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# BIODIVERSITY CONSERVATION

ISSUES AND PROSPECTS

JUNE, 2023

Editors:

S. I. Bhuyan  
M. Islam  
V. Teronpi  
H. Agarwal  
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**BIODIVERSITY CONSERVATION: ISSUES AND PROSPECTS:** A compilation of articles base on biological researches from various writers, Edited by Dr. S. I. Bhuyan, Dr. M. Islam, Dr. V. Teronpi, Ms. H. Agarwal & Dr. D. Baruah, PDUA Mahavidyalaya, Behali, Biswanath, Assam, India and published by Mahaveer Publication, Dibrugarh-786001.

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**BIODIVERSITY CONSERVATION**  
ISSUES AND PROSPECTS

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## Cellulolytic Activity of Litter Fungi Isolated from Specific Litter of Salcete, Goa

Amisha Shirodker Pednekar\*, Khan Sadiya, Vaz Shannon, Rodrigues Swetha, Naik Prachi, and Sharma Preety

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### Abstract

Wastes are accumulating in the environment at an ever increasing rate. This in turn is resulting in serious pollution which requires attention and appropriate action to minimise its impact on the environment. Cellulases produced by fungi exhibit great potential to digest cellulose. Due to production of large amounts of enzymes like cellulase to culture media, fungi are the chosen source of cellulase for industrial applications. In the current study, an attempt was made to understand the cellulose degrading capability of fungi isolated from litter. Litter samples were collected from some areas of Salcete taluka, Goa. *Aspergillus sp.* and *Rhizopus sp.* isolated showed promising cellulolytic activity. Amongst the two, *Rhizopus sp.* showed better degradation ranging from 63.6% to 95% of 0.1% cellulose in Czapek Dox Agar. Excellent cellulase producing strains if identified isolated and used in waste management, can cause a positive change.

**Keywords:** *Cellulase, enzyme, fungal cellulase, litter.*

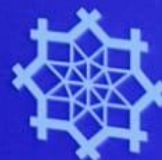
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### Introduction

Cellulose most copious constituent of the plant biomass. Cellulose is extensively present in nature, in cell walls of plants. (7). These cellulases are broken down by enzymes called Cellulases. Cellulases are an assemblage of hydrolytic enzymes. These cellulases are proficient enough to hydrolyse the most copious carbon-based polymer i.e. cellulose. It breaks down cellulose to small sugar constituents comprising subunits of glucose. It is secreted by a broad range of fungi and bacteria (11).

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**Reinventing and Revitalising Libraries :  
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*Papers of the 26<sup>th</sup> National Convention on Knowledge, Library  
and Information Networking (NACLIN 2023) held at  
Goa University, Goa from November 22-24, 2023*

*Edited by*

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**Developing Library Network  
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## Enhancing User Engagement: A Comprehensive Survey of Approaches and Best Practices in Academic College Libraries in Goa

Poonam M. Joshi\*, Manali Acharya\*\* and Sandesh Dessai\*\*\*

Presently, academic libraries are facing many challenges with the advancement of technology. Earlier, the library was the source to provide information. However, with the Internet, information is available openly and easily accessible from anywhere, anytime. Despite the challenges, libraries are trying to keep up with the pace by developing new and innovative strategies for their users. This paper focuses on innovative or best practices in academic libraries which are the quality-enhancing strategies taken up by the library to enhance user engagement by providing library resources and services in the best possible way. It is an approach for continuous learning and improvement for the libraries to become a significant part of the institution.

### 1 Introduction

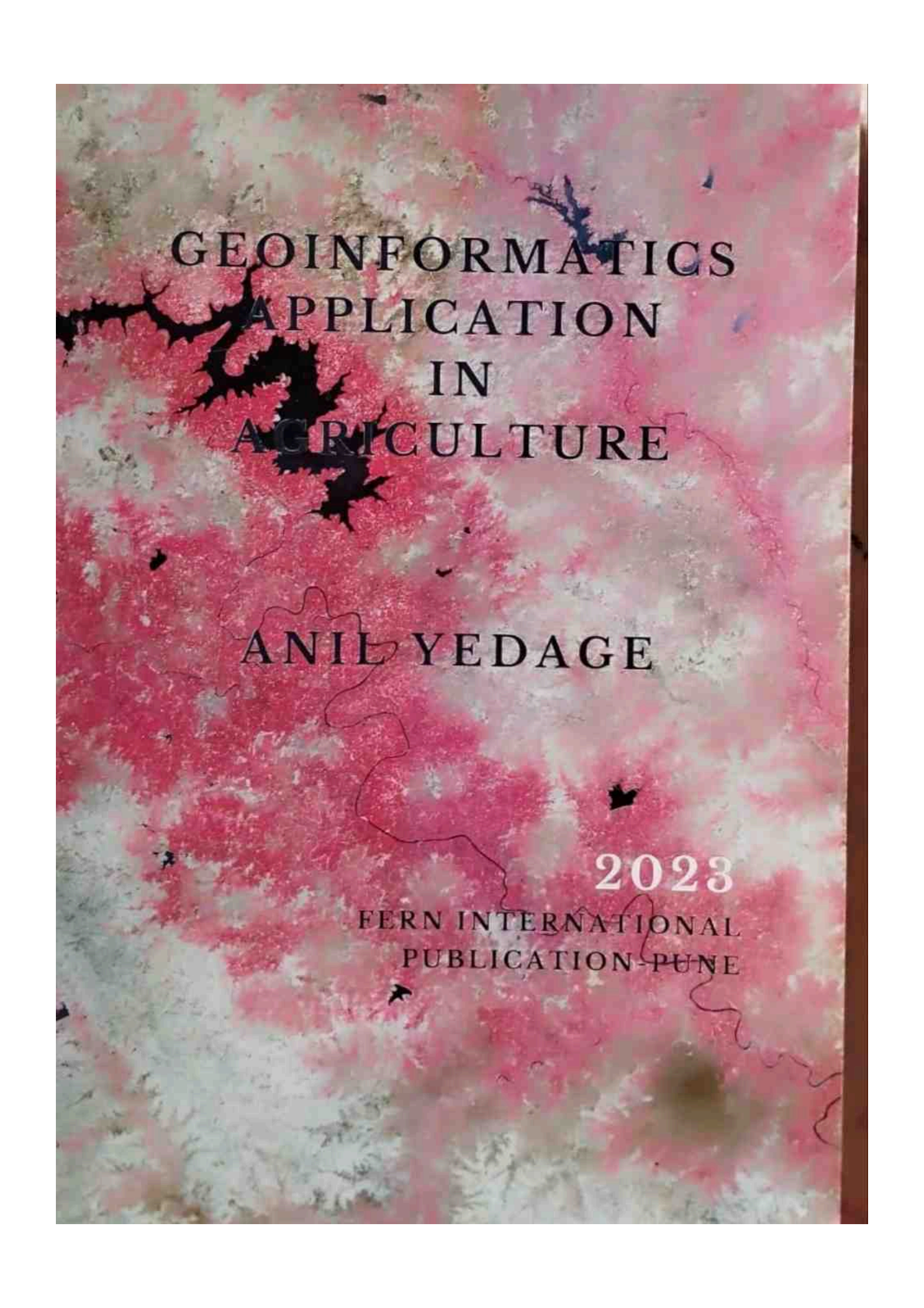
The term 'user' means any patron using the library resources and services. The term user engagement can be defined as the expressive, rational, and communicative connection between a user and library

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**ANIL YEDAGE**

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**ABOUT BOOK:**

This book focuses on Geoinformatics applications in agriculture. It's essential to cover key aspects of the book's content and provide insights into how it contributes to the understanding and implementation of geospatial technologies in the agricultural sector. I am recommending the book to professionals, researchers, or students interested in Geoinformatics and its applications in agriculture.

*Dr. Anil S. Yedage is an enthusiast in research and development in Geography and Geo-Informatic field with more than 14 year's of teaching experience at UG and PG level at the colleges and universities in Maharashtra and Goa state. He has completed 'Master of Arts' in 'Geography' from Shivaji University, Kolhapur, 'Master of Science' in 'Geo-Informatics' from Savitribai Phule Pune University and 'Doctoral' degree in Geo-Informatics in the area of Agriculture development from School of Earth Sciences, Purnyaslok Ahilyadevi Holkar Solapur University, Solapur. He qualified 'SET' examination of Maharashtra and Goa in Geography.*

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Jawak, S.D.; Wankhede, S.F.; Pandit, P.H.; Balakrishna, K. Spatiotemporal Variations of Glacier Surface Facies (GSF) in Svalbard: An example of Midtre Lovénbreen, in Proceedings of the 5th International Electronic Conference on Remote Sensing, 7–21 November 2023, MDPI: Basel, Switzerland, doi:10.3390/ECRS2023-15840

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### Spatiotemporal Variations of Glacier Surface Facies (GSF) in Svalbard: An example of Midtre Lovénbreen

Shridhar D. Jawak<sup>1</sup>, Sagar Filipe Wankhede<sup>2,3</sup>, Prashant H. Pandit<sup>4,5</sup>, Keshava Balakrishna<sup>2</sup>

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**Abstract:**  
Glacier surface facies (GSF) are the visible glaciological regions which can be distinguished and mapped at the end of summer using optical satellite data. GSF maps act as visual metrics of glacier health when assessed independently. Spatial distribution of all accumulation and ablation facies are an important input to 3D mass balance models. This is principally because although the two broad categories of ablation and accumulation can be mapped without division into surface facies, it is the spatiotemporal change of specific GSF that enables better modelling. For example, the progressive increase in area and distribution of melting ice and decrease in area and distribution of glacier ice may signal potential mass loss without significant change in overall area of the ablation zone. As glaciers in Svalbard are warming at a significantly higher rate than the global average, tracking the evolution of GSF is important for predictive assessment for the cryosphere in the Arctic. This will further facilitate robust methods for monitoring GSF on a planetary scale. In this context, we present a local scale spatiotemporal analysis of GSF of Midtre Lovénbreen, Svalbard. We used openly available Landsat 8 OLI and Sentinel 2A imagery from 2017–2022, to track the occurrence and variations in GSF via machine learning (ML). Current results suggest that ablation facies such as melting ice and dirty ice are increasing over time. Sentinel 2A provides finer resolution but is limited by its temporal coverage. Although Landsat is suitable for long-term trend analysis, its coarser resolution can lead to errors such as over/underestimation of smaller patches of facies on relatively smaller glaciers. As the spectral properties of GSF are consistent over time, a robust set of spectra depicting variations in physical appearance of facies may be used to train ML algorithms, thereby improving efficacy. In forthcoming studies, our objective is to expand the temporal scope spanning decades and to trace facies evolution over longer time series. This endeavor seeks to establish a robust GSF inventory for Svalbard.

**Keywords:** Glacier Surface Facies; Machine Learning; Landsat; Sentinel; Arctic

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# R: A BEGINNER'S AIDE

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