Experience of Developing an Expert System Programme in China
Tim Barker

In 1990 the Southwest Agricultural University, China approached the Voluntary Service Overseas (VSO) with a request for a “Computer Scientist to develop Expert Systems (ES) for agricultural application and decision support systems for agricultural economics and University management”. Other work would involve teaching postgraduates in Software Engineering and Artificial Intelligence (AI). The university draws its students from the South-Western provinces of Sichuan, Yunnan, Guangxi and Tibet and is administered by the Ministry of Agriculture in Beijing. The principal hardware platform for development would be a Japanese manufactured FACOM M-340S, equivalent to an IBM43 series mainframe, which was purchased by the University in 1988 at a cost of US$0.75 Million. PCs and Turbo PROLOG were also available for use for teaching purposes.

The author secured the post in 1991 after completing a masters degree in Man-Computer Systems at De Montfort University in the UK. A month was spent to design a course in constructing ES including a general introduction to AI, logic and data structures plus more detailed notes on programming in PROLOG. It soon became obvious that the FACOM was inappropriate for the course due to a lack of supporting software so it was decided to write PROLOG courseware for the PCs. A student-centred approach was adopted for the teaching with equal emphasis on practical ‘hands-on’ sessions and associated theory. English was used as the language for teaching. Students had better abilities in reading English and benefited from the written notes.

After the class sessions work began on designing an Expert System for Plant Taxonomy which would, with adequate documentation, serve as a guide to the ES life cycle. A Botanist was interviewed then the subsequent system developed in Turbo PROLOG to run on PCs. The system was to be used by Botany students in a Computer-Aided Learning (CAL) context so adequate explanation of inferences was important as was an intuitive user interface. The resulting ES is best described as a hybrid rule-based system.

VSO support was more than adequate. The author believes that he was successful, as the students developed their own ideas of appropriate ES.

1 The author can now be reached at tim@timbarker.org.