Objective 3

> Develop a decision support tool to assist in the planning of land use changes and the targeting of irrigation related policy initiatives.

Methods

- Data of measured soil properties of 34 soil types in the SIR were analysed. Statistical parameters such as mean, standard deviation, and 25, 50 and 75 percentile values of measured data were calculated for each soil group and each soil type. (Attachment 1: Chapters 6, 7, 8 and 9)

- Soil hydraulic properties were assembled in the form of look-up tables, arranged by soil properties as well as by soil types and soil groups. Values of mean, median and variability measures were included. (Attachment 2)

Results

- Soil properties of the SIR are presented in look-up tables. These include information on saturated hydraulic conductivity, final infiltration rate, soil water capacities, soil texture, bulk density, organic matter content, soil EC, soil pH, and soil exchangeable cations. (Attachment 2).

- The look-up tables of soil hydraulic properties can be linked to the existing digital soil maps in GIS.

Conclusions

- A database of soil hydraulic properties of SIR has been developed. The database is in the form of look-up tables, arranged by soil properties as well as by soil types and soil groups. Values of mean, median and variability measures are given. A draft booklet containing all the look-up tables has been prepared as an attachment to this report (Attachment 2). It is planned that the booklet will be finalised after consultation with its potential users about format and then published as a reference. It is also planned that the database will be directly linked with the digital soil maps through GIS.

- The database adds significant value to the existing soil maps and will assist in land use planning, irrigation design, water management and irrigation related policy initiatives. In addition, soil hydraulic properties will provide a knowledge link between irrigation management and impact on water table and salinity, and between farm and catchment management. However, a framework is needed

for the application of soil hydraulic property information so that irrigation systems and enterprises can be better matched with soils to achieve both farm and catchment outcomes. The development of such a framework should be the focus of future work on practical applications of the data collected in this project.