Acknowledgement

Subsequent to my post graduation thesis in the School of Planning and Architecture, New Delhi 'Environmental Imperatives for the development of Ernakulam in the Greater Cochin Area' in the year 1988, it was a haunting question to myself on how to take developmental-decisions in the most optimum path on total environment point of view by taking care of society, environment (physical) and economy. I started thinking aloud on how to develop a decision-making system on the above aspect. My job as engineer in the Military Engineer Services in Kochi (10 years) and town planner in the Greater Cochin Development Authority (10 years) greatly contributed my thought process on this topic.

The research proposal was given to the Council of Scientific and Industrial Research, New Delhi in the year 1998. CSIR was kind enough to award me a Senior Research Fellowship to do research on this topic with which I could do my Ph. D. registration in the School of Management Studies, Cochin University of Science and Technology. I express my sincere gratitude to Prof. (Dr.) Jose T. Payyappilly who agreed to guide me on this multidisciplinary and challenging topic. The valuable guidance, the moral boost and confidence given to me at various stages of my research by my guide as well as by my doctoral committee member Prof. (Dr.) George Varghese, I record with deep gratitude and reverence.

My sincere thanks are towards the Greater Cochin Development Authority, who has allowed me to do this research on a part-time basis and my job as town planner there gave access to various study reports and the work there enlightened my thought process without which I could not have satisfactorily completed this thesis.

I am highly obliged to the authorities of the Centre for Environment and Development, Kochi who provided me with the necessary data and infrastructure for the GIS study and I record with high regards the support
given by the experts there viz. Mr K.V. Ravindran, Mrs Sudha Pisharoty, Mr Subin K. Jose and Mr Anil. I also record with gratitude the support given to me by research associate Dr. H. Sudhira, Centre for Ecological Studies, I.I.Sc Bangalore and research student Mr Amarendra Das, Centre for Development Studies, Thiruvananthapuram for the finalisation of the regression model. Also I express my gratitude to Dr T.V. Ramachandra, I.I.Sc Bangalore and Dr. V. Raghavaswamy, NRSA Hyderabad who were kind enough to give me various study reports, which were highly useful to me for this research.

I am highly indebted to the United Nations Agencies namely UNDP, WWF and UNCHS from where I could get supporting details for developing this ‘Environmental Efficiency’ concept HD/EFp. Also I record with gratitude www.bluemarblegeo.com for allowing me to download the ESRI shape file of world map and the ESRI India for providing me the evaluation copy of ArcGIS which helped me for the final refinement of my thesis report. I also record the experts who contributed me the SWOT of Greater Kochi namely Mrs. Elizabeth Philip, Retired Chief Planner, GCDA, Mr. Thomas Titus, Department Manager, Tebodine, Muscat and Mr Georgekutty Kariampilly, Vice Chairman, IGBC Kerala Chapter.

Last but not the least, I wish to acknowledge the steadfast support and encouragement given to me by my husband Mr. Antony George Katticaran and my children Maria and George for their simple and logical suggestions for the refinement of the concepts. I also wish to put on record my appreciation for their utmost patience, when they lacked due attention, at times, when I was intensely preoccupied with this effort.

Now, I present this doctoral thesis for the glory of God and the service of humanity.

May Mathew