

Uganda – “Transfer of Banana tissue culture technology to small-scale farmers”, Agro-genetic Technologies Ltd. (AGT)

- **Objectives:** Commercialize agro-biotechnologies to increase yield, reduce spread of diseases and improve farmers' income.

- **Context:** Uganda is the second largest producer of bananas in the world. Around 75% of the Ugandans are involved in banana production. Currently, the country is producing over 8,6 million tones per annum, which is 30% of the world's production. However, an unprecedented disease (the banana bacterial wilt (BBW)) has been threatening banana culture for the past four years. The disease cannot be chemically controlled and methods to limit its spread are expensive. Where the disease affected a district, food production has dropped by 94%. Kawanda Agricultural Research Institute (KARI) being the only source of tissue cultured planting materials in Uganda, this has led to an insufficient supply and unavailability of quality planting material to farmers throughout the country. Agro-Genetic Technologies Ltd (AGT) thus conceptualized the idea of setting up a tissue culture laboratory due to the existing huge demand for high quality planting material.

- **Project Summary:** AGT conceived the idea of setting up a tissue culture (TC) laboratory to be operated on a commercial scale with the purpose of producing sufficient quality, high yielding, pest and disease free planting material to farmers. The laboratory mainly produces banana plants, but also produces planting material for other crop like coffee, pineapples, etc. The company's activity also involves the transfer of modern agricultural techniques and practices through organized training for farmers. AGT first established a laboratory (with a production capacity of 1 million plantlets) and related nurseries. It then worked on developing awareness of the new tissue culture technology among farmers, notably by creating partnerships with local and international NGOs and Government agricultural organizations. Once awareness among farmers increased, AGT then established distribution centers in farming communities, as a way to bring the technology closer to farmers (the laboratory itself is based in Kampala). Demonstration gardens were then set up to train farmers in modern agronomic practices. The company's success has been achieved thanks to the initiators experience and expertise, the partnerships it has developed with the Government, several NGOs and the Makerere University.

- **Impacts/Achievements:** In 2006, AGT opened the biggest tissue culture laboratory in Eastern and Central Africa, with a production capacity up to 8 million plantlets per annum. It is the only Ugandan company commercializing agro-biotechnology research to farmers. Furthermore, AGT has set up 15 banana nurseries and demonstration gardens for distribution purposes.

- **Main obstacles encountered:**

- The company initially had difficulty raising sufficient funds to fulfill objectives.
- Farmer's technology adversity was overcome by developing local radio adverts and improving communication with farmers and politicians.
- The company's lack of in-house crop indexing facilities make it difficult to meet demand from neighboring countries.

- The unavailability of essential laboratory material like chemicals and equipment on the local market has made the production costs high. AGT applies minimal margin to make the plantlets affordable for farmers.
 - The lack of local skilled human resources forced AGT to spend a lot of time and resources on training. The company has developed a partnership with Makerere University to train more people in tissue culture.
 - Other constraints involve insufficient power and water supply, lack of active support from the Government to promote new agricultural technologies (through guaranteed loans for example) as well as the lack of cooperation with other commercial TC laboratories in developed countries for the purpose of technology transfer.
- Scale:**
- AGT is the leading company in agro-biotechnology
 - It has set up the biggest laboratory in Eastern and Central Africa (production of 8 million plantlets per annum)
 - It has also established 15 banana nurseries and demonstration gardens.
- Training:** Farmers received training in modern agricultural techniques.
- Date of creation:** 2002
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