GIS in Malaysia

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INTRODUCTION

During an exploratory visit to Jabatan Geografi of Universiti Malaya in Kuala Lumpur, Malaysia during the summer of 1991 I observed a growing trend towards the uptake of GIS technology in Malaysia with several distinct, if somewhat, disparate, developments already in place.

PRESENT GIS IMPLEMENTATIONS

In Malaysia, GIS developments are largely orientated towards the management of natural resources through Land (and property) Information Systems (LIS) and Environmental Information Systems (EIS). A number of factors are encouraging the uptake of GIS technology. The main impetus has been the Malaysian Government's plans, dating from the mid 1980s, for establishment of a national Land Data Bank. This led the Standards and Industrial Research Institute of Malaysia (SIRIM) to publish a provisional standard, namely the Code of Practice for the Exchange of Digital Feature Coded Mapping Data, in 1987. The Department of Survey and Mapping is already producing maps with its SysScan-supplied Computer Assisted Mapping System (CAMS). The Ministry of Land and Regional Development has engaged consultants from Sweden to further the Government's plans towards establishing Federal and Land Information Systems and the State Governments of Johore and Pahang have recently procured SysScan and Intergraph systems respectively for their LIS. Malaysia does not have a national policy with respect to GIS procurement and the other State Governments are expected to make independent decisions with respect to procurement. The Departments of Agriculture and Forestry have also adopted GIS technology with assistance from the Canadian International Development Agency (CIDA). The Department of Statistics is seeking to computerise its mapping of geodemographic data and a number of other initiatives and trials are being piloted within local government and the utilities. These projects have been kick-started into motion with the help of system vendors and/or foreign consultants backed by foreign aid.

In September 1990, the Malaysian Government hosted "The International Expert Group Meeting on Regional Planning in the 1990s: using and managing Geographic Information'; this was jointly organised by the Government and the United Nations Centre for Regional Development (UNCRD). The papers presented by Malaysians at this Conference indicate the current thinking and progress to date (UNCRD is thought to be due to publish the Proceedings). The Malaysian Centre for Remote Sensing was also established by the Ministry of Science and Technology in 1990 and I was informed that the Government has agreed in principle to the setting up of a similar national Centre for GIS. The daily newspapers indicate a mounting interest in environmental issues and there is now a mandatory requirement for Environmental Impact Assessment of all proposals for development. The Malaysian Institute for Public Administration (responsible for the continuing in-service training of civil servants) organised a Workshop in 1990 on Public Decision Support Systems run by Professor Ian Masser of Sheffield University, UK; this workshop was much appreciated by planners I talked to.

FUTURE PLANS

Malaysians recognise that whilst foreign consultants can help in the early stages, the responsibility for keeping abreast of changing concepts and technology will rest with Malaysians. They also need to develop and shape GIS so that they are appropriate to the cultural and sociological context and the country's administrative structure with its underpinning precepts. Unlike many other Developing Nations, Malaysia is a fast developing nation which is already computer literate with an ever growing enthusiasm for IT. This enthusiasm seems to have gained added vigour with the Prime Minister's Vision 2020, that Malaysia should become a developed nation by that year.

Institutions of higher education accept some responsibility for channelling this enthusiasm towards meeting national projects and needs. The teaching of Digital Cartography and GIS falls within this remit.

EDUCATION

There is growing recognition that there will soon be an escalating demand for graduates with knowledge and skills in GIS. This is evidenced by the increasing number of enquiries about postgraduate and postdoctoral research opportunities overseas (including Britain). At present GIS vendors, some governmental organisations (MACRES and INTAN in particular) and a few academic institutions, notably Universiti Technologi Malaysia, Institut Technologi Mara and the Institute for Advanced Studies (IPT) of Universiti Malaya, are providing some limited training in GIS. Some British academics, such as Chris Webster and Ian Dowman, are providing much appreciated input with support from British Council and the Overseas Development Agency.

Professor Voon Phin Keong of Jabatan Geografi believes that computer-aided teaching of these subjects should no longer be regarded as an esoteric luxury in Malaysia (Voon, 1989). My two-month visit formed a part of the Jabatan's plans to commence such teaching within its new degree programme. The staff responsible for GIS

education are very knowledgeable and had recently acquired PC-GIMMS and Tydac SPANs for research and teaching purposes. Staff and graduate students of the Jabatan already have GIS experience based on IPT's GIS, the Australian GENASYS, running on IBM hardware. Several staff are involved in GIS projects funded by the UN Environmental Programme, the World Wildlife Fund Malaysia and the International Development and Research Council of Canada. The Jabatan's research is facilitated by the its impressive map collection. The Jabatan is keen to establish a GIS teaching laboratory, with appropriate software, courseware and teaching material.

The Jabatan has access to the training courses on Tydac SPANS, provided by MACRES. I therefore attempted to take the lid off GIS technology and consider some educational issues in my short course. Some dialogue was established between vendors and senior academic staff in the Jabatan towards potential sponsorship and collaboration over teaching. In addition, Dr Trevor Beaumont, Manager of the GIS Group within Scott Wilson Kirkpatrick & Partners, talked on "Remote Sensing and GIS". He described the use of innovative data capture technologies in several ODA-funded road design and other projects in data-poor Developing Nations. There were also opportunities to meet and talk to GIS personnel within Government Departments. At the invitation of the Director, I gave a lecture entitled "GIS: the thin end of a wedge of change?" at MACRES. The talk examined some policy implications of adopting GIS at a national level in Malaysia. Comments were also solicited on the Malaysian (Provisional) Standard for the Exchange of Digital Feature-Coded Mapping Data by government personnel involved in the drafting of this standard.

GOVERNMENTAL ISSUES

Malaysia does not have a national atlas and discussions with personnel in the Geodemography Section indicated plans towards the production of a computerised atlas based on the 1991 Malaysian population census. The UN is considering the location of its Regional Centre for Space Science and Technology within Universiti Malaya. Malaysian uptake of Digital Cartography and GIS is bound to develop and grow. The lack of adequate technology is a transient problem although some types of GIS applications are likely to be affected by the Official Secrets Act which limits access to data. The low level of British involvement in GIS projects in Malaysia is surprising given that Malaysia was a British colony. GIS professionals visiting or passing through Malaysia are encouraged to get in touch with Professor Voon and offer a seminar on their expertise.

REFERENCE

Voon, P. K., 1989. Geographical Information Systems and Malaysian Geography, *Malaysian Geographers*, 4: 49–69.

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