ACKNOWLEDGEMENTS

This work was made possible by the intellectual, moral and material support from many, all of whom I may not be able to name in a few pages. They have stood by me through thick and thin. I owe a lot of apologies to many whom I have troubled for small and big things.

I am indebted most to my thesis Supervisor, Prof. Subba Rao. He, to say the least, is and shall always remain much more than a thesis guide. I would like to thank Meera Velayudhan, my wife, for her support and assistance in the thesis preparation. Without her setting my priorities right, may be this work would not have been completed. My friend and colleague, E.P. Jagadeesh has given invaluable help. This work has benefited from the many helpful discussions with him and his critical views. He has also helped in the editing of the thesis.

Among those who have helped me in data collection are, notably, Dr. E.J. James and Dr. N.D. Namboodiripad of the Centre for Water Resources Development and Management, Calicut, who gave me data on river flows, I.D. Menon, Hydrographer, Cochin Port, who provided hourly tidal range data, Dr. Suchindan and Mr. Salim from CESS, Trivandrum and K.M. Veena, MPEDA, Cochin.

Dr. Ramaswamy initiated me into the study of sensitivity analysis. Dr. Gita Subba Rao showed me how effectively sensitivity analysis could be used. Dr. Asthana had been particularly helpful. Prof. Karmeshu, Prof. H.K. Das and Prof. Anjali Mookerjee have helped me in innumerable ways. I have greatly benifited from the interaction with Dr. L.K. Pande and Dr. G.P. Malik. Discussions on mathematical problems with my colleague, Dr. Krishna Mohan have been valuable. Vikas Rai and Sreenivasan have also helped in their own ways.

I am grateful to the Dean, School of Environmental Sciences and the Jawaharlal Nehru University for providing
me the facilities for work in the School. I also thank
Dean, School of Computer and System Sciences, JNU, Director,
Computer Centre, JNU as well as Dr. Prabhakar Choudhary of
the Centre for Biotechnology for providing me computer
facilities.

I am thankful to the Library Staff, JNU, especially
K.U.M. Rao. Staff of the Computer Centre, JNU were very
helpful, particularly Mr. Randhir. H. Basu has photocopied
not only the thesis but also a good deal of relevant material
over the years. Hegde Computer Cell people typed the thesis.
Adarsh Enterprises photocopied a part of the thesis at
short notice.

Much needed financial support was provided by the
Council of Scientific and Industrial Research (India) in
the form of a research fellowship.

My friends C. Jayaraj, Velumani, N.D. Jayaprakash, T.K.
Arun, Shobhana, K.N. Ganesh, Thomas Isaac, Nata Duvvury,
Anandi, Asad Zaidi, Nalin Taneja, Indu, Kuldeep, Aditya
Nigam, Rushid, C.M. Ravi, Gita, Mohan Rao and Arun Attri
have helped and encouraged me in my work. Among the few
persons who hold holistic ideas about human beings and
environment is Dr. Opeh, who has helped in small and big
ways. Prahlad, Jaya, Hema, Bagirath, Sujata and Preet have
affectionately goaded me on. Drs. Prabhat and Utsa Patnaik
provided the much needed "roof over the head" during the
crucial stage of thesis writing.

Words cannot fully reflect the tremendous support from
my mother, C.A. Annamma and father, C.V. Pappachan which
enabled me to pursue my academic work. My father helped
in data collection too.

The Kerala Shastra Sahitya Parishad and Dr. M.P.
Parameshwaran have been a source of inspiration.

C.P. GEEVAN