

1.2 Specific Project Ideas

1.2.1 Project Idea for Improved Crop Varieties Technology

This project predominantly aims at improving seeds and increasing seedlings varieties. Under-nutrition, that is an inadequate calorie and protein intake, has been a major concern of medical specialists, nutritionists, agriculturists, and demographers, both at local and international levels in the Sudan. One way of attenuating the problem of under-nutrition is the development and distribution of high yielding and well adapted seeds to farmers. The identification of project ideas is based on the priority needs, developed by the national stakeholders and the national team of TNA, as explained in the previous reports. Enhancing breeding of improved crop varieties (seeds and seedlings) is expected to take place in six states of the country; particularly in rain-fed areas targeting small scale farmers. Selection of the target groups and areas relied more on individual meetings with concerned parties, namely the Ministry of Agriculture and Farmers Unions in the different states.

Production of improved seeds and seedlings will increase the productivity of major crops, thus contributing to the increase of farmers' incomes. The general result of this project will guarantee food security and diversification of nutrition through producing different crop types which leads to sustainable livelihood in the project areas.

The number of beneficiary states will be six: (1) Gadarif (2) Sennar (3) North Kordofan (4) North Darfur (5) White Nile and (6) Blue Nile. The selection criteria for the project included low level of development interventions (marginalized areas) by the national government and other donors; suitability to traditional rain fed farming; vulnerability to climate change and variability (acute poverty and lack of food security) of farmers in these areas. Similarly, six localities (one from each state) will be targeted for project implementation. The project will focus on organized farmers groups at village level and a total of at least 50 farmers will benefit in each locality.

The selection of the localities will be based on the following criteria:

- Relative size of rural households involved in traditional rain-fed agriculture.
- Locality free of natural resource-based conflict and with conducive work environment.
- Willingness of the community to accept development interventions of the project.
- Willingness and readiness of the community to form farmer groups and mobilize women.
- Potential for productivity increase; and availability of Ministry of Agriculture and Farmers Union staff to facilitate project interventions.

The strategy of the project will base on the establishment of a demonstration farm at each locality for sake of dissemination of information in the six states. This method is selected because it offers the chance for demonstration of methods of raising seedlings using nursery techniques. Sixteen nurseries are proposed to be established at the different localities relying on simple materials in order to guarantee the sustainability of the activity.

1.2.2 Project Idea for Zero Tillage Technology

Research results in the country showed that zero-tillage technology resulted in significant increase in sorghum production (from about 700 kg/ha to 1,650 kg/ha). Research findings also indicate that zero tillage is promising and recommended particularly in mechanized rain-fed agriculture, which is sensitive to climate change and constitutes 35% of the national cultivated land. With the current and future climate change vulnerabilities, the adoption of the technology is expected to increase resilience of vulnerable communities and consequently enhance their adaptation.

The Introduction of zero tillage technology in different parts of the country and its testing with different crop species remain one of the challenges that require careful consideration. However, the findings