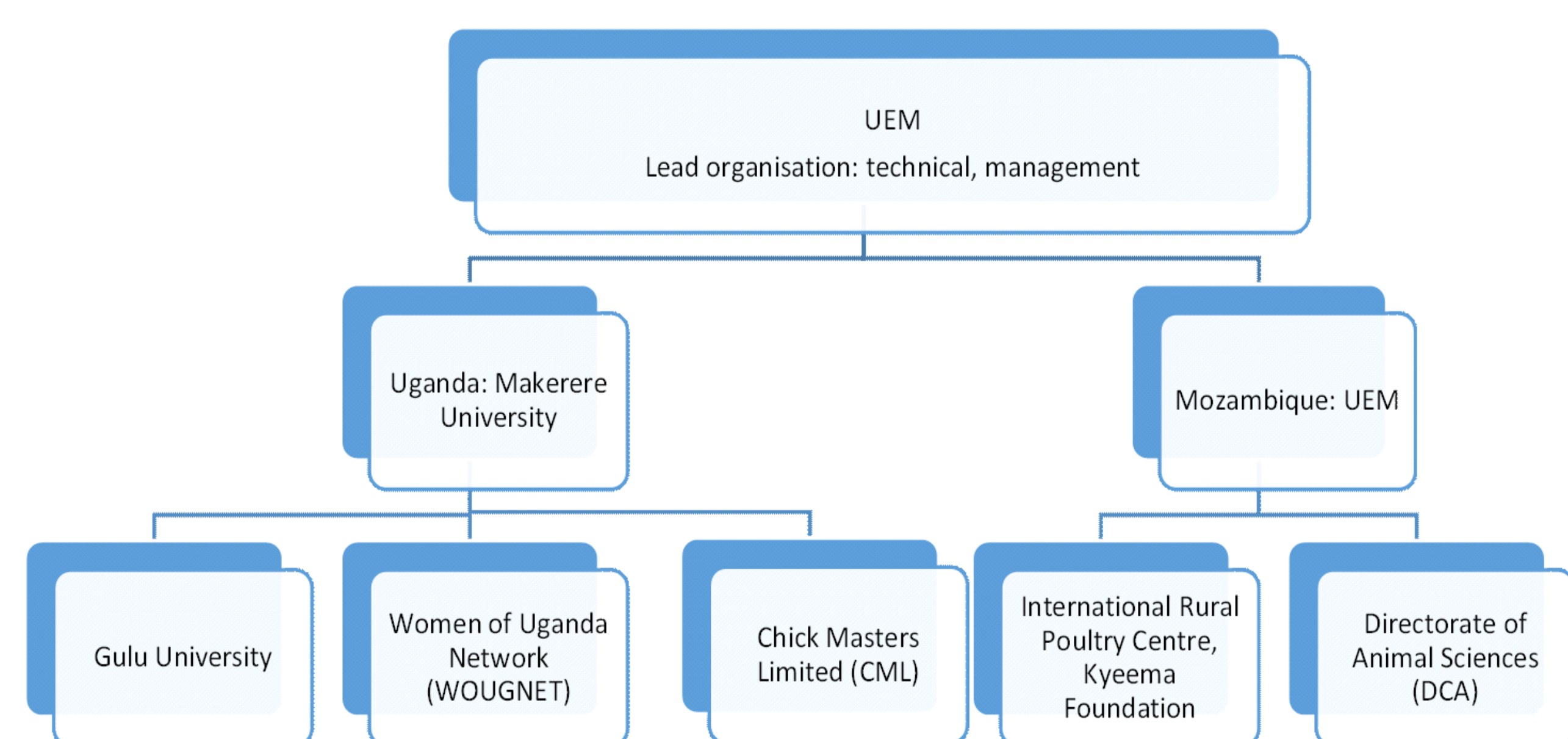
PROJECT OBJECTIVES

Overall: is to increase the quantity and quality of chicken products that will result in better income and nutrition for farmers in Mozambique and Uganda.

Specific Objectives:

1. Develop native chickens with high body weight, high egg production, broodiness and survival under extensive system in Mozambique and Uganda;
2. Assess the effectiveness of different technology delivery models for scaling up native and crossbreed chickens in Mozambique and Uganda.

ORGANIZATIONAL STRUCTURE



EXPECTED OUTPUT/ EXPECTED RESULTS

1. Develop native chickens with high body weight, high egg production, broodiness and survival under extensive system in Mozambique and Uganda; that will be used to design successful and sustainable delivery models for scaling up native chicken production in Mozambique and Uganda:

We will have established a team of national specialists in each country to work together on action-based research in order to achieve the following:

- Genetic composition of selected native chicken ecotypes in Mozambique and Uganda determined.
- Native chicken ecotypes with genes for fast growth and high egg production in Mozambique and Uganda identified
- Native chickens with high body weight, high egg production, broodiness and survival under extensive system developed in Mozambique and Uganda
- Diets based on scavenging feed resources evaluated
- Causes of mortality in native chickens identified and characterised: The teams will research causes of mortality in native chickens. They will also pilot surveillance of village chicken diseases and develop a disease database that will facilitate detection of trends of disease in future and provide a basis for focused research native chicken diseases.

2. Effectiveness of different technology delivery models for scaling up native and crossbreed chickens in Mozambique and Uganda assessed.

The action will evaluate three chicken technology delivery models for scaling up native and crossbreed chickens in Mozambique and Uganda, and validate at least one cost effective delivery model. At least 50 women and youth farmer groups, 20 mother units and 4 mini-hatcheries will be established in each region of each country. The behaviour and attitude of stakeholders in the chicken value chain will be documented and the number of native chicken characteristics preferred by farmers identified and documented.

This project will be implemented by a research consortium that brings together expertise in the sustainable production of improved native chickens (geneticists, poultry management experts, nutritionists, disease prevention and control personnel), in both Mozambique and Uganda, namely: Eduardo Mondlane University (Mozambique), in partnership with Gulu University and Makerere University (Uganda), together with WOUGNET, IRPC, IIAM and CML. The project partnership team, has competencies in business enterprise development and will seek technical support from RAE for engaging schools students.

ACTION LOCATION

§ Mozambique: South and Central regions (Maputo and Manica provinces)

§ Uganda: Northern and Eastern Regions

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Project duration: 3years
website: www.nativechicken.org

