



Bangladesh Forest Information System



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Bangladesh

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**Food and Agriculture
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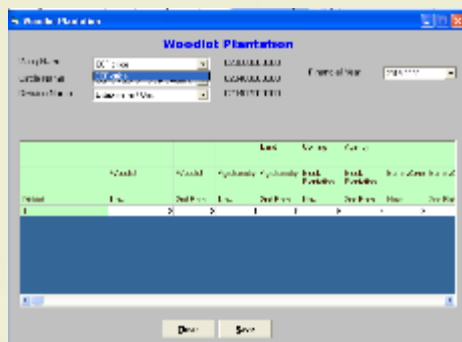
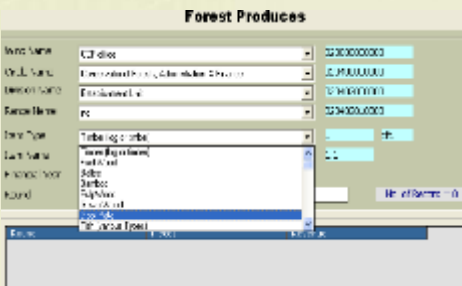


Food and Agriculture
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**UN
environment**

Former information systems in FD



Background:

- Forest Department maintains 10496 staffs under 4 Wings, 9 Circles, 52 Forest Division offices
- Manage 14.1% of forest area
- Information system to manage forests is crucial

Challenges with the previous information systems

- Not operationalised`/sustainable
- Not centralised
- Absence of metadata and documentation
- Limited scope due to lack of IT skill/facilities
- Limited use and accessible by few technical staff

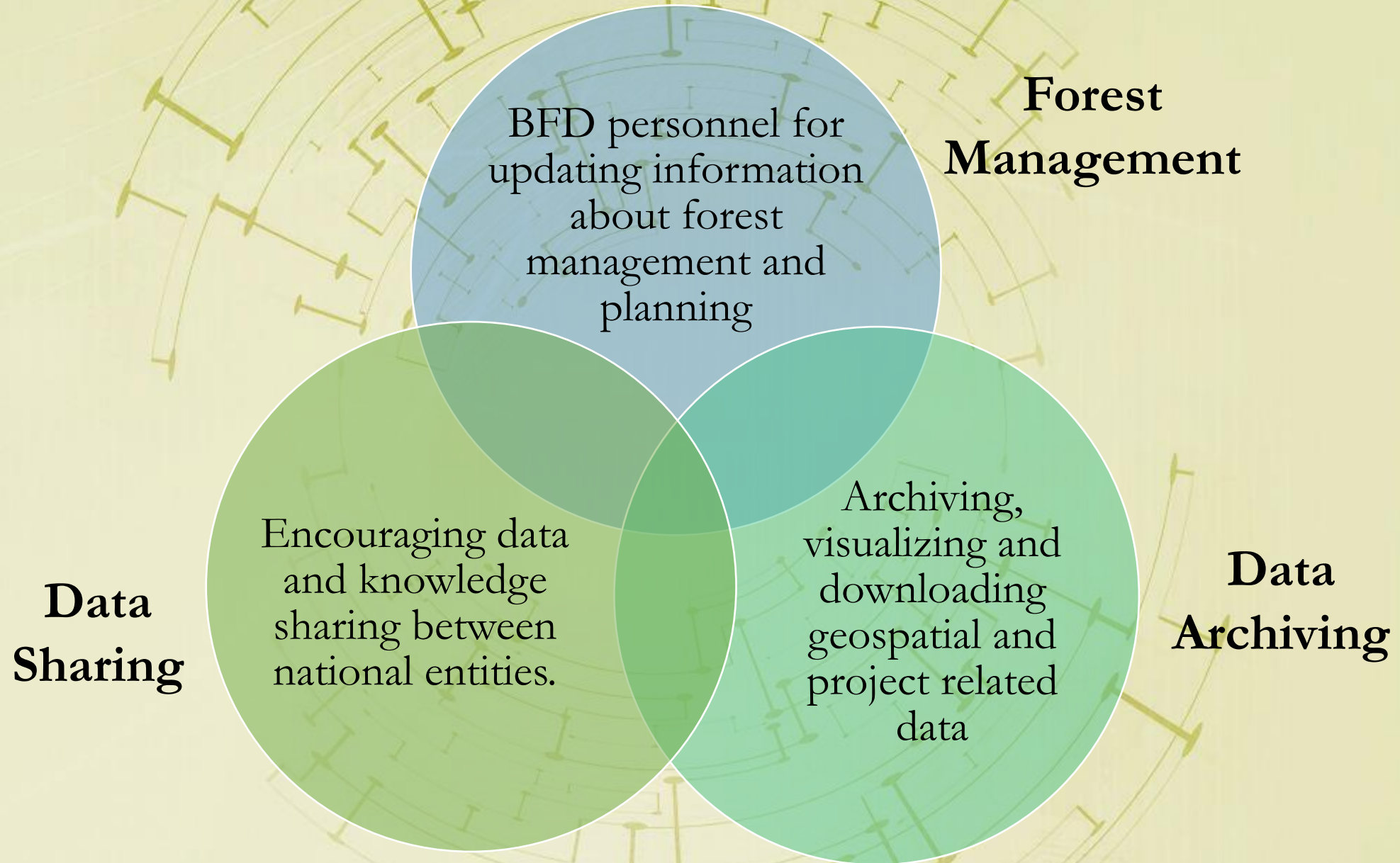


What is the BFIS?

The Bangladesh Forest Information System (BFIS) is first web-based information system of Forest Department of Bangladesh, under the MoEFCC for forest management and conservation. The BFIS is an integrated system to support planning, implementation and monitoring of multi-objective forest management activities.

<http://bfis.bforest.gov.bd/bfis/>

BFIS is a dynamic web-based platform for...

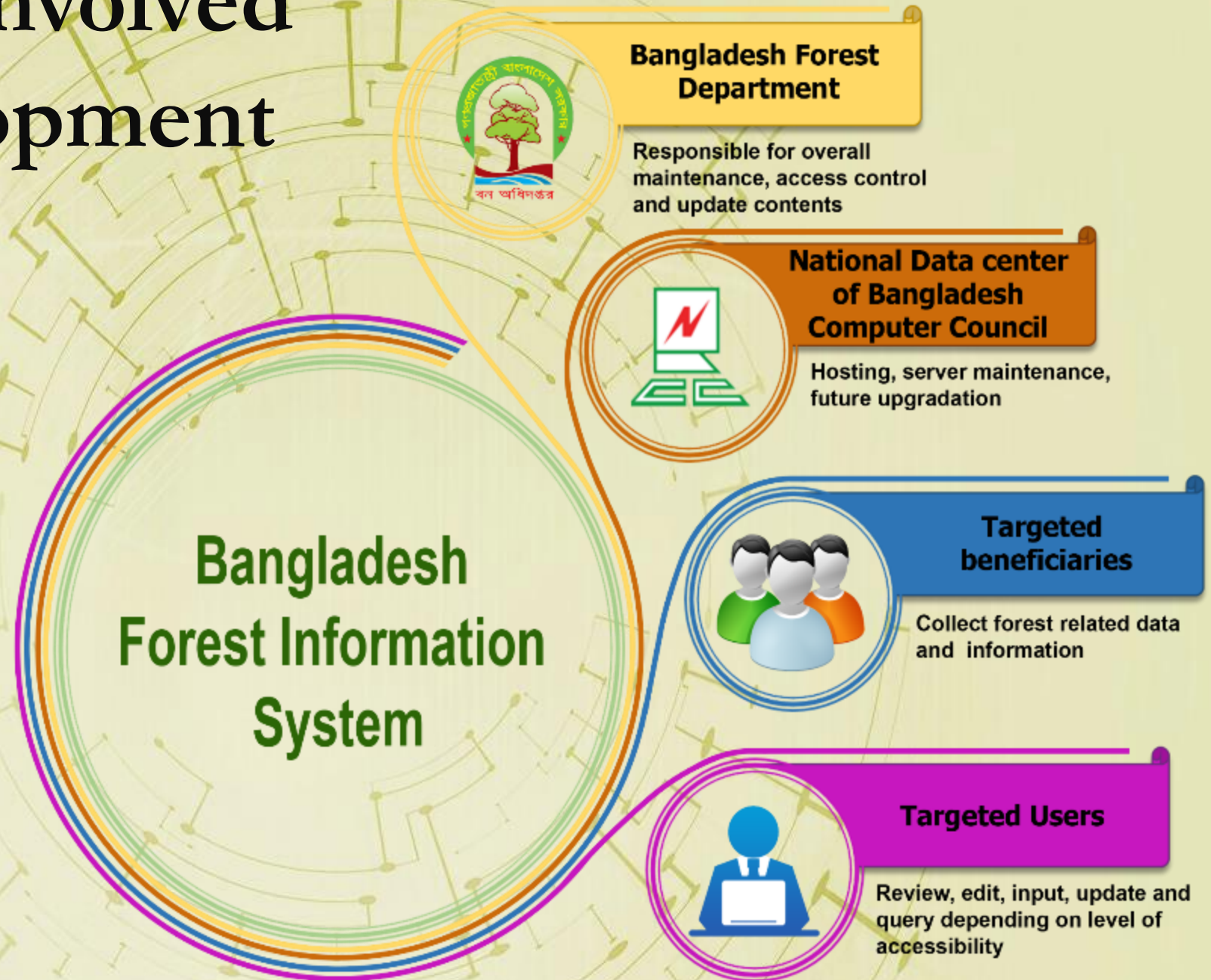


The BFIS supports the implementation of

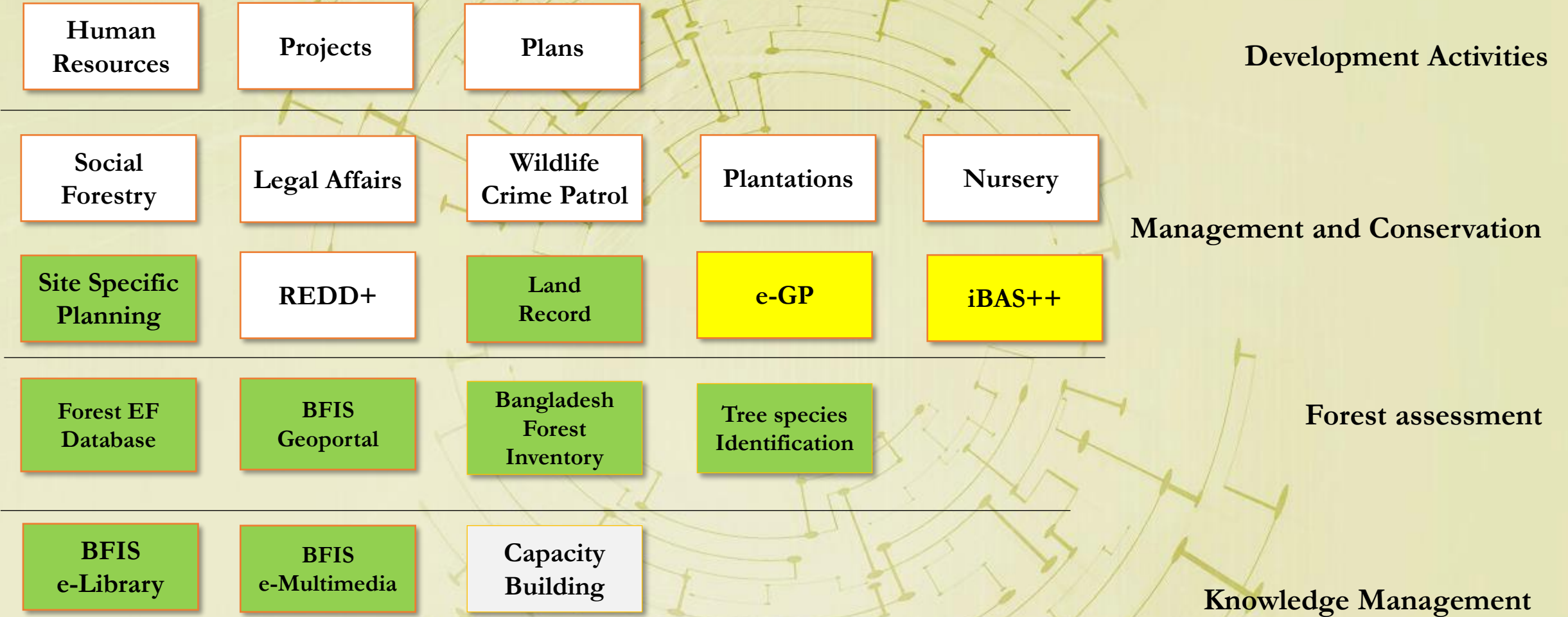
- Digital Bangladesh Vision 21
- Right to Information Act
- Sustainable Development Goals
- 8th Five Year Plan
- Country Investment Plan for Environment Forest and Climate Change
- Bangladesh Climate Change Strategy and Action Plans
- REDD+
- & many others (FRA, FAOSTAT, etc.)



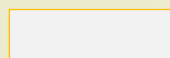
Stakeholders involved in BFIS development




BFIS modules



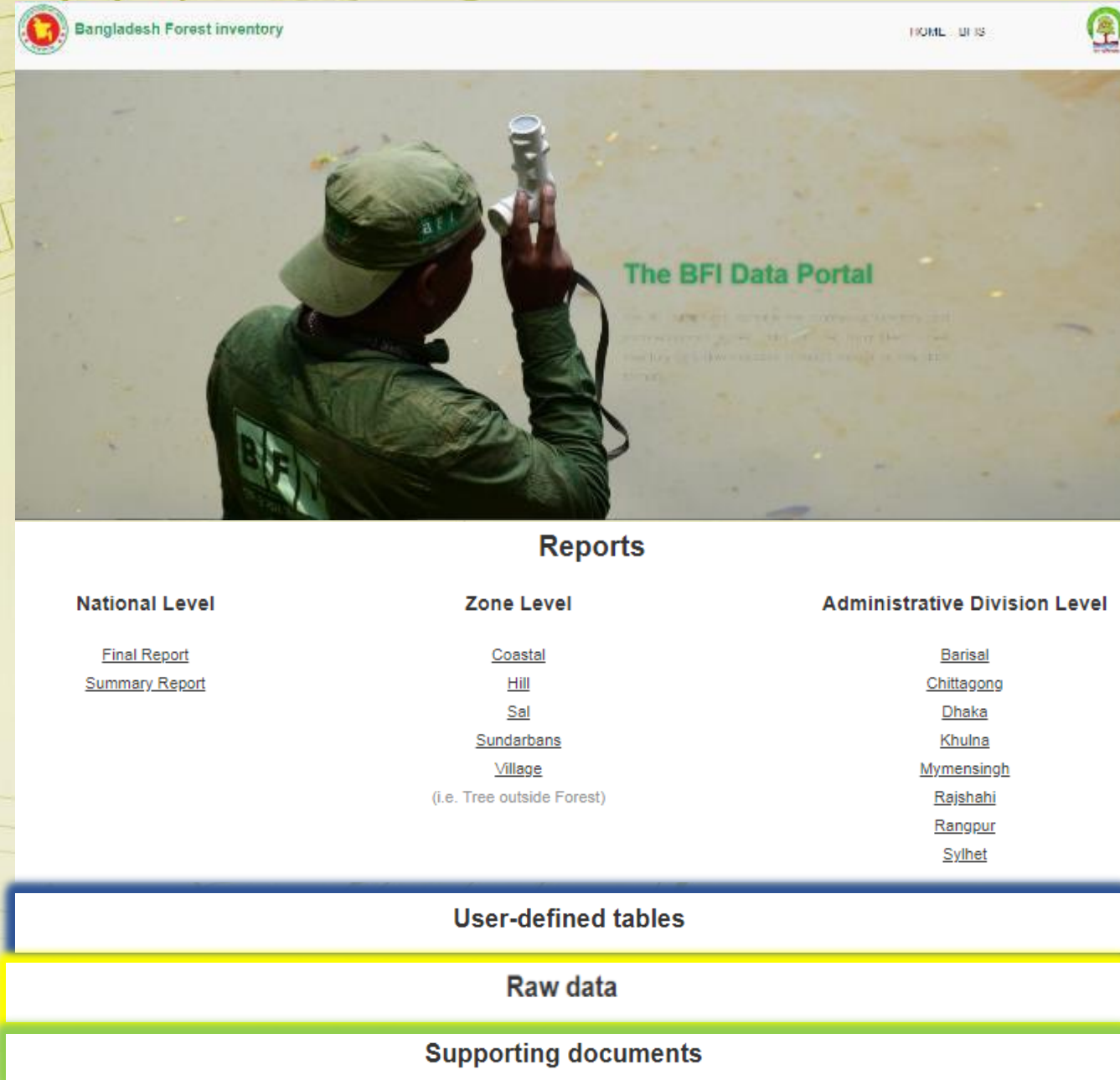
 → operational

 → available information/ under planning

 → operational

BFIS module: Bangladesh Forest Inventory

- **Database** of biophysical and socio-economic field survey data obtained from the latest BFI (2016 – 2018)
- **Reports** at the national and sub-national scale (BFI zones, divisions etc)
- **Tools** for calculating customized estimates of tree and forest resources according to user needs
- **Raw BFI** and socio-economic data
- **Supporting documents** for data collection, cleaning and archiving



Bangladesh Forest inventory HOME BFIS

The BFI Data Portal

Reports

National Level	Zone Level	Administrative Division Level
Final Report	Coastal	Barisal
Summary Report	Hill	Chittagong
	Sal	Dhaka
	Sundarbans	Khulna
	Village	Mymensingh
	(i.e. Tree outside Forest)	Rajshahi
		Rangpur
		Sylhet

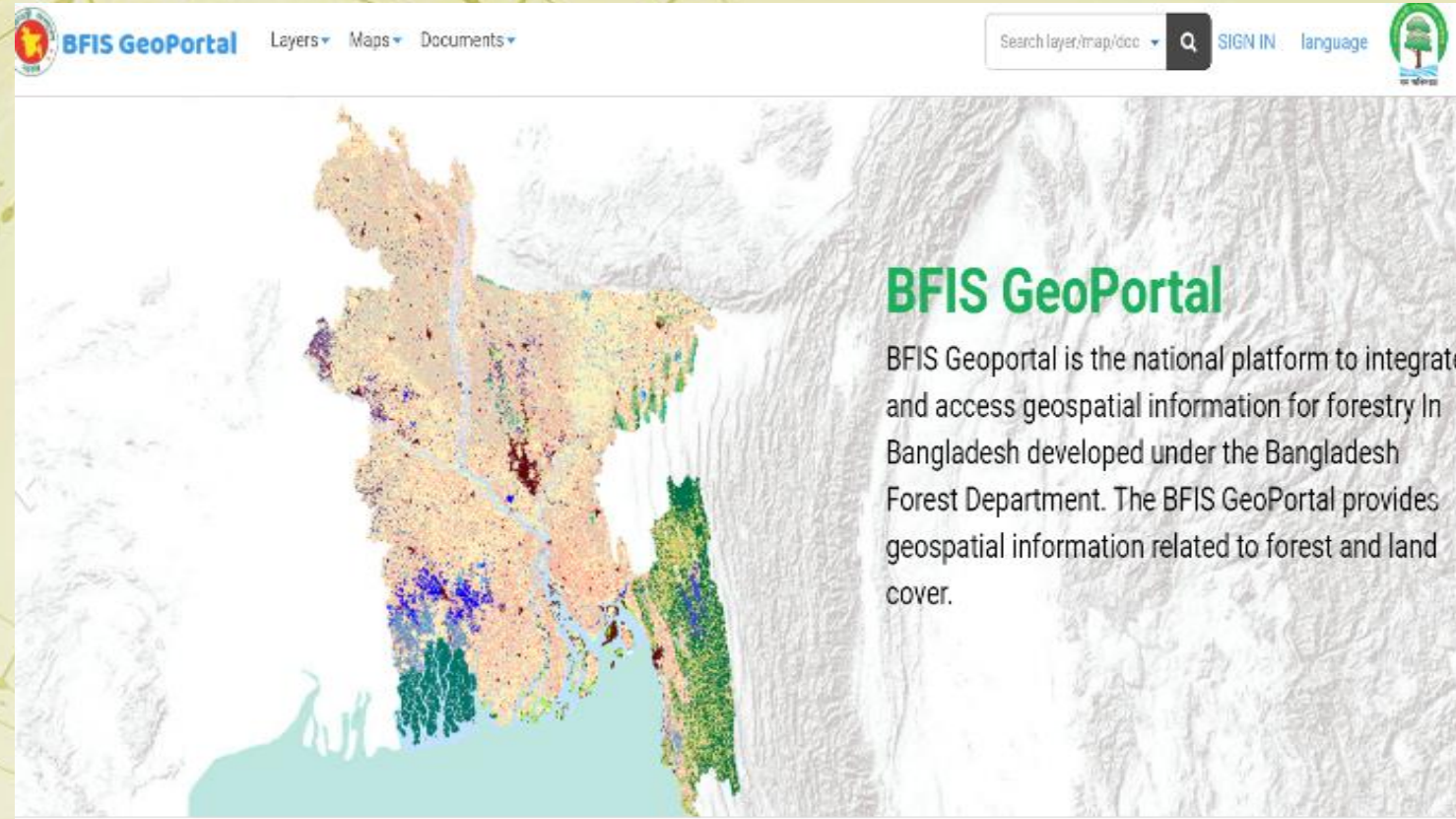
User-defined tables

Raw data

Supporting documents

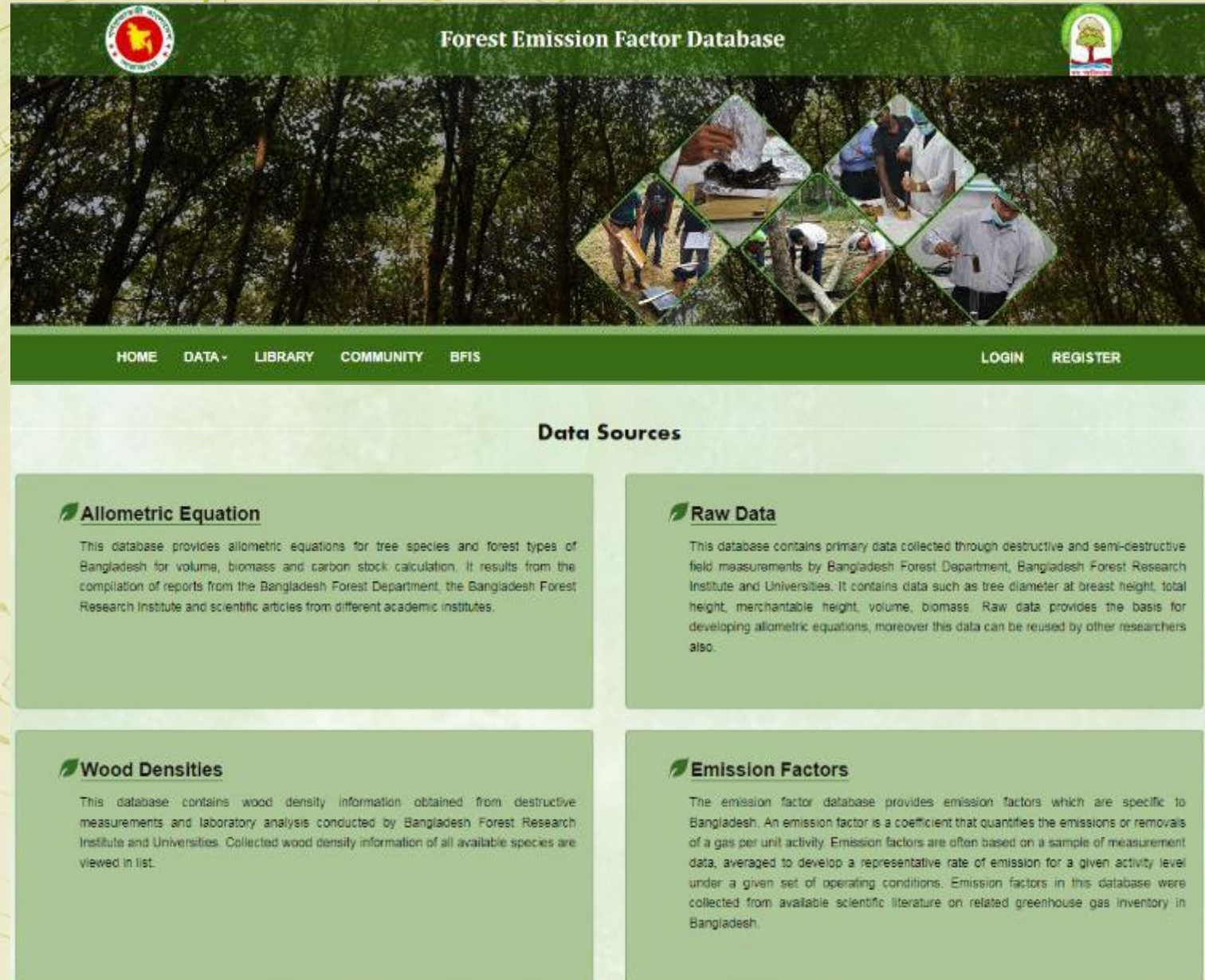
BFIS Module: Geoportal

- The first geoportal using LCML with land cover similarity assessment tool
- Interoperable with GeoNode based platforms for interacting and sharing geospatial data
- Allows users to analyze, create, share and visualize geospatial data and maps without using a mapping software
- ArcGIS plugin is developed to allow users to upload large data files and formats (e.g. geodatabase)



BFIS Module: Forest Emission Factor Database

- The **first online** data access tool for information related to emission factors, allometric equations, tree and forest related information.
- 700 country-specific allometric equations
- 200 wood density data
- 109 Genus, 450 Species
- Almost 1000 emission factors
- Allows users to quickly find information
- No account is needed



The screenshot displays the website for the Forest Emission Factor Database. The header features the Bangladesh Forest Department logo on the left, the title "Forest Emission Factor Database" in the center, and another logo on the right. Below the header is a banner image of a forest with a collage of diamond-shaped photos showing researchers working in the field. A green navigation bar contains the following menu items: HOME, DATA, LIBRARY, COMMUNITY, BFIS, LOGIN, and REGISTER. The main content area is titled "Data Sources" and contains four green boxes, each with a tree icon and a title:

- Allometric Equation**: This database provides allometric equations for tree species and forest types of Bangladesh for volume, biomass and carbon stock calculation. It results from the compilation of reports from the Bangladesh Forest Department, the Bangladesh Forest Research Institute and scientific articles from different academic institutes.
- Raw Data**: This database contains primary data collected through destructive and semi-destructive field measurements by Bangladesh Forest Department, Bangladesh Forest Research Institute and Universities. It contains data such as tree diameter at breast height, total height, merchantable height, volume, biomass. Raw data provides the basis for developing allometric equations, moreover this data can be reused by other researchers also.
- Wood Densities**: This database contains wood density information obtained from destructive measurements and laboratory analysis conducted by Bangladesh Forest Research Institute and Universities. Collected wood density information of all available species are viewed in list.
- Emission Factors**: The emission factor database provides emission factors which are specific to Bangladesh. An emission factor is a coefficient that quantifies the emissions or removals of a gas per unit activity. Emission factors are often based on a sample of measurement data, averaged to develop a representative rate of emission for a given activity level under a given set of operating conditions. Emission factors in this database were collected from available scientific literature on related greenhouse gas inventory in Bangladesh.

BFIS module: Tree species Identification

- A **web-based application** developed by the FD and BNH
- The Android application is made available in Google Play Store “**BGD Trees**”
- It is the **first national digital tool** to identify and describe the tree species instantly in the field
- **Newly identified tree species** can be added into the list through admin panel approval
- It was used in the latest BFI for tree identification

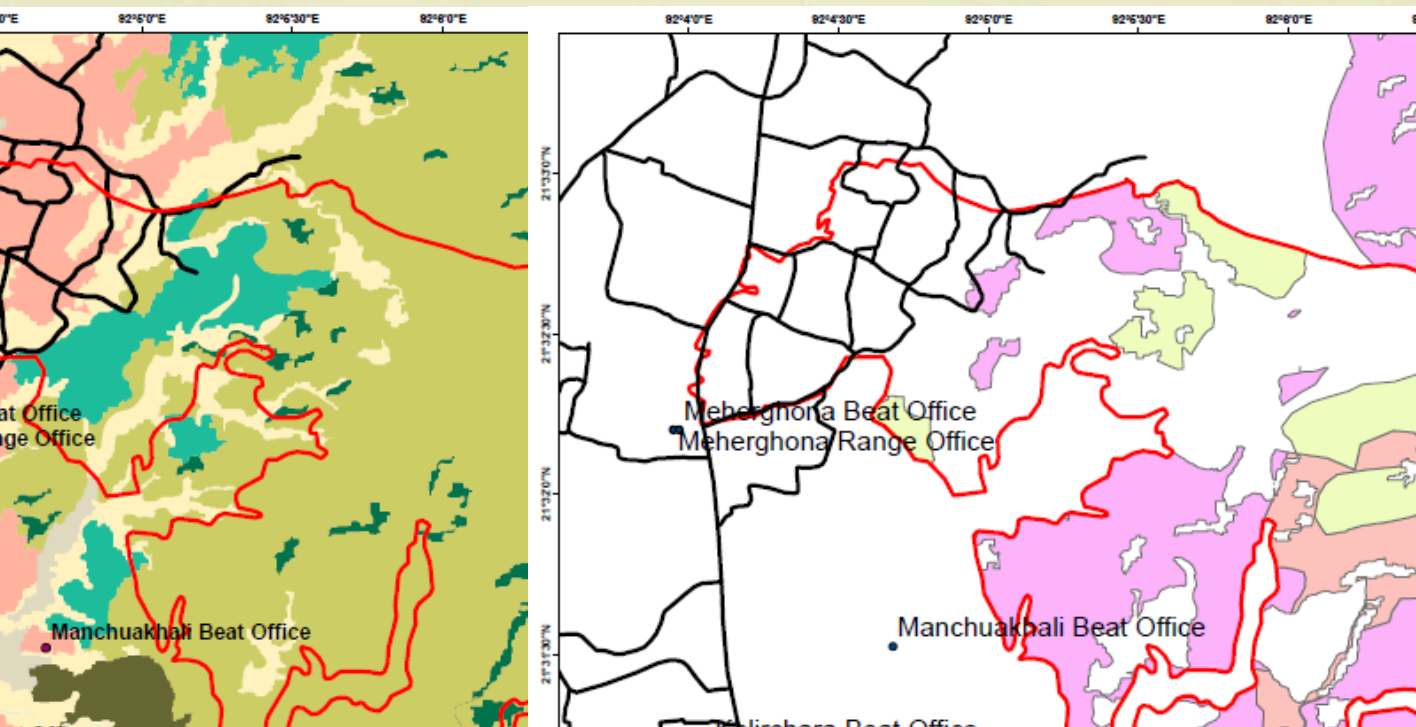


Tree Species Identification



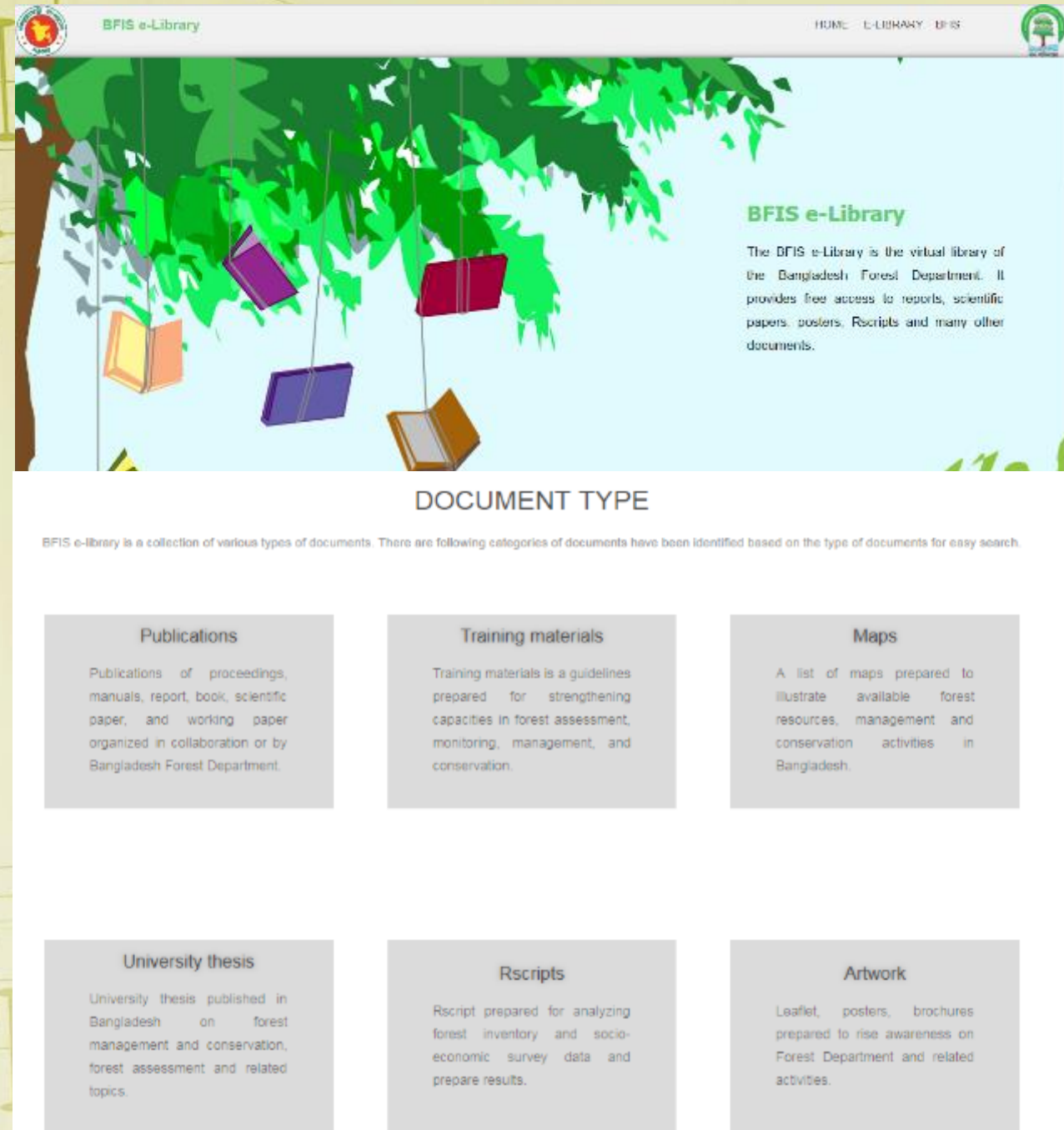
BFIS module: Site Specific Planning

- SSP for restoration of degraded and denuded forests at Forest Beat landscapes.
- A whole Beat approach for long-term restoration, defines site-interventions matching.
- Zonation at micro level (Beat) for community interface, buffer plantations and wildlife zones.
- SSP is considered as biophysical baseline for the project performance.
- SSP also identify anthropogenic concerned with a Beat landscape.
- SSP sets the premise for Collaborative Forest Management approach.



BFIS module: e-Library

- The first e-Library for forest-related documents in Bangladesh
- The BFIS e-Library includes
 - publications (e.g. manuals, reports, books, scientific papers, working papers etc.)
 - Trainings materials
 - Maps
 - BSc, MSc thesis (e.g. Khulna University)
 - R-scripts for analyzing BFI and socioeconomic data
 - Art work materials (e.g. posters, leaflets, brochures etc.)
- Key documents of BFD have been digitized and made available on the BFIS e-Library
- All documents are referenced and properly archived
- BFIS e-Library contributes to better access to information and knowledge exchange



BFIS e-Library

HOME E-LIBRARY BFIS

BFIS e-Library

The BFIS e-Library is the virtual library of the Bangladesh Forest Department. It provides free access to reports, scientific papers, posters, Rscripts and many other documents.

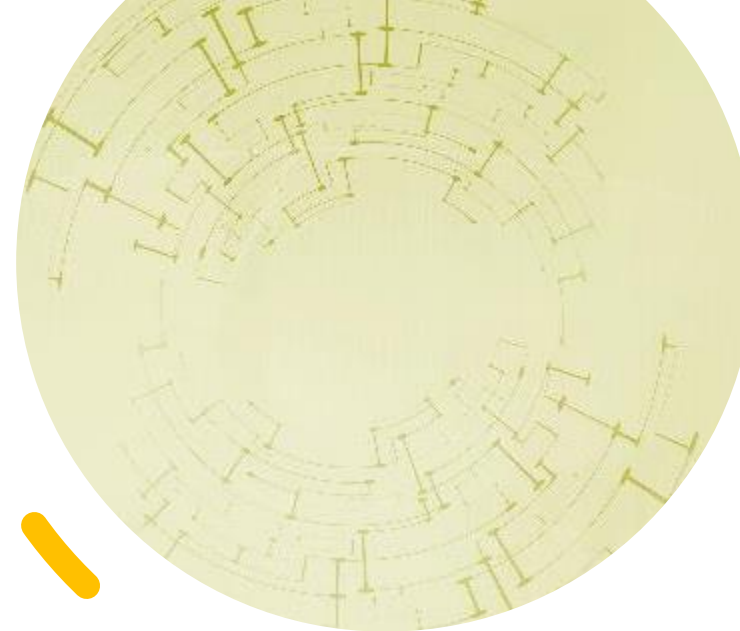
DOCUMENT TYPE

BFIS e-library is a collection of various types of documents. There are following categories of documents have been identified based on the type of documents for easy search.

<h4>Publications</h4> <p>Publications of proceedings, manuals, report, book, scientific paper, and working paper organized in collaboration or by Bangladesh Forest Department.</p>	<h4>Training materials</h4> <p>Training materials is a guidelines prepared for strengthening capacities in forest assessment, monitoring, management, and conservation.</p>	<h4>Maps</h4> <p>A list of maps prepared to illustrate available forest resources, management and conservation activities in Bangladesh.</p>
<h4>University thesis</h4> <p>University thesis published in Bangladesh on forest management and conservation, forest assessment and related topics.</p>	<h4>Rscripts</h4> <p>Rscript prepared for analyzing forest inventory and socio-economic survey data and prepare results.</p>	<h4>Artwork</h4> <p>Leaflet, posters, brochures prepared to rise awareness on Forest Department and related activities.</p>

Conclusion

- BFIS – foundation for forest-related information sharing in Bangladesh
- The experience from Forest Department is entirely documented (proceedings, codes, scripts, videos) and is available to others
- Information shared should take into consideration the current and future needs and users (including academia)
- ICT technological progress offers immense opportunities to manage large amount of data for different audiences
- Information system requires appropriate management capacities and flexibility
- Interoperability between national and international platforms contributes to data, knowledge and experience sharing



Thank You

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