

## Performance Measurement of FMIS

FMIS have become an important element in assistance programs with large sums being invested in them and they are already an important element in the agricultural sectors of many countries. As it is well-known that many FMIS do not perform as well as they can, there is a need to identify the areas in which they fall short of their potential. It is therefore, important to measure and evaluate their success or failure objectively.

This will enable a farmer-managed irrigation system to seek solutions which will improve its performance. Furthermore, a comparison of the level of performance among FMIS as well as with systems operated by irrigation agencies will permit the identification of specific areas in need of improvement and will facilitate decisions concerning the types of investment to be made. Objectives may differ from system to system. In a large agency-managed system the objectives may be defined mainly in terms of water management with emphasis primarily on cost and

system efficiency. A farmer-managed irrigation system may view its own objectives more in terms of equity, security or conflict resolution, as well as in effective utilization of its water resources. On the other hand, a donor may be concerned more with food security or alleviation of poverty.

If the objectives are not being achieved, corrective measures may be taken to improve the level of achievement, or funds invested in such systems might be better diverted to other uses which contribute more to their achievement. But the need for corrective measures or alternative actions cannot be recognized and identified, unless performance is measured. There is a growing body of knowledge on the performance and evaluation of irrigation systems in general, and there is much that can be learned from them. In this context, FMIS may be perceived as an integral component of the whole irrigation sector rather than as unique or esoteric systems.

It is likely however, that fresh and innovative approaches may become necessary to deal with any special problems associated with FMIS in particular.

Irrigation performance may be defined as the degree to which an irrigation system achieves its objectives. One must however, distinguish between objectives related to system "outputs" and "impacts" on the one hand and those intermediate "process" or "management" objectives which relate to the internal process of the irrigation system on the other. Output and impact objectives for any system are likely to be aimed at measuring the results. Output objectives are aimed at measuring the results which are directly related to the irrigation systems such as meeting crop water requirements for a particular cropping pattern, minimizing differences in supply to different parts of the system and initiating and ending irrigation service in a way that is considered timely. Impact objectives are aimed at measuring the more indirect and long-term results of the irrigation system such as effects on the farming system and are typically framed in terms of achieving certain levels of agricultural production, land productivity, farmer incomes, and sustainability aspects including reduction in sedimentation and salinization rate.

The "process" or "management" objectives are those employed by the managers of an individual system in order to meet the policy directions which are usually passed over to them by a higher authority such as a Farmers Assembly, a Ministry or a Board of Directors. These objectives also include all management decisions made by farmers themselves such as irrigation planning, flow regulation, rotation, labor mobilization,

seasonal planning, and crop diversification.

Structures in FMIS are often simple and even rustic, preventing anything approaching the precise measurement possible in structures designed by engineers in more sophisticated systems. However, water measurement may not be the prime need in some systems. Ease of operation or maintenance may be a more compelling feature of FMIS structure depending on the ecology and the human resources. FMIS do not often employ the manpower in the numbers or quality necessary for data collection and processing. Should there be some performance indicators specifically for FMIS which are different from those for agency-managed systems? However, the performance indicators should be linked to the objectives of a particular system and they should be of interest to a wide variety of users, national irrigation agencies, international development agencies, donors, and last, but not least, the farmers. How can we promote the use of whatever performance indicators we believe to be meaningful and useful among farmers and others?

Please let us know if you are involved in research activity on performance, or, if you know of anyone who is involved in this topic, the name of such person/s or institute/s, or, if you are planning to develop work along this line and wish to collaborate with us. In the next issue of the Newsletter, we shall share with you all the information that we shall get on the work that is going on and that is under planning. We may establish a small network on performance.

FMIS Network Coordinator