

The Digital Age: Advances in Water Management

As the Greek historian Heroditus noted in his travel chronicles of the 5th century, Egypt is literally *the gift of the Nile*. All agrarian activity depended upon the river's behavior and the regularity of its annual inundation. In his time, Egyptians found the notion that farmers elsewhere were willing to rely on rain-fed agriculture as absurd. Down through the years, great efforts were made to monitor the levels of the river and to manage water resources as predictably and efficiently as possible. Livelihoods depended upon it.



In recent times, the Aswan Dam, combined with other structures throughout the system, enabled the Ministry of Water Resources and Irrigation (MWRI) to control not only flooding, but also distribution.

Today another chapter in this process of advancing water management to increase yields and correspondingly farmer's profits is underway. The MWRI through the USAID funded LIFE-Integrated Water Resource Management Project is now providing twenty-seven Integrated Water Resources Management (IWRM) District offices with new procedures and tools to better

- monitor actual allocations and
- analyze water demand based on actual cropping calendars.

The ability of District Managers to make decisions based upon the collection and analysis of actual cropping data is now possible through project support for Matching Irrigation Supply and Demand (MISD). As part of MISD activities IWRM district staff collect crop information in collaboration with the Ministry of Agriculture & Land Reclamation (MALR). The MISD databases they develop are then used to translate crop data into water requirements and finally water demand for a given canal.

Simultaneously, the monitoring of actual water supplies, using either current-meters to monitor canal discharges, or sensors coupled with the operating hours of pump stations enables District Managers to match more accurately than ever before the actual supply with crop need or demand for water at differing times in the growing cycle, in turn improving yields.



Success has already been reported. Data gathered through MISD and flow monitoring activities in Aswan directorate demonstrated that some pump stations were providing more water than needed causing excess water to flow into the drains, most frequently at night. As a result, IWMD managers and their General Directors decided to increase control of the operating hours of all pump stations. Their actions, based upon the MISD findings, have already achieved a reduced rate of pumping during the night at 13 pump stations in both the Aswan and Wadi El Nogra IWMDs.

