

## Rice cultivation in Africa <Part 2>

### Lessons learned in the Development Study on National Irrigation Master Plan in Tanzania

The Tanzanian government requested Japan to assist with the formulation of National Irrigation Master Plan, preparation of action plans, as well as verification studies on urgent actions, with an aim to develop effective irrigation development and planning in the country. The study was conducted for three years since 2001.

Due to the rapid rise in the population and an increase in rice consumption, from the viewpoint of food security, the increase in steady rice production is one of the most important challenges facing Tanzania. To achieve the objective of increased production, irrigation development at the national level is vital. The reality of the government is that it does not only lack financial resources, but also has insufficient government organizational and staff capacities. It is not yet in a situation to be able to perform effective irrigation development. Overall, there are two major issues with regards to types and promotion methods of irrigation development in a country-specific manner. One is the establishment of appropriate irrigation development scale and levels. The other issue is to establish implementation frameworks and organizations for realistic irrigation development. In addition, as it is difficult to expect sufficient financial and technical inputs from the central government, it was considered to be more appropriate to choose an implementation system whereby local governments become the promoters of the irrigation development with the full participation of the farmers themselves. Given this, it was deemed appropriate to focus on development of small scale irrigation systems based on traditional irrigation methods. They would be modernized where possible, using modern technologies, under appropriate development levels. For this, it was seen as important to produce manuals for irrigation techniques, which fit with small scale irrigation system and non-high-tech development levels. As for the implementation frameworks and organizations, it was suggested to promote irrigation development at the prefecture level based on direct participation by farmers. Through verification studies, the feasibility of this type of system was confirmed and necessary guidelines were prepared.

During the verification study stage, feasibility studies were conducted at potential priority areas for irrigation development, which were selected based on rapid field trips. For the priority areas that were confirmed as having high potential, we aimed to establish a system for prefectural technicians to integrate the irrigation development in the prefectural development plan and implement it. Throughout these activities, we continued to improve the manuals and guidelines, by using them in

our actual field works. We found unexpectedly large number of issues arose when it came to the actual use by technicians on the ground. For example, the manual describes how to measure the inflow to know the water resource amount that can be supplied to the target sites. However we realized we needed to also include how often one should measure the inflow, when there are large annual fluctuations. Similarly, where there are prominent seasonal changes, it was found to be necessary to describe possible ranges of average rice yields and selling prices in target areas rather than provide exact expected figures. Moreover, we were obliged to improve the manuals so that users can automatically read crop water requirement and internal rates of return from a table as opposed to having to calculate them. Many technicians expressed strong interest in the usefulness of processes such as the simulation of irrigation areas by simple measurement using GPS. This has been used as a tool for irrigation development in the country to date, contributing to efficient irrigation development.

In the National Rice Development Strategy for Tanzania formulated last year with guidance from the CARD (Coalition for African Rice Development), the establishment of irrigation facilities is stated as being one of the main pillars for rice production enhancement. Similarly, improvement of irrigation and water harvesting techniques are two more of the fundamental strategies. Furthermore, increased rice production through the irrigation schemes in selected areas is one of the short-term strategies. Spatial distribution of areas with different irrigation potential and irrigation facility development plans, which were developed as part of the Master Plan Study, were utilized in the strategy paper, forming the foundation for the irrigated rice field development plan. Tanzania's irrigation development is a typical plan in Africa. This Master Plan Study has taught us about the fact that there is a form of development which is different from that in developed countries and in countries which have already developed an extensive irrigation network.



Prefectural government staff  
conducting field survey following the guidelines