

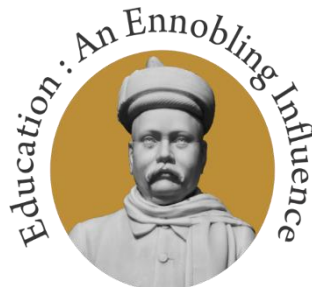


Centre for Sustainable Development

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Report of Activities

Period: January 2023 – May 2023



Gopal Krishna Gokhale

Gokhale Institute of Politics And Economics

Deemed To Be University U/S 3 of The UGC Act, 1956

846, Shivajinagar, Deccan, Pune 411 004.

About the CSD

The Centre for Sustainable Development (CSD) was formed on 1st January 2023. The CSD is a research Centre, received seed grants from two philanthropies – Dr. Ravi Pandit, and Praj Industries Limited. The grants are under a Memorandum of Understanding between Gokhale Institute of Politics and Economics (GIPE) with both the grantees. The MOUs cover a 3-year period, from 1st January 2023 to 31st December 2025.

The Centre is headed by full-time Professor, Dr. Gurudas Nulkar, and is supported by a team of 5 researchers working on the projects.

Besides the two philanthropic seed grants, the Centre seeks grants from industry CSR funds, government grants and fellowships.

As this Centre has recently started, this is a report of activities for a 5-month period.

Objectives and Mandate of the CSD

The CSD is guided by the Vision and Mission of Gokhale Institute of Politics and Economics. The Objective so the Centre are:

1. To create knowledge on Environmental issues
2. To undertake economic valuation of environmental facets
3. To advance research in sustainable energy
4. To assess and inform Climate Policies and protocols

To reach these objectives, the CSD is mandated to undertake the following activities:

1. Research on relevant issues
2. Documentation of best practices
3. Outreach and dissemination
4. Knowledge-sharing workshops and events
5. Policy advocacy
6. Network and collaborate

Thematic Areas of Research

The CSD is currently working in 5 thematic areas:

1. Biomass & Renewable Energy
2. Circular Economy
3. Net-Zero and Climate Resilient Rural Development
4. Urban Challenges
5. Education

Projects in progress in Thematic Areas

In each of the 5 thematic areas, CSD is working on projects as mentioned below:

1. Biomass & Renewable Energy
 - a. 4F Biomass based energy Model for renewable energy transition
Grant RP Funds
Project Lead : Hrushikesh Barve
 - b. Lifecycle analysis of 1G Ethanol from Sugarcane juice
Grant: Praj Funds
Project Lead: Soomrit Chattopadhyay
2. Circular Economy
 - a. Mission City Chakra
Grant: RP Funds
Project Lead: Aditi Deodhar
 - b. Marine Trawler Pollution in Konkan coast
Grant: SL Kirloskar CSR Foundation
Project Lead: Shruti Ghag
3. Net-Zero and Climate Resilient Rural Development
 - a. Mandede Village: Net-Zero and Climate Resilience Project
Grant: Praj Industries
Project Lead: Komal Dhiwar
4. Urban Challenges
 - a. Urban Water
Grant: Kishor Pumps CSR
Project Lead: Soomrit Chattopadhyay
5. Education
 - a. Summer School: Strategizing Sustainable Development of CSR Managers.
2 Day program for CSR Managers.

Details of each Project

4F Biomass based energy Model for renewable energy transition

Funding RP Grant

Status

- 4 projects undergoing active discussions, 12 locations identified
- Pitched to Principal Scientific Advisor, participated in cross-Ministry consultation
- Potential leads 10
- Working with: AKRSP – 6, Anandwan –1, DoLR Satara –1, Nanded – 1, Jalna – 1, Sahyadri Farms – 1, Paani Foundation, Adani Total Gas – captive, Thermax

Way forward

- Strengthen 4-F framework with experience gained
- Cluster implementation at atleast 5 places: (1-DoLR, 2-AKRSP, 1-Anandwan, Experimental with Sahyadri Foundation)

Potential Impact

- 6 clusters – over 5000 acres under biomass fuel, employment, decentralized energy
- Building an Ecosystem for biomass energy : Funding, FPOs, Implementers, Fuel processors, end users

Associations and collaborations

Sustainable Development requires multi-disciplinary capabilities and systems approach. Therefore, the CSD has made several associations and collaborative working arrangements with NGOs, Think Tanks and experts.

1. Janwani: NGO specialising in urban solid-waste management.
2. Pune Knowledge Cluster: Established under the Office of the Principal Scientific Advisor to the PM.
3. Pune International Centre: Think Tank, working in Energy, Environment and Climate Change
4. BAIF: NGO specialising in rural development, agriculture and livelihoods

Publications

In this short period of 6 months, there were two publications in peer reviewed, Scopus indexed Journals. Both are categorised as B Journals by ABDC ranking.

1. Carbon Emissions in Pune Metropolitan Region (PMR) due to Logistics Industries *Australasian Accounting, Business and Finance Journal*, 17(1), 2023, 111-126. doi:[10.14453/aabfj.v17i1.10](https://doi.org/10.14453/aabfj.v17i1.10)
Authors: Bhagwat, Kedar; Gujar, Sameer; Rout, Ankush Kumar; Natholia, Rishabh; Sanjay, S.; Nulkar, Gurudas; Malik, Amitav; Bhagwat, Siddharth; and Pawar, Shalvi
2. Greening of Public Transport in Pune – A Feasibility Study *Australasian Accounting, Business and Finance Journal*, 17(1), 2023, 220-235. doi:[10.14453/aabfj.v17i1.09](https://doi.org/10.14453/aabfj.v17i1.09)
Authors: Sen, Vasundhara; Hajela, Akanksha; Suneeth, G.; Saxena, Sarvesh; and Deore, Ayush, Nulkar, Gurudas.



Gokhale Institute of Politics and Economics

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PUNE - 411 004 (INDIA)

Minutes of the Meeting of the Board of Management (BoM) of the Institute held on June 30, 2023

A meeting of the Board of Management of Gokhale Institute of Politics and Economics was held on Friday, June 30, 2023 at 10.00 a.m. at Conference Room (UCR-1), UGC Building of the Institute. The following members were present in the meeting:

1. Dr. Ajit Ranade, Vice Chancellor (*In Chair*)
2. Dr. Ashishkumar Chauhan, Chancellor's nominee, Member (*online*)
3. Dr. Anand Deshpande, Chancellor's nominee, Member
4. Mr. S. Chockalingam (IAS), Director General, YASHADA, Member
5. Dr. Ashutosh Raravikar, Director, DEPR, RBI, Member
6. Shri Ramakanta Lenka, Nominee, SIS, Member (*online*)
7. Mr. M. B. Deshmukh, Nominee, SIS, Member
8. Dr. Amarendra Sahoo, Nominee, SIS, Member (*online*)
9. Mr. Sanjay Kirloskar, Nominee, SIS, Member
10. Prof. Kakali Mukhopadhyay, Dean, Research and Publications, GIPE, Member (*online*)
11. Prof. Prashant Bansode, Dean of Faculty, GIPE, Member
12. Prof. P. N. Rath, Professor, GIPE, Member
13. Dr. Anurag Asawa, Associate Professor, GIPE, Member
14. Col. Kapil Jodh, Registrar and (non-member) Secretary

Prof. Kailas Thaware, Controller of Examinations, Smt. Ashwini Joglekar, Finance and Accounts Officer, Mr. Shardul Manurkar, OSD to the Vice Chancellor and Smt. Rupali Bawiskar, Chief of Staff, VC Office participated in the meeting as invitees.

Shri Gyanendra Badgaiyan has forwarded his leave of absence.

MINUTES OF MEETING : BoM MEETING – 30 JUNE 2023

1. The meeting commenced at UGC Conference Hall at 10 AM on 30 June 23. The new member to the BoM, Dr. Ashutosh Raravikar, Director, DEPR, RBI, GoM Nominee was welcomed to the BoM.

Agenda 'For Information'

2. Presentation by the Hon Vice Chancellor. The meeting commenced with the customary welcome and the Hon Vice Chancellors presentation to the BoM. The important aspects covered during the presentation were as under:-

Minutes / Board of Management Meeting / dated June 30, 2023

1 of 6



12. **Sunil Bhosale**, Labour Discrimination of Unorganized Female Housemaids, Unicorn Publication Pvt. Ltd., Pune-412028, Edition-First, Year 2022, ISBN: 978-81-931719-2-9. Book published date 18th April 2022

CENTRE FOR SUSTAINABLE DEVELOPMENT (CSD)

1. The Centre for Sustainable Development is a policy research and public advocacy centre at the Gokhale Institute of Politics and Economics. The Centre intends to engage in cutting edge research in the field of sustainable development and policy advocacy CSD will provide a scholarly environment for doctoral and post-doctoral research. The Centre will also undertake applied research with government and industry. The CSD is constituted as an academic centre of excellence and research within the Gokhale Institute of Politics and Economics.

Ongoing Projects

2. **Cities as Urban Forests.** For a large part of human history, our ability to impact the environment was dependent on muscle power. Our rate of destruction did not exceed nature's rate of renewal. Industrial revolution changed that. With the use of fossil fuels, engines, and other innovations, our ability increased manifold. In the nineteenth century when it all began, natural capital seemed never-ending. Natural systems seemed vast enough to accommodate just about anything. Today our cities are drowning in their own waste. The 'Take-Make-Waste' model is certainly not working. We need a sustainable model to make our cities livable for us and the future generations. The good news is we do not need to look far for the blueprint of this change. We already have a system in our natural world that has stood the test of time in terms of sustainability, resource-use, efficiency. It is the forest ecosystem, where there is no concept of waste, all systems are cyclic, de-centralized and connected. Why not simply emulate this successful design and build our cities on the same principles, going forward. Make our cities sustainable and livable by adopting the circular, connected, de-centralized, locally attuned model as it exists in a forest.

3: **Managing Urban Water Demand and Circular Use of Water.**

(a) **Project Objective.** The urban water demand management project focuses on not just understanding user behaviour but also on new innovations available to reduce consumption.

(b) **Overview.** The project is geared towards understanding water demand expectations of commercial, domestic and industrial consumers and hence come up with policy and other practical recommendations for reducing water consumption and incentivizing treated wastewater use.

(c) **Support.** The project is supported by Kishore Pumps. This project is focused on urban water demand management specifically focusing on consumer's including domestic, commercial and industrial. The project will look at the water usage behavior and gauge the willingness to pay for better water saving technology. The



available technologies for reduction in water use and waste water treatment and their respective economic cost benefit analysis will be studied. This project's ultimate goal is to come up with practical and implementable policies and/or guidelines to bring down water consumption and promote use of treated wastewater.

4. **Net Zero and Climate Resilient Village.** The Net-Zero Climate Resilient village Project is a pilot to make Mandede, a village in Mulshi, carbon neutral and resilient to climate change. It is sponsored by Praj Industries who are the pioneers of bio economy, and sustainable aviation fuel in India. The project focuses on achieving holistic development by actively involving all villagers in the process. The project has 6 thematic areas:

- (a) Water Security
- (b) Energy efficiency
- (c) Waste management
- (d) Sustainable agriculture and livelihood
- (e) Public Health
- (f) Quality Education

5. **Getting Degraded Lands into the Bio Economy.** India is facing multiple severe issues on its economic as well as ecological fronts due to Rising fuel imports leading to significant fiscal deficit, Poor contribution of the agricultural sector to India's GDP, Enormous land degradation and desertification and Growing emissions & climate crisis

(a) **Project Overview and Proposed solution.** Considering the issues being faced, a biomass centered green solution is proposed. It aims to achieve sustainable & country-wide ecological, economy & social benefits. Below are its salient features.

- (i) The solution focuses on restoring India's degraded lands (mainly agricultural + forest + common lands).
- (ii) A systematic approach is proposed to identify a large sized cluster of degraded land (of size ~1000 hectares), prepare it appropriately and cultivate it to develop a **4-F model (Fodder – Fuel – Fruits – Forest)** based ecosystem.
- (iii) The 4-F model calls for growing 4 different types of green-covers on the degraded land, in accordance with the local agro-ecological region.
 - o **Fodder:** Growing suitable fodder grasses & post-processing
 - o **Fuel:** Growing biomass suitable for bio-fuel generation (such as briquettes, ethanol, hydrogen, CBG)
 - o **Fruits:** Growing horticulture to yield fruits and NTFPs
 - o **Forest:** Growing multi-strata native forest

6. **Lifecycle Analysis of Biofuels.** A technique called life cycle assessment (LCA) is used to evaluate how items affect the environment from conception to disposal. LCA can be used to evaluate the energetic return on energy invested in biofuels, identify environmental trade-offs, compare the life cycle environmental burdens of products, and identify life cycle phases and processes that are substantial contributors to environmental burdens. LCA is a budgeting procedure that takes into consideration all inputs (raw materials and energy), outputs (products, waste materials, and environmental influencing components like CO₂), and inputs and outputs to complex systems. LCA is a crucial technique for evaluating the sustainability

