



VVK



ICFRE-INSTITUTE OF FOREST BIODIVERSITY (ICFRE-IFB), HYDERABAD

A Report on "Sustainable Land Management Practices for Rehabilitating Degraded Land" under Van Vigyan Kendra (VVK) organized at ICFRE-Institute of Forest Biodiversity, Hyderabad on 07.03.2024

A one-day training program on the topic "**Sustainable Land Management Practices for Rehabilitating Degraded Land**" was organized for the forest officials of the Telangana State Forest Academy (TSFA) on March 7th, 2024, at the Training cum Extension Centre of ICFRE - Institute of Forest Biodiversity, Hyderabad, under the Van Vigyan Kendra (VVK). This training program was attended by 45 forest officials from the Telangana State Forest Academy.

The training program begins with a course overview delivered by **Dr. Ruby Patel**, Scientist-B, who acts as the Course Coordinator of the program. Dr. Ruby Patel warmly welcomes all participants and provided them a detailed explanation of the training program's significance in the current context. Furthermore, she also presented a concise overview of the current status of degraded lands in India, emphasizing the importance of implementing Sustainable Land Management practices for rehabilitating these lands.

Shri E. Venkat Reddy, Director of the ICFRE-Institute of Forest Biodiversity, Hyderabad, addressed all participants who joined this one-day training program. During his speech, he highlighted the escalating anthropogenic activities contributing to land degradation, emphasizing the necessity of implementing effective land management practices. He stressed that degraded land status impedes natural regeneration, consequently leading to deteriorated soil health. Shri. E. Venkat Reddy advocated for the use of organic manure as a means to conserve soil health and underscored the importance of implementing forest management practices to improve land conditions and soil health.

Dr. Kavi Sidharthan, Sc-B, delivered a presentation about the Institute and its activities. During his address, he introduced the participants to the institute's mandate, divisions, working jurisdiction, and core research areas. Additionally, he mentioned the existence of the ICFRE-Coastal Ecosystem Centre in Vishakhapatnam and a field station in Mulugu, alongside the primary institute, ICFRE-IFB. He highlighted that the institute is also conducting the "Prakriti" Program, an initiative connecting scientists with students to raise awareness among school children about nature conservation. He also provided an overview of the institute's various research projects, publications, and extension activities.

In the continuation of the training program, **Dr. Ruby Patel**, (Sc-B) presented on "**Degraded Land Status in India.**" In her presentation, she highlighted how the increasing population is exacerbating the pressure on it. Dr. Patel also pointed out that human activities are eroding the biological, chemical, and physical properties of land, consequently diminishing soil fertility and productivity. Therefore, she stressed the need to prioritize the implementation of sustainable land management practices to address land degradation. Highlighting the crucial role of soil in long-term carbon sequestration, she emphasized that even a 1mm layer of soil takes millions of years to form. Thus, it is essential to prioritize the conservation of natural resources for the sake of future generations. Additionally, Dr. Patel discussed various factors contributing to land degradation, such as deforestation, overgrazing, shifting agriculture, and climate change, all of which demand attention to rehabilitate degraded lands.

Dr. Ruby Patel also presented on "**Restoration of Degraded Land using Sustainable Land Management Practices in India.**" In her address, she discussed the United Nations Convention to Combat Desertification (UNCCD) COP14 conference, where India is committed to restoring 26 million hectares of land by 2030. Consequently, to achieve this goal, various sustainable land management practices need to be implemented. She emphasized implementing conservation farming and organic farming, which would help retain soil moisture and consequently increase soil fertility. Additionally, she discussed various sustainable land management practices such as conservation tillage, cover cropping, and crop rotation, all aimed at improving soil health by reducing erosion, increasing organic matter, and enhancing soil structure.

After the lecture session, **Dr. Ruby Patel**, (Sc-B) and **Shri C. Sachin**, (Technical Assistant) organized a field demonstration of soil sample collection. The demonstration focused on the collection of soil samples and the tracing of Geocoordinates of sampling points using GPS devices or mobile phones. They emphasized the significance of soil in three

different depths at each sampling point, including litter, canopy cover, soil erosion, and how these factors contribute to the flora of the respective region. Continuing with the topic of sample collection, they also explained the process of processing these soil samples before sending them for nutrient analysis in the laboratories. Additionally, they provided an overview of the preparation of forest soil health cards.

The participants were further briefed on the testing of soil samples for macro and micro nutrients in the laboratory. Dr. Ruby Patel discussed the parameters followed in analyzing the samples, such as pH, EC, organic carbon, macronutrients (available nitrogen, potassium, phosphorus and sulfur), and micronutrients (boron, copper, manganese, iron, zinc). She highlighted the crucial role these nutrients play in the growth of trees and the potential effects of their deficiency on the flora of respective forest regions. Simultaneously, Dr. Ruby Patel and C. Sachin showcased various instruments used in the analysis, including pH meters, EC meters, Flame Photometers for potassium, Kjeldahl distillation units for available nitrogen, and Atomic Absorption Spectrometers for copper, zinc, manganese, and iron. They concluded by explaining how all this data is compiled to create forest soil health cards and provided recommendations for plantations in degraded forest areas.

The one-day training program concluded with the valedictory session and certificate distribution. The training ended with vote of thanks to all the participants by **Shri E. Manikanta Reddy**, Technician, Extension Division, ICFRE-IFB, Hyderabad.



Glimpses of the Program



