

GOVERNMENT COLLEGE

VIDYANAGAR, KASARAGOD, KERALA, 671123

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INSTITUTIONAL BEST PRACTICE I

NAAC 3RD CYCLE ACCREDITATION

ACCESS



7.2: BEST PRACTICES

7.2.1 Describe two best practices successfully implemented by the Institution

PRACTISE I



Advancing Communities through Compassion, Empowerment, and Social Services



CASABAGOD



Title of the Practice:

Advancing Communities through Compassion, Empowerment, and Social Services (ACCESS)

Duration (year of inception-year of discontinuation): 2017 - Present

Objectives:

- Utilise Academic and Research knowledge for the betterment of society.
- Implementation of multidisciplinary subjects for the benefit of society.
- Empowering students by executing social skills.
- Quality Education to all.
- Gender equity.
- Afforestation and preserving Nature.
- Water Management.
- Implementation of various academic skills for the empowerment of society.
- Practical implementation of the curriculum by the faculty and students.
- Implementation of advanced research for the benefit of society.
- Empowerment of Tribal communities through interactive sessions.

Context:

The relevance of quality education is quite significant in a place like Kasaragod, which is one of the least developed districts in Kerala. The importance of achieving the above goals in Kasaragod district, with a few higher education institutions, makes it difficult for the common people to access the benefits of education. In this context, as one of the leading colleges in the district, it is our duty to spread our knowledge for the benefit of our society. Implementing research studies of various disciplines for the tangible benefits for society is the most important and healthy practice of a college.

Classroom-based teaching alone does not aid in the wholesome development of society; executing the syllabus and curriculum for the empowerment of society is equally significant. The development of social skills of the students to be responsible citizens is also part of the education system. The college can spread knowledge by offering quality education at an affordable cost, conducting outreach programs in rural areas, and providing scholarships to deserving students. The college can also collaborate with other organisations to promote education and development in the district. Overall development and empowerment of a whole community regardless of gender, sex, race and caste, is the primary aim of our college.



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Practice:

Our departments of Botany, Zoology, Economics, Physics, Computer Science, Arabic, Kannada, and Geology are actively engaged in societal betterment through interdisciplinary academic research and initiatives. For example, they are working to enhance our natural environment through afforestation projects, bird and butterfly surveys, and resource management.

The Physics, Zoology, and Computer Science departments have used their computational and data science knowledge for the public by deploying a COVID-19 Dashboard for Kerala (https://covid19kerala.info), working with the Kerala State Disaster Management Authority (KSDMA). Pandemic prediction forecasting, and management of the disease in its peak waves were accounted through this Dashboard. Moreover, the project was highlighted and featured by National and International Media including the Nature Journal, British Medical Journal, The Economic Times, The Times of India, and regional media. The writings regarding the project were published in several research articles and book chapters and were featured in a few podcasts. Furthermore, a prestigious project by the name 'PLEASE' was awarded to the college for research and to hold practices in the field of Open Data. An Open Data Lab was opened in the college for this purpose with faculty members from the departments of Physics, Geology, and Economics and other Investigators.

The Geology department is instrumental in groundwater surveys, soil piping, and landslide management efforts. Faculty from the department also act as experts in state and district-level bodies in the fields of land use, mining and geology, groundwater usage, and environmental protection.

The Department of Economics hosts a Social Science Research Interactive Forum, which promotes discourse among faculty, students, research scholars, policymakers, and the public. It serves as a knowledge-sharing forum, encourages the development of research proposals by students, and provides guidance for various projects. These initiatives reflect our commitment to using academic knowledge to improve society and contribute to institutional social responsibility (ISR).

Evidence of Success:

One of the highlights of this year's activities was the award of the PLEASE Project, a multidisciplinary project submitted jointly by the departments of Physics, Geology, and Economics. This award is worth Rs. 1.73 crores and is a result of the outstanding work undertaken by the faculty members for data analysis and prediction during the COVID-19 pandemic in the state. The work involves collaboration in the form of a citizen science collective named CODD-K, and the Kerala State Disaster Management Authority. The project has 5 internal and ten external collaborators, including five from abroad. Three research papers and the publication of an Open Data Dashboard resulted from the work. The project establishes an Open Data Lab in the college and offers internships to five full-time students.

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The college's success is also rooted in its campus, which is home to a well-maintained garden with a variety of valuable plants and trees. The college has 32 acres of land, a portion of which is preserved as a unique biodiversity park. The college also has a garden for medicinal plants, a bamboo forest, and a RET garden that preserves a number of endangered plant species. The Botany department supports public afforestation efforts through the Miyawaki method of planting, which has helped to create a number of forests. Faculty from the Botany department have identified a number of rare plant species. The Zoology department maintains a butterfly park and conducts bird and butterfly surveys every year in the district. Our faculty and students were part of the first-ever bird atlas for Kerala.

In conclusion, the college is a thriving institution with a strong focus on research and innovation. Its commitment to social responsibility is evident in its many initiatives, which are designed to improve the lives of its students, faculty, and the community at large. In addition to its remarkable initiatives in research and innovation, the college proudly celebrates the outstanding recognition achieved by **Mr Akash P**, who was honoured with the prestigious **National Award for being the best NSS volunteer** at the national level. His exemplary service and active involvement in various community-based activities showcase the college's commitment to fostering social responsibility and instilling a sense of civic engagement and altruism among its students. Mr. Akash P.'s achievement stands as a testament to the college's ethos of nurturing not only academic excellence but also responsible and compassionate individuals dedicated to making a positive difference in society.

Case I: Pandemic Response and Research for the Society (Physics, Zoology, Geology, and Economics Departments. College NSS and NCC)













Anonymized datasets from this dashboard project are periodically published and archived under Open Data Commons Attribution License v1.0 (ODC-BY 1.0). You can freely download and reuse them from<u>https://doi.org/10.5281/zenodo.3818096</u>. A peer-reviewed article describing the underlying philosophy and objectives of this dashboard is available at <u>https://doi.org/10.1093/jamia/ocaa203</u>. Appropriate citations of our article and/or dataset on your project, reports, and other publications are highly appreciated. *Contact Us : coddkorg [AT] gmail.com*View our <u>live database</u>, and give us your <u>feedback and comments</u>. Check our <u>FAQ</u> for more information.
Data is sourced from <u>Govt of Kerala Directorate of Health Services (DHS)</u> and various news outlets. Contribute to this project on <u>GitHub</u>. Also, give us your feedback and comments. Maintained by Volunteers at <u>CODD-K Team</u>. Supported by <u>Government College Kasaragod</u>.
This project is maintained and hosted in <u>GitHub</u>. The dataset is managed with <u>Google Sheets. Kerala GeolSON</u> is generously provided by <u>Sajjad Anwar</u>. Map is sponsored by the <u>Mapbox Community team</u>. This project is adapted from <u>https://coid19japan.com/</u> under MIT license, built and maintained by <u>Shane Reustle (Reustle K.K.)</u> and <u>many other contributors</u>. Original concept and design by <u>liahui Zhou</u>.

Figure 4: Details of a COVID-19 data study conducted in partnership with various organisations, with the participation of Government College Kasaragod.





JOURNAL ARTICLE

A citizen science initiative for open data and visualization of COVID-19 outbreak in Kerala, India FREE

Jijo Pulickiyil Ulahannan 🖾, Nikhil Narayanan, Nishad Thalhath, Prem Prabhakaran, Sreekanth Chaliyeduth, Sooraj P Suresh, Musfir Mohammed, E Rajeevan, Sindhu Joseph, Akhil Balakrishnan ... Show more

Author Notes

Journal of the American Medical Informatics Association, Volume 27, Issue 12, December 2020, Pages 1913–1920, https://doi.org/10.1093/jamia/ocaa203 Published: 05 November 2020 Article history 🗸

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Abstract

Objective

India reported its first coronavirus disease 2019 (COVID-19) case in the state of Kerala and an outbreak initiated subsequently. The Department of Health Services, Government of Kerala, initially released daily updates through daily

Figure 6: Published work resulting from the analysis of COVID-19 data in Kerala (Publication link: https://academic.oup.com/jamia/article/27/12/1913/5882022)

Recognition for citizen science data initiative

TIMES NEWS NETWORK

Kochi: A citizen science initiative on using data for the pub-lic good has now been published as a research paper in the United States-based Journal of American Medical Inforof matics Association (Jamia), a premier peer-reviewed jour nal for biomedical and health informatics.

The paper documents the efforts of Collective for Open Data Distribution-Keralam (CODD-K), an open-data collective of Malayalis, spread across the world, who set up a data visualization dashboard for the public to comprehend Covid-19-related information and trends. The developers utilized data gleaned and curated from department of health service bulletins and media reports. The covid19kerala in-



fo dashboard also pioneered many features and functionalities including a local body-level hotspot map. According to developers, the dataset can form the basis for future studies, when supplemented with clinical and epidemiological data from individuals affected

with Covid-19 in Kerala. The lack of such a real-tiata visualization dashbomeda ard for the public with granu-

lar information specific to Ke-rala in Malayalam, initially, was the motivation for the pro-When we started off we Ject. when we started on we had 10 volunteers. The team strength has now gone up to 60," said Jijo P Ulahannan, a CODD-K member

They gained volunteers following a Facebook plea after the daily caseload started going north of 300. "Many people with grounding in library science joined us and there are now two to three volunteers in every district. We gave them training and since they are working systematically we could manage even who en case numbers crossed the 1,000-perday mark," Ulahannan said. CODD-K also organized a

series of webinars on data curation and data science to increase awareness and impro-veskill levels.

Figure 7: News article derived from the data analysis (Report link: T

OLLEGE. KASAR https://timesofindia.indiatimes.com/india/a-year-on-citizen-science-is-powering-covid-19-research/articles

how/79484703.cms)

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Feature Covid-19	: How	Kerala ke	pt itself abo	ve water in Ir	ndia's devastati	ng second wa	ve				
Cite this as: I	<i>BMJ</i> 2021; 374 doi: https://doi.org/10.1136/bmj.n2005 (Published 19 August 2021) Cite this as: <i>BMJ</i> 2021;374:n2005										
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Kamala Thiaga	Kamala Thiagarajan, freelance journalist										
Author affil kamala.thiag	Author affiliations V kamala.thiagarajan@gmail.com										
India is one of the worst hit countries in the pandemic, but one state has fared comparatively well. Kamala Thiagarajan asks what Kerala did differently											
India's first confirmed case of covid-19 was detected in the southern state of Kerala on 27 January 2020. Despite being one of the worst affected states—with over three million recorded cases, a quarter of infections in India— Kerala has the lowest covid death rate in the country at 0.4%, less than a third of the national average of 1.3%. As of 8 August, Kerala had 17 654 recorded deaths.											

Figure 8: Report discussing our research featured in the British Medical Journal (Report link: https://www.bmj.com/content/374/bmj.n2005)





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Figure 10: Mr Akash P. being honoured with the national-level accolade for outstanding NSS volunteer by the esteemed President of India, Smt. Droupadi Murmu. He was selected for this award based on multiple factors, including his significant contributions to the local community throughout the COVID-19 period.



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Case II: Community-Driven Research and Training of Economics Department

The Department of Economics at Government College Kasaragod has been a beacon of academic excellence, actively engaging in educational and research endeavours.

Fostering Research and Academic Discourse

The department's commitment to promoting research extends to the organisation of research paper presentations and discussions as part of our research forum. This platform provides students and scholars from neighbouring institutions with an opportunity to explore the vast landscape of social science research and its myriad possibilities.



Figure 11: Research Forum 2019

Inspiring Future Generations

Our students actively engage in interactive sessions with higher secondary students, to make them aware of the prospects of higher education in Economics at prestigious institutions in India. This outreach effort serves to inspire young minds and encourage them to consider Economics as a viable and rewarding academic path.



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Figure 12: Student Engagement with Government Higher Secondary School, Mangalpady 2020

In conclusion, the Department of Economics at Government College Kasaragod stands as a bastion of educational and research excellence. Through its hosting of the HSSTTP, research forums, and student engagement activities, the department continues to make significant contributions to the field of Economics and education in Kerala.



Figure 13: Tribal Camp of Economics Department 2022



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Higher Secondary Teacher Transformation Programme

The department has been hosting the Higher Secondary School Teachers Transformation Programme (HSSTTP) in Economics, conducted in collaboration with General Education Kerala and SCERT Kerala since 2018. Building on the success of HSSTTP, the Department of Economics has suggested the establishment of a part-time research program tailored for higher secondary school teachers. Presently, the General Education Department has approached our institution for full support in implementing a Comprehensive Training Programme and Research Programme for Higher Secondary Teachers. This collaborative effort will undoubtedly prove beneficial in elevating the quality of economics education in the region.



Figure 14: HSSTP 2018 Program Conducted by the Economics Department

As part of the HSSTTP Program, the department organised a field trip to geographically, culturally, and socially significant locations, including the tribal settlement of Pallikkara. This experience left an indelible mark on the participants, showcasing how education can transform tribal societies into educationally and socially empowered communities.



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Figure 15: HSSTTP 2022 -Panel Discussion on Interdisciplinary Approach in Economics



Figure 16: Interaction with Higher Secondary Teachers-2022



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Case III: Biodiversity and Ecology Preservation (Botany and Zoology Departments)

1. IUCN Conservation Programme of Crinum Malabaricum - A critically endangered species: The students and teachers of the Department of Botany participated in the conservation of Crinum Malabaricum, a critically endangered plant species in the district as a part of the IUCN aquatic plant specialist group.



Figure 15: Participation of Botany Department's Students and Teachers in Crinum Malabaricum Conservation

2. Plant Identification Assistance: The Department of Botany provides assistance to researchers and students outside the college, in the precise identification of plant species for their research/academic activities.





Figure 16: Media coverage on the discovery of rare aquatic species from Kerala

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Rare plant near Ananthapura lake temple in Kasaragod

TIKI RAJWI THIRUVANANTHAPURAM

A team of researchers have reported a new species of perennial woody herb of the genus Lepidagathis from the northern laterite plateaus of Kasaragod district.

Since this rare plant is spotted in the neighbourhood of the Ananthapura lake temple, it has been named *Lepidagathis ananthapuramensis* after the famed temple dedicated to Ananthapadmanabha.

An article on the discovery authored by P. Biju of Government College, Kasaragod; V.S. Anil Kumar and S. Arya of University College, Thiruvananthapuram; E.J. Josekutty, Government Brennen College, Thalassery; and Jomy Augustine, St Thomas College, Pala; has been published in the latest edition of *Phytotaxa*, a journal on plant taxonomy.

The plant has been spot-



Perennial species: Lepidagathis ananthapuramensis is named after the Ananthapura lake temple where it has been spotted.

ted during field explorations, Mr. Anil Kumar said. With this, the number of species of the genus Lepidagathis (family Acanthaceae) found in India has risen to 34. "Plants of this species are locally called 'paramullu'. Lepidagathis ananthapuramensis is endemic to the region," he said.

To date, eight species of the genus Lepidagathis and three varieties have been reported from Kerala, of which four are endemic to the Western Ghats. Lepidagathis ananthapuramensis is closely related to Lepidagathis keralensis reported from Madayippura in Kannur district. Detailed studies have established the former as a hitherto undescribed species, he said.

An erect woody herb that grows to a height of 50-100 cm, *Lepidagathis ananthapuramensis* is characterised by a hairy and branched stem, thick and woody rootstock, hairy leaf veins, and flowers clustered on one side of the inflorescence.

Figure 17: Coverage on the discovery of rare plant species *Lepidagathis ananthapuramensis* (link:<u>https://www.thehindu.com/news/national/kerala/rare-aquatic-plant-found-in-north-kerala/a</u>rticle33368581.ece)

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3. Bambusetum: The Department of Botany started a Bamboo conservation programme in the college and developed a Bambusetum with more than 50 species of Bamboo and more than 100 plants.



Figure 18:Bambusetum hosted in the campus

4. Pachaturuthu: The Department of Botany is maintaining a Pachathuruthu as a part of the Haritha Keralam project of Govt. of Kerala.





5. Biodiversity Park: The students of Botany and teachers maintain a biodiversity park in the college, and provide access to students from neighbouring schools and the public.



Figure 20: The entrance of the biodiversity park

6. Medicinal Garden: The Department of Botany conserves several medicinal plants and several other rare and curious plants in the Green House.





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7. Butterfly Food Plant Nursery: The Department of Botany started a nursery for plants, which can be planted as food plants for the Butterfly garden maintained by the NSS units of the college and distributed to the general public and schools as a part of the conservation of the state butterfly Buddha Peacock.



Figure 22: Butterfly Garden situated within the RET section of the campus.

8. Environmental awareness: The Department of Botany in collaboration with SEEK, an NGO organised a campus walk to create environmental awareness for students. More than 30 students and teachers attended the programme.





Figure 23: Students and faculties of the botany department with Mr. V. C. Balakrishnan





Figure 24: Brochure of campus walk program organised in campus

9. Field visit: The Department of Botany conducted a field visit to the Ariyittapara lateritic plateau, Kasaragod District in association with the Alumni Association, BOTANIKKA. The students and faculty from the college volunteered in the preparation of the Kerala Bird Atlas, an ambitious citizen science project, to map the distribution and abundance of birds in an entire Indian state for the first time. Dr. Ashalatha C. K. from the Kannada Department is actively engaged in the study of birds and observation of butterflies. Under her leadership, various programs are conducted in this field.



Figure 25: A poster of the Bird Atlas in the making of which students of the college are actively involved



Kasaragod I	Bird .	Atlas	About Kerala Bird	Atlas	KASARAGOD
Species count	Dry	Wet	Time period: Survey months:	2015-2020 Jan-Mar (Dry)	BIRD
Total Endemic	222 18	153 15	,	Jul-Sep (Wet)	ATLAS
Threatened Near threatened	1 5	0 3	Sites covered: Total checklists:	4000 ~25000	
SoIB 'High' SoIB 'Moderate'	9 72	6 50	Total species recorded:	382	
			Total bird records: Total volunteers:	~ 3 lakhs >500	
Key Threatened species					

Figure 26: Details of the Kasaragod bird atlas (Link to the Atlas: <u>https://birdcount.in/kerala-bird-atlas/</u>)





Figure 27: Students and faculties with experts during Posadi Gumpe Butterfly Survey 2023

Figure 28: Mr Raju Kidoor explaining about the bird population in the locality



Figure 30: Media coverage about the bird count studies that being done in the campus



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Figure 29: Program Poster for Bird Observation



Case IV: Sustainable Resource Utilisation Consultancy (Geology Department)

Faculty from the department as members of the Kerala State Expert Appraisal Committee (SEAC), conducted many field investigations for the geo-environmental suitability of the proposed project area. The study involves topographical analysis, land vulnerability study, hydrological and hydrogeological setup of the project area and other socio-environmental issues for major projects (B category and above) in Kasaragod, Kannur and Malappuram Districts. Around 60 field inspections were conducted and detailed field inspection reports were submitted to the Kerala State Environmental Impact Assessment Authority (SEIAA).

Involved in technical discussions regarding the issue of environmental clearance for different projects coming under category B and above.

Associated as technical experts in a committee constituted by District Collector Kannur for field inspection with regard to a complaint on soil piping and other issues related to laterite mining in the Kaikkoolithattu area of Kannur District. Submitted a detailed field investigation report.

Field inspections were carried out in the land subsidence area at Madhur village Kasaragod district and submitted a report to the district authority.

Inspections were conducted in various locations of Kasaragod whenever there was a request from the public regarding soil piping issues in the laterite area and other groundwater-related issues.







construction site inspection with the SEAC team at Calicut.

Kannur.

Problems Encountered and Resources Required:

Increased funding and resources for off-campus activities are needed. Another issue is the limited campus time available for staff and students. A curricular change with more field trips and activities could improve the situation.

Here are some additional details about the issues and how a curricular change could help:

- Limited campus time: Staff and students often have limited time to participate in off-campus activities due to their busy schedules. A curricular change that includes more field trips and activities could help to make these activities more accessible to everyone.
- Funding and resources: Off-campus activities can be expensive, so increased funding and resources would be needed to make them more feasible. This funding could be used to cover the costs of transportation, accommodation, and activities.
- A curricular change that includes more field trips and activities could also help to improve student learning and engagement. Field trips can provide students with hands-on experiences that they would not be able to get in the classroom. Activities can help students to develop important skills such as teamwork and problem-solving.
- Overall, a curricular change that includes more field trips and activities could have a positive impact on students' learning and engagement.





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Notes:

The practice can be improved by working with local organisations and other government and non-governmental agencies. A new startup ecosystem facilitation centre could improve the work being done under this practice.



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