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Developing A Hydroinformatics System For Water Smart Management of An Irrigation District

Mahmood A Khan, Md Zahidul Islam,
Muhammad Nadeem Asghar, Mohsin Hafeez

International Centre of Water for Food Security,
Charles Sturt University, Australia

Proposed Hydroinformatics System

- A hydroinformatics system deals with the application of information and communication technologies in addressing the increasingly serious problems of the equitable and efficient use of water for many different purposes.

- We present the conceptual model of a hydroinformatics system, which is developed to help monitor, evaluate and improve the management of data.

- Features of conceptual model include a web based interface, GIS interface, GIS-based databases and hydrological modelling tools.

Proposed Hydroinformatics System

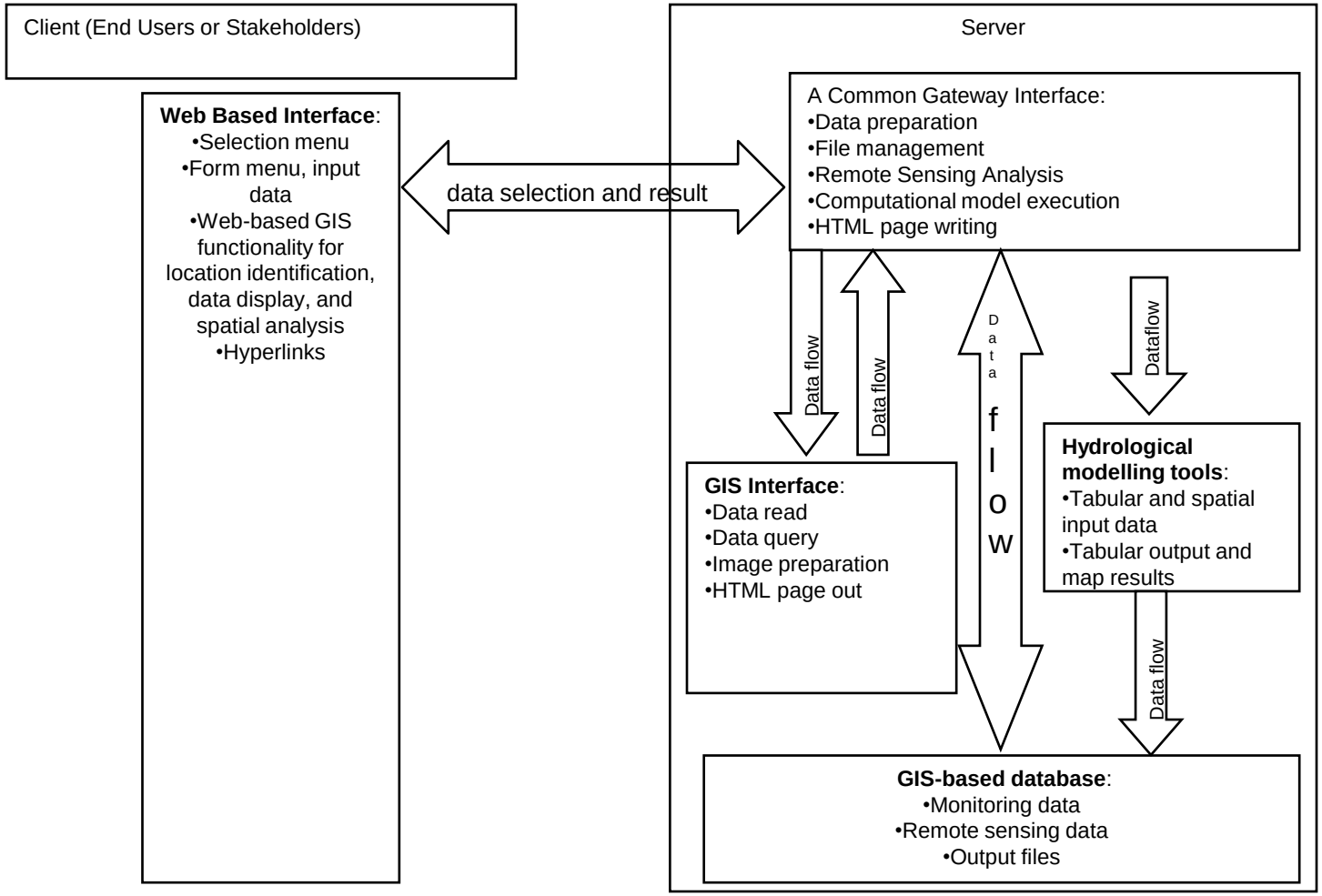

Figure 1. Schematic diagram of a hydroinformatics system for an irrigation district.

Components of the Proposed System

- GIS Database links raw data and hydrological models.
- The web based interface provides the stakeholder necessary information to take better decision for smart water management.
- Hydrological models are used for better hydrologic processes understanding and thus making predictions.
- GIS interface displays a graphical representation of the GIS data obtained from the GIS Database.

Use of the Proposed Hydroinformatics System in Coleambally Water Smart Australia Project

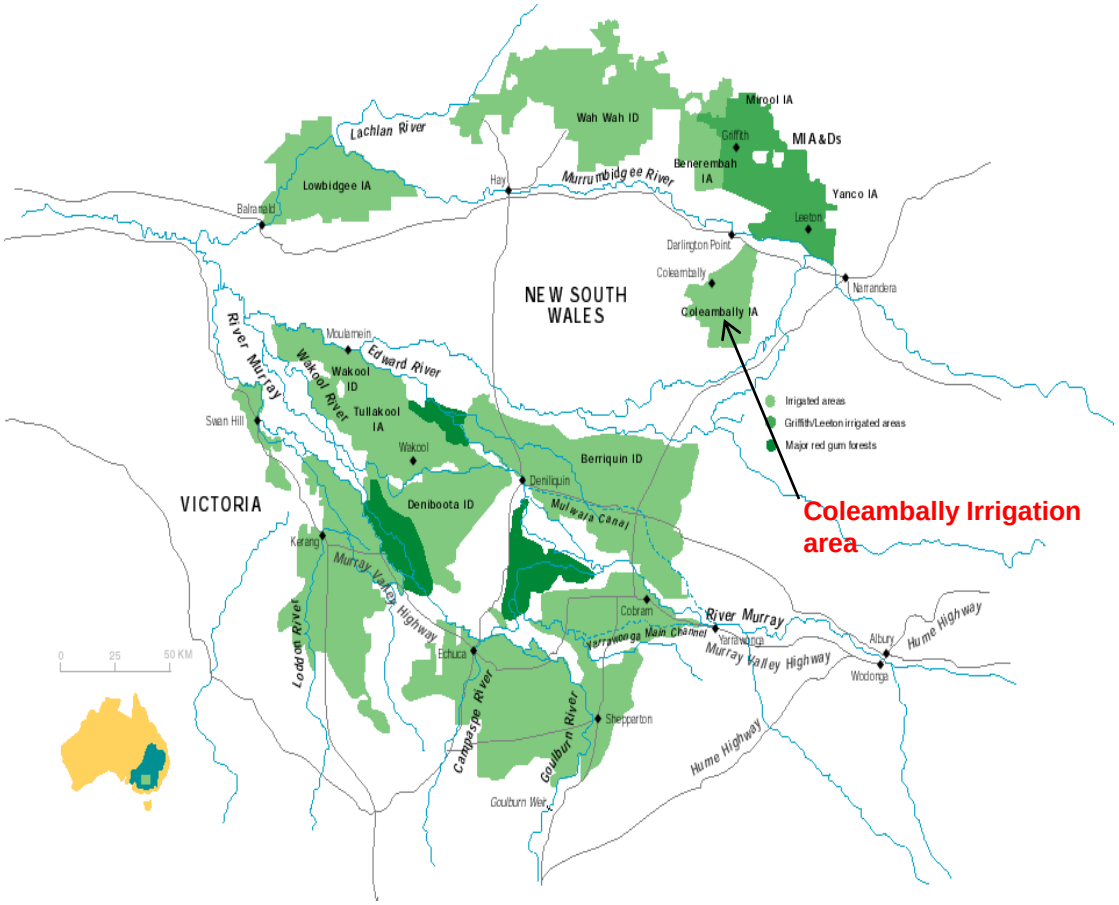

Figure 2.Coleambally Irrigation Area Location Map

Huge data are being collected from coleambally irrigation area through:

- ➢2 Flux Towers
- ✓2 Weather Stations
- ✓2 Scentillometers
- ✓800 Piezometers
- ✓Flume gates
- ✓Remote Sensing data (MODIS, Landsat)
- ✓Regular Ground truthing

Conclusion

- For better management of the huge amount of data collected from various sources, we need a computerised hydroinformatics system.

- The Proposed System helps the irrigation managers and the stakeholders in the following ways

  - Provide a user friendly data entry and editing environment.

  - Provide easy knowledge extractions from huge data sets.

  - GIS Processes tailored towards hydrologic modeling needs.

  - Automate data communication during pre processing and post processing stages.

  - Facilitate decision making for the stakeholders.