The Texas A & M University System

Texas Cooperative Extension

Development of the Rapid Assessment Tool (RAT) for Evaluating Irrigation Network Performances

Facing the Challenges – Developing Innovative Solutions

Rapid Assessment Tool (RAT) for Diagnosing Problems and Developing Priorities in Irrigation Districts

The RAT

A screening tool that combines condition surveys, GIS mapping and limited direct measurements to provide a cost effective analysis of irrigation network operations. Capabilities when fully developed will include:

- Hydraulic condition rating
- Estimate losses due to seepage and spills
- Analysis of the adequacy of water supply to users
- Aid determination of priority rehab. Projects based on potential water savings.
- Linkage to databases
- Display results using Geographic Information System (GIS)

Some Challenges facing Irrigation Districts

- Deteriorating and ageing infrastructure
- Rapidly increasing Municipal and Industrial (M&I) demand
- How to identify and minimize water losses
- Need to consistently maintain quality service to all users
- How to evaluate system performance in order to decide best investment and management priorities

Lined Canal Condition Rating

Typical Rating Scale: Grades on lined canals:
1 - sparse
2 - moderate
3 - dense
4 - very dense

RAT Estimate vs Measured Seepage

Overall Condition and Erosion Rating using RAT

The Future

Work continues on the development of the RAT products. When fully developed the RAT will be used to exploit the significant opportunities for improving water resource management in irrigation districts. As irrigation systems are spatially located, Geographic Information Systems (GIS) is highly suitable as an innovative tool in irrigation systems planning and management.