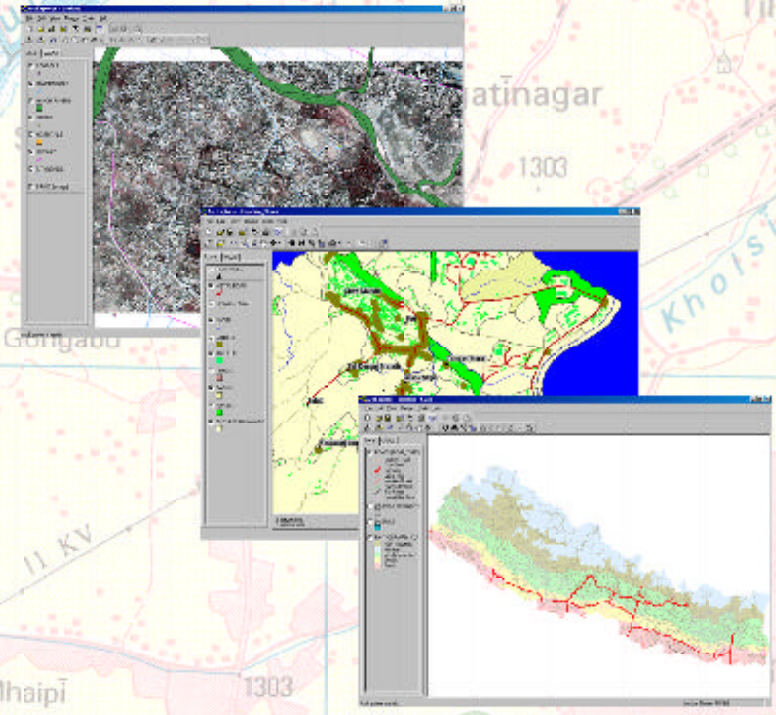
GIS FOR BEGINNERS

Introductory GIS Concepts and Hands-on Exercises



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Released on the occasion of GIS Day 2006, Nepal

GIS DAY NEPAL

Promoting Geographic Literacy through GIS

ICIMOD

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Introductory GIS Concepts and
Hands-on Exercises

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Mountain Environment and Natural Resources' Information Systems
International Centre for Integrated Mountain Development

ISBN: 92 9115 393 1

Published by
International Centre for Integrated Mountain Development
GPO Box 3226, Kathmandu, Nepal

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Foreword

Geographic information systems (GIS) are computer-based tools for mapping and analysing things that exist and events that happen around us. Our everyday decisions are dependent on this type of analysis. With the rapid growth of GIS and related technologies over the last two decades, GIS has become a vital element in maintaining and integrating geographic-based information. In today's information society, GIS technology is moving into the mainstream of the Information Technology (IT) industry and virtually influencing the way we deal with many of our problems. It helps us to solve problems such as locating a hospital or a facility, solid waste management, emergency vehicle routing, earthquake disaster mapping, real state business and many more.

Also, GIS software and the hardware required to operate it have become much more affordable and easy to use. This has resulted in the ability to develop GIS without making huge investments in software, hardware, and support staff; items that were once needed to implement them. GIS technology is rapidly reaching the public and their use is changing the way we access information and use it.

As GIS technology is taking hold in our society, it is important to create an awareness of the technology and educate the public. With ICIMOD's experience in the Hindu Kush-Himalayan (HKH) region, it has been observed that the popularity of GIS is growing rapidly. Through the Mountain Environment and Natural Resources' Information Systems (MENRIS) programme, the International Centre for Integrated Mountain Development (ICIMOD) is playing a catalytic role in promoting the use of GIS technology.

The demand for GIS training and education is continually on the rise. It is important not only to train and educate scientists, professionals, and technicians but also to bring about awareness and educate policy makers, decision makers, school/college students, and the public. The manuscript of this introductory text 'GIS for Beginners' with hands-on exercises was released on the occasion of GIS Day 2000 Nepal to bring about awareness of GIS technology and its applications. Encouraged by the welcome given to this document at this very important event, ICIMOD is now publishing it. An interactive CD-Rom for wider circulation with special emphasis on school and college students will be available at a later date.

This publication is intended to serve as introductory reading material on GIS to a wide-ranging audience. The publication introduces a collection of everyday problems from a spatial perspective and provides an overview of basic

mapping concepts. It introduces basic GIS concepts and gives a brief overview of GIS and related technologies. It also introduces how GIS can be used to analyse complex problems and briefly discusses how to establish GIS. The hands-on exercises provide an interactive introduction to GIS, which is drawn along similar lines to the book 'GIS for Everyone' published by Environmental Systems Research Institute (ESRI). The hands-on exercises provide a basic understanding of digital maps and how to interact with them. The exercises will help readers to answer basic geographic questions such as *what, where, how far,* and *what's it like*. The reader will learn to distinguish the difference between the dynamic nature of digital maps and static paper maps. All the exercises are based on ESRI-ArcExplorer freeware software with local datasets

This publication with the CD-ROM can be used for a short training course. We hope that the materials thus developed will be useful in promoting GIS technology in the region. Furthermore, the publication can be used as supplementary material in schools and colleges as an extension of geography and related courses.

We hope that the publication is of value to beginners and in promoting the understanding and use of GIS in Nepal and in the region.

J. Gabriel Campbell PhD.
Director General, ICIMOD

Acknowledgements

The authors would like thank all the enthusiastic Participants of the introductory GIS training course 'GIS for Beginners' (more than 120 participants from schools and colleges) held for the first time on the occasion of GIS Day 2000 Nepal. Their valuable feedback and enquiries about the training course has led us to publish this document. We would like to express our gratitude to the Hon'l Member of the National Planning Commission, Dr. Jagadish Chandra Pokharel, for formally launching the manuscript and the CD-Rom. Also, we would like to acknowledge the presence of three prominent geographers of Nepal, Professor Mangal Raj Joshi, Professor Upendra Man Malla, and Professor Mangal Siddhi Manandhar on the occasion and their valuable support for the cause of GIS in promoting geographic literacy.

We are grateful for the support of the former division head of MENRIS, Mr. Pramod Pradhan, and other MENRIS staff Mr. Sushil Pandey, Mr. Pradeep Mool, Mr. Saisab Pradhan, Mr. Govinda Joshi, Mr. Anirudra Shrestha, and Ms. Monica Moktan. The help and assistance provided by Dr. Pushkar Pradhan, Mr. Rajesh Thapa, Mr. Pawan Ghimire, Mr. Sagar Chapagain have been very much appreciated.

More importantly, we would like to express our sincere gratitude to Mr Jack and Mrs Laura Dangermond, who visited Nepal in late April 2001 and their encouraging words and support to the GIS Day event and the 'GIS for Beginners' manuscript. Mr. Jack Dangermond, ESRI President has been one of the founder members of International GIS Day and his genuine efforts and dedication for the cause of GIS Day and its promotion among the younger generation have inspired us immensely.

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