SITUATION:

Currently in India, long-term monitoring of forests is still a gap area. Most long-term forest monitoring systems only focus on the growth of timber species, and very few are designed on ecosystem dynamics (Tewari et al. 2014). None are for monitoring ecosystem services. The lack of long-term data on forests, ecosystem dynamics, and the supply of ecosystem services deters quantifying services from forests.

The Himachal Pradesh Forest Ecosystem Services Project (HP-FES) together with the Himachal Pradesh Forest Department (HPFD), is developing a Long-Term Ecological Monitoring (LTEM) system for the Himalayan state of Himachal Pradesh. This system will support decision-makers and managers of natural resources to identify suitable management strategies for sustainable forest management.

OBJECTIVE:

The objective of developing an LTEM system is to understand the dynamics of forest ecosystem for developing appropriate management strategies to society. The project in partnership with HPFD has prepared an LTEM framework. To sustain the LTEM system, the forest department has institutionalised it within the working plan division.

APPROACH:

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Himachal Pradesh Forest Department and experts, followed by the development of a framework design in consultation with them. An agreement was reached on the institutional set up for the LTEM accompanied by necessary state-level decisions. The design of the LTEM was developed based on national and international experiences and the system was set up, including a trial run.

Capacity development for the front-line staff of the cell on monitoring, data analysis, LTEM database and its installation on the server accompanied the setup.

Finally, the first data assessment was carried out and analysed.
This is an online database system installed in the server of the state forest department. The LTEM application is built with an open-source architecture EDV HGRQQ64/DQG1RGHMV 7KHO64/VDHYULYVXHGRUHGWYLQVRUDVWLDQEOH T FDOFXODWRQVQGDWD’OWHULQ) 7K/H/0TRUHLVDHYVGRQWKLH-DYDFULSWIU in Node.js. The user web interface is built with the 9XHMVI1UDPZRUN
• The entire application is containerized with Docker Platform for multi-operating system compatibility.

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Mr. Ravindra Singh
Director
Indo-German Biodiversity Programme
E: biodiv.india@giz.de
Address
A2/18, Safdarjung Enclave,
New Delhi, 110029
Country
India

• The LTEM database is the only state-level database LQ,QGLDKWQHVVXUHVDVXVWDLQDEOH R (FRV WWHP6HUYLFHV)(6 $VXWDLQDEOH"RZRI)6LVH(SHFWHGREHI in future, by monitoring and comparing the changes and improvising on the management interventions carried out by the forest department.

$VXHVPQHQRWRI1RQ7PLEHUI)RUHWV3URGXFVWV173 can be made by evaluating their potential and current use.
• This online database can be adopted at many levels and can be used for monitoring National Parks,
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APPLIED DIGITAL TECHNOLOGY:
• The LTEM database is the only state-level database LQ,QGLDKWQHVVXUHVDVXVWDLQDEOH R (FRV WWHP6HUYLFHV)(6 $VXWDLQDEOH"RZRI)6LVH(SHFWHGREHI in future, by monitoring and comparing the changes and improvising on the management interventions carried out by the forest department.

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