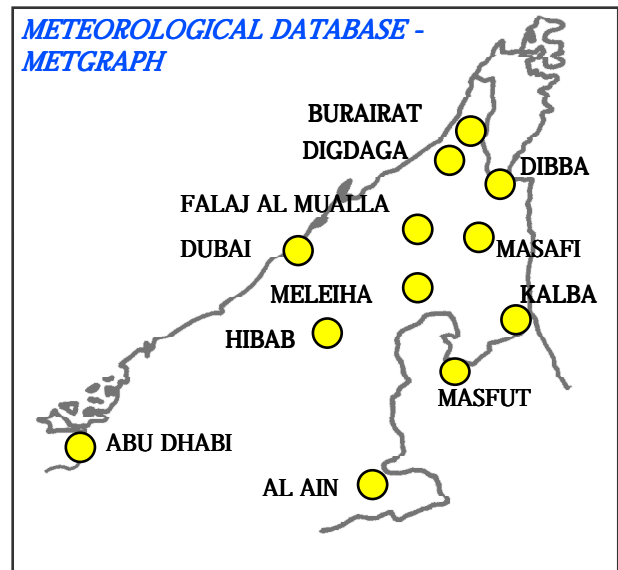# Mini Series: AAI's Database Management (2)

Part 2: Management of numerical data in table format from BASIC and Excel to File Maker

In this article we would like to discuss how AAI has been dealing with numerical data such as meteorological data and statistics related to agricultural production and visual data such as photographs. Today it is common practice to use ready-made software programmes, but when the so-called PC first appeared, programming languages such as Fortran and BASIC occupied the mainstream of computer data processing. One example of earlier database management programming at AAI is data processing using BASIC for meteorological observation data gathered in UAE. With this programme data such as temperature, moisture, evaporation, rainfall, wind speed etc. obtained from over 10 observation stations in UAE can be entered and linked to a simple map, and by typing in certain information gathered at the field or observation site the necessary data can be extracted in figures or made into a graph. This kind of programming

Starting screen of MET GRAPH (Excel)

language was later replaced by so-called statistical software, such as Lotus 1-2-3 and Excel, which made it far easier to enter data, add data, correct data and create graphs. Macro is used for data processing.

In developing countries, statistic data related to agricultural production are often shown simply in the form of a table or data book, but if complicate figures can be transformed into graphs or processed statistically the data can be not only displayed but also effectively utilized. Therefore, it may be interesting for our counterparts in developing countries to actually see how uninteresting accumulations of figures can be processed into colourful, simple and understandable graphs. For this purpose simple macro is good enough. What is important in any case is how the obtained graphs and results of statistical processing and calculation should be interpreted and fed into the next step (i.e. modification of the plan, policy-making etc.). Needless to say, the accuracy of raw data is also crucial.

The later debut of File Maker was rather shocking for those of us who at AAI had been processing data with our own programmes and macro such as BASIC and Excel as discussed above. Excel is probably good enough (or better) for dealing with a large amount of numerical data only, but File Maker has various advantages. One advantage is that it enables us to easily process not just figures but also images (photos) at the same time. This enables us to conduct various stages of data processing without having to create our own programme (though File Maker has a programming function called Script). Another advantage is that we can freely change the layout of output.At first AAI was using File Maker to process text and numerical data for managing its address book, reference database and business schedules etc. Later on, based on the earlier experience with File Maker and by improvising on its concept and functions, we created card-format databases for dry-land plants with photos (database of arid plants) and the Tanedasu (a seed database).

One of our complete card-format databases is "Plants in UAE" which was introduced in AAINews Vol.10. Since then "Plants in UAE" has been further improved and refined as a database of some 200 plant species found in UAE. Data on each plant including name, photos (whole, flower, habitat), characteristics (shape, habitat environment, resistance to salt and dehydration etc.), and use, are recorded and data search is possible from any entry field. In addition, the database also contains maps of different habitat types such as sand desert, mountain and coastal regions, and it is possible to conduct a search of plants by habitat while looking at the map. Data are still lacking for some plant species, so we are going to do further research and study so as to complete the information in the database.