

## *Case Study of the Use of GIS by AAI*

### **Part 6 – GIS Use in Future Technical Cooperation**

As indicated in the previous case studies in this series, AAI has been utilising the GIS in various technical cooperation activities in fields such as agriculture and rural development. Through our work, we learned the effectiveness of the GIS as well as a number of important points for consideration when using the GIS. As this is the last part of the series, we would like to reflect on how we can utilise the precious experiences in our future activities.

As we described in each case study, we made an effective use of the GIS by developing maps such as a land use map and irrigation potential map, by presenting many kinds of information on maps, and by using the GIS to select priority areas based on various conditions. These are examples of making direct use of GIS as a tool in technical cooperation activities, and many more effective uses can be envisaged. At the same time, we faced many problems when using GIS in developing countries. We feel that these lessons learned can be used positively in future activities.

For example, as indicated in the case study from Syria, in many developing countries, the information to be developed on maps is often inaccurate or incomplete. Therefore, in order to promote effective utilization of GIS, an information management system is essential to effectively manage information gathering and management at the central level. Paradoxically speaking, introduction of GIS leads to reinforcement of such an information management system. In practice, in our verification investigation work for development of the National Irrigation Master Plan of the Tanzanian Government, we suggested that information obtained at regional offices be managed by the newly established department at the central government, which produces map outputs. In this way, the more accurate information regional offices supply, the more useful geographical information they can obtain for improved understanding of their regions. This motivates regional offices to strive to gather accurate information for better quality maps. This in turn is an advantage for introducing the GIS in developing countries.

Furthermore, we have been stressing the importance of keeping the distance between information gathering and map output as short as possible, in order to raise accuracy rates of geographical information outputs and to ensure their effective utilization. In the case study from Oman, we learned that it is essential for those who collect information to conduct a thorough verification of GIS outputs. Without such steady verification work, it is impossible to sustain the accuracy of geographical information. The case study from Tanzania indicated that output maps need to clearly show their purposes. For example, by showing statistical data on maps, one can utilize such maps to grasp general tendencies and to consider the direction of development projects and their activity indicators. These GIS maps can offer extremely effective ingredients to be used for briefings to government officials, as one can describe individually collected information within the context of a bigger picture for easier understanding. However, in Tanzania, we found out that the same information as it was, had little use for farmers. This teaches us all concerned to seriously examine who are the recipients of particular geographical information and how they intend to use it, to ensure effective use of GIS characteristics as tools. Such considerations are additional advantages to introduce GIS in developing countries.

In future technical cooperation activities, a wide range of use of GIS is envisaged. What must not be forgotten here, as we stressed throughout this series, is that apparently impressive map outputs cannot be generated without tireless efforts to collect information and accurate information supplies from the field. Moreover, we mentioned in this series that GIS software is not something any one can operate easily. However, we also mentioned that it is difficult to take full advantage of GIS potential, if operation is entirely left to GIS technicians. GIS is a tool to extract usable data from multiple sets of information, establish their links, and to express them in GIS outputs. To decide on expression methods, the opinions of information collectors and users should be reflected rather than relying solely on GIS technicians. For this to happen, people in the field and on the frontline of activities could have an attitude of actively using GIS for their small analysis, or there could be a system enabling the opinions of users to reach GIS technicians. Generating a GIS output should not be the end of the process. It is important to constantly evolve the output according to progress made in information collection so that the product will become closer to the needs of the ultimate beneficiaries. In other words, if a process of active discussion and debate is activated, involving stakeholders such as project implementers and local residents, about GIS outputs, it can be said to be the cause of a major rippling effect of GIS introduction. Bearing these issues in mind, we hope to continue to use GIS effectively in our activities.