C-04 : A STRUCTURED COMPUTERIZED APPROACH FOR AGRICULTURAL RESEARCH DATA ANALYSIS USING RELATIONAL DATABASE TECHNOLOGY

S K Weerasinghe, N Dharmawardena, W A Gray**; Sugarcane Research Institute, Uda Walawe, *Sugarcane Research Institute, Battaramulla, **Dept. of Computer Sci., University of Wales College, Cardiff.*

This paper describes the design of a structured methodology to store, maintain and statistically analyse data collected in sugarcane research. It also explains the implementation of the designed system using microcomputers and standard software packages affordable to smaller research organizations. The broad aim of this system

is to assist researchers and senior managers to quickly view and analyse appropriate data as and when required. This system can also be used to query data through a user-friendly interface which is developed for this purpose.

The relevance of structured systems analysis methodologies to systems development is discussed. The inappropriateness of two well-known methodologies. SSADM (Structured Systems Analysis and Design Methodology) and JSD (Jackson's System Development) to a small project like this, which is typically developed by a single person during a limited period of time for an unstructured environment is discussed. Computerized data analysis systems used in similar areas are also reviewed.

The advantage of a relational database management system (RDBMS) in developing information systems are discussed. The database for the system is created as a relational system by an in depth analysis of the functions of the SRI.

A prototype part of the system was implemented on an IBM PC compatiblemachine using three software packages, namely dBASE IV to 'implement the database functions; 'SAS for statistical data analysis and LOTUS 123 for graphical representation of data and for some of the statistical analyses. Each of these packages has a good range of facilities for its discipline. In addition, they have their own programming languages and facilities to communicate with each other.