

Summary of Session 2: Applications of GIS for agro-environmental issues in various developing regions

Bradley C. Reed

Earth Resources Observation Systems Data Center, USA

Paper 1: Regarding the role of ICIMOD in promoting GIS in the Hindu-Kush Himalayan region, capacity building through case studies was emphasized and the difficulty in working in multiple countries due to data access and availability was indicated.

Paper 2: Development and utilization of agro-ecological zones in Indonesia using GIS summarized the use of expert systems and data integration to define agro-ecological zones.

Paper 3: Development of soil and fertilizer information system in China documented increasing fertilizer application rates in China over the past 20 years and described the implications in both environmental and social terms. This project is providing the fertilizer data to policy-makers and scientists.

Paper 5: Geo-coded field studies in Mongolia grasslands described state-of-the-art investigations in documenting satellite data through multi-scale, multi-instrument investigations.

Paper 6: Use of GIS in land resources management in the Colombian Orinoco region led to the development of partnerships with decision-makers at several administrative levels to facilitate land use planning and capacity building.

Paper 7: Land use analysis in Thailand through GIS described rice suitability mapping through a data integration and expert systems approach.

Paper 8: Agricultural production and climate changes in China described the increase in grain production in China since 1949 and the shift in grain growing emphasis from Southeast to Southwest and North China.

Paper 9: GIS studies at JIRCAS in collaboration with foreign institutes highlighted JIRCAS international GIS collaboration by using a study of salinization in Northeast Thailand as an example.

Several common themes emerged from this session including the realization that data integration, whether of data types (*e.g.* point, line, polygon, grid) or disciplines (*e.g.* social and physical) is now routinely performed. There is also now a coupling of GIS technology with other information technologies (expert systems, decision support systems) as well as with modeling. This appears to be an important and growing area of emphasis with GIS studies.

Despite the increasing availability and ease of software usage, it is still difficult to conduct many studies due to the difficulty in acquiring the appropriate data, either because the data do not exist, are protected, or are prohibitively expensive. This is an especially important issue when working in multiple countries. Great strides are being made to provide GIS-derived data to policy and decision-makers. The GIS community needs to continue to be pro-active in this direction.

