



## Quality Declared Seeds Production Builds Resilience to Climate Change in Central Tanzania

Quality Declared Seeds (QDS) are an important strategic element of crop production and offer a way of successfully producing seeds in areas affected by unpredictable rainfall and ultimately providing food security to vulnerable households. Despite the existence of a well-defined seed system in Tanzania, limited access to appropriate improved seeds for a majority of smallholder farmers is a reason for low crop productivity in the semi-arid areas of central Tanzania.

To address this problem, the EcoACT project in central Tanzania, funded by the European Union, under the Global Climate Change Alliance Tanzania, has introduced the QDS Production Model. This local seed production model is a cost effective way to provide quality controlled seeds to smallholder farmers. It is not intended to compete or replace the existing schemes of seed quality control but rather offer an alternative and boost incomes for farmers producing the seeds and offer quality crops to consumers.

In the semi-arid zones of Central Tanzania, near the capital of Dodoma, low crop production is caused by low soil moisture, limited supply and use of improved seeds and low soil fertility. Access to improved seeds is singled out as a major limiting factor to crop production by the EcoACT project. Given that the majority of rural dwellers in this area derive their livelihood mainly through agriculture, the QDS Production Model was proposed as a sound strategy for addressing challenges on affordability and accessibility of improved seeds.



**“We want QDS producers to organise themselves to form specific groups that are able to monitor the quality of the seed production and foster sustainability for everyone in the community to benefit,” said Hoffu Sauli Mwakaje, Dodoma District Crop Officer.**



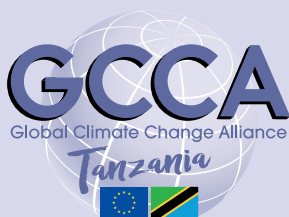
### Quality Declared Seeds as a cost effective alternative

The QDS model is targeting smallholder farmers in the villages of Kikombo and Idifu wards for Chamwino and Dodoma town districts respectively. This is a semi-arid region already marginally suitable for rainfed agriculture, and suffering from increasingly erratic rainfall patterns attributed to climate change. Despite the marginal conditions, pearl millet and sorghum are still the dominant crop in the area, with farmers predominantly depending on traditional

low-yielding seeds. Farmers are unable to afford commercial (hybrid) seeds so QDS offers an alternative.

Both the formal and informal seed systems in the project area are generally weak, making it difficult to get new varieties specifically for orphan crop such as pearl millet, sorghum and groundnuts among others. With the existing weak seed systems, seeds of these varieties may not be available for immediate use by smallholder farmers affected by adverse impact of climate change. Worse still, the gap for the use of improved certified seed cannot

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be solved by the current existing seed systems because there are few successful varieties available outside of the existing maize based commercial seed sector in Tanzania. For example, some of the improved seeds that cannot be accessed from seed companies and seed stockists include pearl millet varieties/bulrush millet and groundnut despite the fact that they were released long time ago. Therefore, improving the seed system and ensuring that high yielding resilient varieties are available to vulnerable smallholder farmers when needed is a key to unlocking productivity. This will require putting in place sustainable systems that not only ensure availability of seeds but also create demand that would trigger involvement of many smallholder farmers in addressing challenges of climate change. In a situation where seeds cannot be accessed from a known common sources concerted efforts for engaging Agricultural Research Institutes in the country mandated for specific cereal and legume crops is of paramount importance. Therefore, the introduction and popularization of the QDS Production Model is crucial since this will ensure that improved seeds, via this model, are multiplied and distributed to members of the community at a relatively cheap price and on time.

### Quality Declared Seeds production approach

The EcoACT Project has taken a number of steps to introduce this model to communities including carrying out a study of the current situation, creating awareness amongst farmers on the use of improved high quality seeds, creating specific seed producers groups in collaboration with local government and ward extension officers, training farmers on quality seed production, and registering seed producers with the Tanzania Official Seed Certification Institute (TOSCI). Experts from TOSCI are regularly invited to inspect fields.

After harvesting, a sample is normally taken to the TOSCI laboratory for a quality assessment. If seed producers meet all the standards stipulated under the seed regulations, a farmer is awarded

a certificate showing the lot number. The lot number is vital, since no one is allowed to sell seeds without an official lot number assigned by TOSCI. According to the procedures in the last cropping season 2015/16 a total of 34 Farmers were registered and among them 29 (19 Males: 10 Females) qualified, with a total of 5,050 kilogrammes of QDS produced.

### Quality Declared Seeds successes

The first QDS test results show that this production model is appropriate for a majority of farmers who cannot afford to purchase certified seeds. Ultimately, farmers are able to adhere to the seed regulations and successfully produce QDS seeds. So far, through the project, these seeds have been distributed to over 2,500 farmers, a majority of these farmers are female, which has led to improved household food security in the targeted communities.

The QDS technology also helps smallholder farmers who wish to buy improved seeds but have no access to improved certified seeds from any known source. It also allows farmers with improved QDS to trade with fellow farmers. For example, 1 kilogramme of QDS seeds can be exchanged for 2-3 kilogrammes of crop produce.

EcoACT has been able to network with national plant breeders and agronomists for the supply of foundation seeds to QDS producers such as sorghum, which cannot be accessed from seed companies.

However, there are challenges including the location of fields meant for seed production. Land scarcity may mean that farmers engaged in QDS production may not achieve the recommended isolation distance recommended. Due to this constraint, some farmers have not been able to get their seeds certified by TOSCI.

The EcoACT project has also noted that educating non-seed producers is very important. This will empower them to understand reasons for seed production in their jurisdiction. Non-seed producing farmers have to agree not to plant the same crop variety in their field surrounding the QDS seed plots.

### The way ahead

The introduction of the QDS Production Model in semi-arid areas like Dodoma region offers an alternative solution for a majority of smallholder farmers to produce sustainably in a situation where the formal and informal seed sector is unable to supply seeds. The QDS is now allowed to be sold at district level, which offers an opportunity for seed producers to expand their businesses beyond ward boundaries. The farmers' capacity to manage fields meant for seed production has improved remarkably, since they are able to adhere to the best agronomic practices required. QDS provide a way to improve resilience to climate change.



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