

International Climate Initiative

Climate Partnerships with the Private Sector: Mobile Tumble Dryer based on renewable energy sources for Tanzania

The Tanzanian government has initiated its own climate protection program in 2012 (National Climate Change Strategy Tanzania). As the agricultural sector in Tanzania accounts for a quarter of the overall GDP, with a pro rata employment of 82% of the total population, this sector is the focus of the country's climate protection targets.

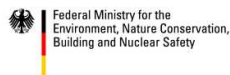
In Tanzania the harvest, as well as the post-harvest treatment, are often carried out manually or with outdated and partly failing methods. The most commonly used after-treatment is air drying. This often leads to decomposition and mold formation due to moisture. For this reason, 30-50% of the grain produced in Tanzania is unsuitable for food production. Tanzania is planning to reduce the current crop loss to reduce hunger. A key measure to increase output is the introduction of technologies for post-harvesting, such as storage and drying technology. The avoidance of the rotting-related loss has enormous potential for reducing import dependency. The introduction of mobile grain dryers will help to realize this potential.

Within the framework of the project which is financed by the International Climate Protection Initiative (IKI) of the Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety (BMUB), a mobile grain dryer demonstration plant with a fresh water flow of 2-4 t / h is to be delivered to Tanzania. The warm drying air is produced without the use of fossil fuels. As a fuel for heat generation, the local agricultural residues of the farmers are used. Alternatively, solar drying can be carried out with the aid of high-performance tube collectors. The electrical energy required for the mechanical drive is generated by a photovoltaic module. In addition to the use of renewable energy in the drying process, mobility is the focus. The grain dryer is designed to be transported on a trailer with a conventional car. After the project has been completed successfully, parts of the production and the installation of the plant can be moved on site in order to reduce the production costs and to build up local value chains.

In Tanzania, more than 4.6 million tonnes of CO₂ are emitted each year through decomposition processes resulting from air drying of grain. The planned mobile grain dryer would reduce the annual CO₂ emissions of Tanzania by around 13 tonnes at full load. To dry the entire annual production of grain, up to 8.8 million litres of fuel oil would have to be burnt. This corresponds to additional CO₂ emissions of approx. 23,000 tonnes, which could be saved by using renewable energies.

Country:	Tanzania
Implementation:	DEG - Deutsche Investitions- und Entwicklungsgesellschaft mbH, Cologne
Private sector partner:	NETZ Ingenieurbüro GmbH, RIELA Getreidetechnik Karl-Heinz Knoop e.K
Total project costs:	386,594 €
BMUB-funding:	193,297 €
Project duration:	06/2016 – 11/2018

Supported by:



based on a decision of the German Bundestag

INTERNATIONAL CLIMATE INITIATIVE (IKI)



KFW DEG