

Water Resources Modelling in Integrated Water Resources Management

Documentation and Quality Assurance for Modelling Work

A Stuck (10 mins)



“Rubbish in Rubbish out”

- Models are important tools in water resources planning, but are only used by a few specialists
- It is the duty of the specialists to ensure that their modelling work is “**fit for purpose**”, so that others may use their results with confidence
- How to achieve this confidence in results?
Quality Assurance (QA) and Quality Control (QC) are important tools to help



Quality Assurance – what is it?

- QA is a systematic process recording how the **quality** of the final output to your client will be **guaranteed** (assured)



- The QA system can be as complicated or as simple as you want – what matters is that it works for you and helps you to deliver a high standard of results



When should QA apply?

- QA should be considered at the very start of any modelling study
- QA should be applied rigorously throughout the study and to all aspects of the work and reporting



What should be covered by the system?

- Recording receipt of documents and data
- File locations (filing system)
- File naming conventions
- Procedures for checking each type of incoming data
- Procedures for checking model build and calibration (including data files)
- Procedures for backing-up models and data files



What should be covered by the system?

- Procedures for recording assumptions for each model run and each scenario
- Procedures for checking model output
- Procedures for checking post-processing of results for reporting
- Procedures for checking content of any reporting



Managing data, documenting model run parameters and storing run results

- Models like WEAP and MIKEBasin provide an integral management system for storing and editing data files, run parameters, and results – this is of great assistance in maintaining project QA
- Such models also link to data management tools like GIS/database
- BUT strong QA processes are still needed to ensure that activities outside the model environment are well controlled



Role of the modelling team leader

- Responsible for the delivery of the model to the ‘client’ (water resources planners)
 - Model is “fit for purpose” (ie what the client wants/needs for decision making)
 - Strengths **and weaknesses** of the modelling work understood by the client
 - Model is fully documented so that others can see assumptions



Role of the modelling team leader

- Responsible for developing QA/QC procedures to be followed by the team
 - Written procedures are required
- Responsible for making sure that all team members know and follow these procedures
- Responsible for final peer review of model build and calibration (key activities for confidence in final results)

