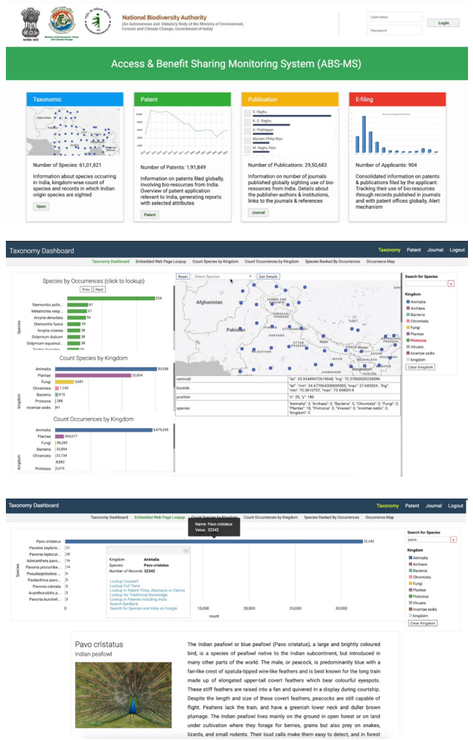
Impact

- Integration of information on patents, scientific literature and taxonomic data form various relevant data sources available across the world into a single standardised format for effective access
- Automatically tracking the activities of bio-resource users. Readily available statistics will help in highlighting trends on use of Indian bio-resources
- Seamless scanning through complex documents on patents and scientific literature to obtain relevant information for monitoring
- Automatic capture of new information published online on the use of Indian bio-resources or traditional knowledge
- The system will generate reports, statistics and alerts mechanism



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Indo-German Biodiversity Programme
Access and Benefit Sharing Partnership project

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Access and Benefit Sharing Monitoring Tool (ABS-MS)

Indo-German Biodiversity Programme

Approach

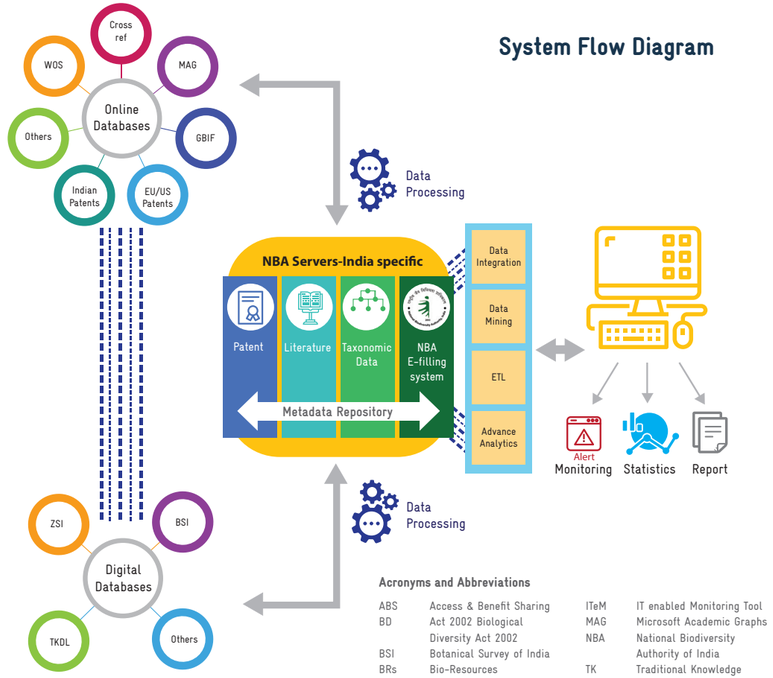
A need to access global information related to individuals and institutions accessing bio-resources from India for research and commercial use has been recognised. Such information is scattered across the internet in dissimilar formats, with patent offices of multiple countries from different publication houses. Manually, it is impossible to refer to all this information to monitor the usage of bio-resources from India.

What is desired is the unification of this information in one standard format for easy access, along with a sophisticated software that would be able to browse this big volume data efficiently.

Background

Currently, in India, most users accessing bio-resources for research and commercial purposes are outside the preview of the National Biodiversity Authority (NBA), leading to **possible** illegal and unsustainable use. In addition, benefits arising out of its utilisation cannot reach the providers due to lack of awareness. Thus, the NBA is seeking to enhance its capacity to monitor the utilisation of Indian bio-resources and associated traditional knowledge with the help of a digital application called as ABS Monitoring System (ABS-MS) under the scope of Biological Diversity Act 2002 and Access and Benefit Sharing Guidelines.

System Flow Diagram



Acronyms and Abbreviations

ABS	Access & Benefit Sharing	ITeM	IT enabled Monitoring Tool
BD	Act 2002 Biological Diversity Act 2002	MAG	Microsoft Academic Graphs
BSI	Botanical Survey of India	NBA	National Biodiversity Authority of India
BRs	Bio-Resources	TK	Traditional Knowledge
CrossRef	Digital Object Identifier Registration Agency	TKDL	Traditional Knowledge Digital Library
ETL	Extract Transform Load	WOS	Web of Science
GBIF	Global Biodiversity Information Facility	ZSI	Zoological Survey of India

Problem Addressed

The ABS-MS tool aims to monitor utilisation of bio-resources in two scenarios:

- Access and utilisation with approval of NBA: Access to bio-resources or associated knowledge from India for commercial utilisation, research/transfer of research result/ applying for any Intellectual Property Right within or outside India, after obtaining prior approval of NBA
- Access and utilisation without approval of NBA: Enable NBA to effectively monitor and perform regulatory actions against any non-compliance within and outside India.

Solution: ABS Monitoring System (ABS-MS)

ABS-MS will be able to access globally available databases on information related to biodiversity in India via scientific publications, patent databases, taxonomic data and information on bio-resource based commercial products. The tool will track information on the use of bio-resources or associated traditional knowledge of Indian origin and flag it to the NBA. It will also convey whether the prior permissions for access were obtained by the user and appropriate actions would be taken in the case of non-compliance.

Software Architecture

ABS-MS would be a cloud-based system, integrating real-time information from globally available data-sources like EU patents, US patents, CrossRef, Web of Science, GBIF, Microsoft Academic Graphs (MAG) etc.. It will filter information specific to India using sophisticated data mining and create its own metadata repository. This data repository will be updated dynamically through Application Programing Interfaces (APIs), ensuring an up-to-date dataset. It will also carry a user friendly front-end providing statistics and references to analyse this information in much efficient manner.