

NATIONAL VEGETATION CARBON POOL ASSESSMENT PROJECT

ISRO Geosphere Biosphere Programme Background

The National Vegetation Carbon Pool assessment project is a prestigious national project carried out by Indian Space Research Organization (ISRO) under its Geosphere Biosphere Programme. The project envisages to assess the biomass and carbon in different ecosystems. (eg. forest ecosystem, forest strips, trees outside the forest, plantations, agricultural ecosystem, rural and urban ecosystems and other ecosystem) of the country. In India several studies have been carried out in different ecosystems, forest and some for out-side trees or forest. The data/information available on biomass and carbon are based on different methodologies spreading in last three decades for different objectives and purposes. Therefore, this data/information has limitations while extrapolating in larger areas. Since data collection is not uniform and hence is not comparable. This project is an attempt to collect data for biomass and carbon pool assessment following uniform methodology in India. It is also envisaged that the data will be processed uniformly for extrapolation.

In the past the emphasis has been to assess the stock, biomass or carbon of commercially important species and less emphasis has been given to other forms of biomass e.g. in shrubs, herbaceous flora, plants and plants and twigs with < 10 cm diameter, foliage, grasslands, etc. The biomass stored in trees-outside-forest is significant and therefore, assessment becomes important in view of the emphasis on agro forestry, plantations, etc. Forest Survey of India has attempted to assess biomass and carbon in such ecosystems. In the Vegetation Carbon Pool assessment project, it is envisaged to collect data on all forms or store houses of phytomass and carbon in different ecosystems. Therefore, the format for collecting the field data is comprehensive. It is designed to collect data, which will be amenable for further phytosociological analysis. This database will be unique in many ways at national level within a specific time-frame and uniform methodology.

School of Environmental Sciences, Mahatma Gandhi University is the collaborating institution in this major project and is carrying out work in Kerala state. Outputs/Results of the Project will be useful inputs for Policy Decisions in view of Global Warming and Climate Change as well as National Carbon Status. Phase-I of the project has been operated during period of 2010-2011 focusing both forest and tree outside forest (TOF) in 8 districts of Kerala. Phase –II of the Project concentrate mainly on the forest ecosystems of entire Kerala which is scheduled to be commence from April 2016 onwards for the period of three years.

Phase-1(2010-2011)

National coordinator and Executing Party

- 1) Dr.Sarnam Singh,
Dy Project Director, VCP IGBP,
Indian Institute of Remote Sensing (IIRS), Dehradun.

Principal Investigator and Collaborating Agency

- 1) Dr.E.V.Ramasamy
Associate Professor
School of Environmental Sciences
Mahatma Gandhi University
Kottayam, Kerala -686 560, India.

CO- Principal Investigator and Collaborating Agency (CA)

- 1) Dr. Mahesh Mohan
Assistant Professor
School of Environmental Sciences
Mahatma Gandhi University
Kottayam, Kerala -686 560, India.

Summary of the Phase-1

1. Project activates for the Phase-1 (2010-2011)

Memorandum of Understanding (MoU) for the first phase of VCP Project was signed on 26th November 2009 between Indian Institute of Remote Sensing (IIRS), Dehradun and School of Environmental Sciences, Mahatma Gandhi University, Kottayam, Kerala and tenure of the project was for 1 year. Total sanctioned amount during the Project was Rs 4, 60000 for 1 year. The project activities for the first phase of VCP Project were carried out between June 2010-July 2011(1year). During the phase-1 we were allotted 8 districts covering 4 central (Idukki-7 forest sites, Kottayam-6 forest sites, Ernakulam-6 forest sites, Thrissur-5 forest sites) and 4 southern portion (Thiruvananthapuram- 6 forest sites, Kollam- 6 forest sites, Alappuzha-4 forest sites, Pathnamthitta-6 forest sites) of Kerala. Field work activities included 46 forest sites and TOF sites of all 8 districts of Kerala. VCP Project for the Northern portion of Kerala covering 6 districts was assigned to another research institute in Kerala. In the first phase of project, institution completed total 179 Tree outside Forest sites and 7 forest sites in 8 districts of Kerala.

Phase-II (2016-2019)

National coordinator and Executing Party

- 1) Dr. C.S. Jha

Group Director, Forestry and Ecology Group

National Remote Sensing Centre (NRSC-ISRO)

Department of Space, Government of India Balanagar, Hyderabad - 500 625

- 2) Dr. Gaurav Srivastava

Scientist/ Engineer 'SD' Forestry and Ecology Group

National Remote Sensing Centre (NRSC-ISRO)

Department of Space, Government of India Balanagar, Hyderabad - 500 625

Principal Investigator and Collaborating Agency

1) Dr.E.V.Ramasamy

Associate Professor

School of Environmental Sciences

Mahatma Gandhi University

Kottayam, Kerala -686 560, India.

CO- Principal Investigator and Collaborating Agency

2) Dr. Mahesh Mohan

Assistant Professor

School of Environmental Sciences

Mahatma Gandhi University

Kottayam, Kerala -686 560, India.

Summary of the Phase-II

Noting that the National Remote Sensing Centre (NRSC-ISRO) and School of Environmental Sciences, Mahatma Gandhi University, Kottayam, Kerala have an abiding interest in the conservation, production and utilization of forests and on the use of satellite remote sensing and GIS technologies for the scientific management of forest and the scientific understanding of various issues related to phytomass assessment, forest functioning and carbon sequestration. NRSC and CA have planned a collaborative scientific research programme on assessment of phytomass and vegetation carbon. NRSC and CA have agreed to collaborate and carry out ground data collection in the respective forest area (Total 50 forest Sites) of entire districts (14 districts) in Kerala in accordance with the project guidelines of National Vegetation Carbon Pool Assessment. The tenure of the project is for 3 years and it is expected to commence from April 2016 onwards. Main activities in Phase-II include revisit and field data collection in field plots established in Phase-1 of the project and laying out new forest plots and inventory of all vegetation in the plots of respective forest area as per the requirement of the VCP Project and as per the sampling design of the project.