Science and Technology Resource Centre
Gondwana University Gadchiroli

A centre of excellence for sustainable value creation, conceived and funded by Rajiv Gandhi Science & Technology Commission (RGSTC), Mumbai, Govt. of Maharashtra







Annual Report 2024-25

"Innovating with Nature,
Empowering with Knowledge and Technology"

Leading with Purpose

Dr. Anil Kakodkar
Chairman, Rajiv Gandhi Science and Technology Commission, Mumbai,Govt. of Maharashtra

The Science & Technology Resource Centre at Gondwana University, Gadchiroli, has been established to nurture a sustainable ecosystem that enhances livelihoods while simultaneously strengthening academics and research in the local context, by leveraging synergies between the two. While this initiative is still a work in progress, meaningful advances have already been made, particularly in the area of bamboo. In principle, collaboration with other institutions that share similar or complementary objectives would further strengthen and accelerate these efforts.

I envision the Science & Technology Resource Centre evolving into a dynamic hub of innovation that catalyzes transformative change in tribal communities through science and technology. STRC holds the promise of delivering need-based, inclusive, and sustainable solutions rooted in local realities. By nurturing grassroots innovation and safeguarding indigenous knowledge systems, the Centre can enable true community empowerment. Sustained engagement, partnerships, and collaboration will be the driving forces in realizing this shared vision.

Dr. Charudutta D. Mayee
Chairman, Governing Body, Science and Technology Resource Centre
Gondwana University, Gadchiroli

Dr. Prashant Bokare
Vice Chancellor,
Gondwana University, Gadchiroli

The Science & Technology Resource Centre (STRC) at Gondwana University, Gadchiroli, provides a strong platform for nurturing a vibrant R&D ecosystem within the University and aspires to emerge as a science and technology nodal centre for the region. With a primary focus on application-oriented science, technology, and innovation aimed at enhancing livelihoods of underserved communities, STRC is clearly on the right path toward becoming a centre of excellence for sustainable value creation in the years ahead. Gondwana University, as the parent institution, will continue to play a pivotal role in supporting and advancing STRC's journey toward achieving this vision.

Governing Body

Dr. Charudutta D. Mayee
Chairman, Governing Body, Science and Technology Resource Centre, Gondwana University, Gadchiroli

Dr. Prashant Bokare
Vice Chancellor, Gondwana University, Gadchiroli

Dr. Shriram Kawale
Pro-Vice Chancellor, Gondwana University, Gadchiroli

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Member Secretary, RGSTC, Mumbai Govt. of Maharashtra

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Former President and Managing Trustee, BAIF, Pune

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IAS Collector and District Magistrate, Gadchiroli

Shri Suhas Gade
IAS CEO, Zilla Parishad, Gadchiroli

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CPO and Head, STRC, Gondwana University, Gadchiroli

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Head, (CTARA), IIT- Bombay

Dr. Veena Kamath
Managing Director and CEO (MKCL), Pune

Dr. Anand Bang Joint Director, SEARCH Foundation Gadchiroli

CA Bhaskar Pathare
Finance and Account Officer, Gondwana University, Gadchiroli

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Dr. Prashant Bokare
Chairman, Program Advisory Board, Science and Technology Resource Centre, Gondwana University, Gadchiroli

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Advisor and Office In-Charge, RGSTC, Nagpur-Office

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Director, Chandrapur Forest Academy, Chandrapur

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IDC-IIT Bombay, Mumbai

Shri Sanjeev Karpe
M.D.–KONBAC Bamboo Products Pvt. Ltd., Sindhudurg

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Director, ICAR / NBSS and LUP, Nagpur

Prof. A. M. Kuthe
Department of Mechanical Engineering, VNIT, Nagpur

Dr. Manish Uttarwar
Director, IIL, Gondwana University Gadchiroli

Shri Ashis Gharai
CPO and Head, STRC, Gondwana University, Gadchiroli

Dr. Nitin Kurkure
Director of Research, MAFSU, Nagpur

Shri Govardhan Singh
Rawat CGM / OIC, Pune

Shri. S. Rameshkumar
CCF, Gadchiroli

Dr. V. K. Kharche
Director of Research, PDKV, Akola

Content

Executive Summary

Shri Ashis Gharai
CPO and Head, STRC,
Gondwana University,
Gadchiroli

On behalf of the Science and Technology Resource Centre (STRC), Gondwana University, Gadchiroli, we are pleased to present the Annual Report for the fiscal year 2024–2025. The year marked a period of transformative progress in aligning grassroots innovation with sustainable development, empowering rural and tribal communities, and advancing scientific research responsive to local needs.

Under the visionary leadership of the Hon'ble Vice-Chancellor, Dr. Prashant Bakare, and with the continued support of the Rajiv Gandhi Science and Technology Commission (RGSTC), STRC strengthened its role as a catalyst for inclusive growth, environmental stewardship, and the dissemination of accessible technologies.

STRC's commitment to harnessing local resources for societal benefit resulted in several landmark achievements. Notably, the launch of the Bamboo Common Facility Centre (CFC) and the Integrated Fish Farming (IFF) project under the District Administration's Manav Vikas Mission established scalable livelihood models in bamboo-based enterprises and aquatic farming systems, directly benefiting marginalized communities in Gadchiroli.

Education, training, and outreach remained central to STRC's mission. The one-year Bamboo Diploma Programme equipped students with specialized skills in bamboo entrepreneurship and sustainable design. In parallel, Vijnyan Bharati's Space on Wheels initiative engaged over 2,200 schoolchildren through immersive and interactive STEM learning experiences. Tribal schools across the district also benefited from the Environmental Education for Sustainability (EES) Programme, fostering ecological awareness and nurturing a generation committed to conservation.

Significant strides were made in advancing environmental sustainability. The establishment of the Gondwan Vanaushadhi Ropvatika, a medicinal plant conservatory at Kharkadi, Dhanora, contributed to biodiversity conservation and the promotion of herbal healthcare practices. Additionally, STRC constructed its first low-cost bamboo polyhouse in Gadchiroli with RGSTC support, enabling farmers to adopt climate-resilient agricultural technologies.

Institutional strengthening and recognition marked another milestone year. STRC was registered as a Training Provider and Centre under the Maharashtra State Skill Development Society (MSSDS), formalizing its capacity to deliver high-impact skill development programmes. Further validation of STRC's innovation ecosystem came with the grant of five design patents for bamboo-based tools and products. The upcoming Traditional Craft Outlet at the Futala Lake Viewing Gallery, Nagpur, under the Gondwana Craft platform, is expected to connect rural artisans with urban markets, celebrating indigenous craftsmanship while enhancing economic opportunities.

Looking ahead, STRC aims to scale its impact by expanding the Bamboo CFC and Integrated Fish Farming models across Gadchiroli and Chandrapur districts. Advocacy for integrating science and technology into rural development policies will continue, alongside deepening collaborations with academic institutions, government agencies, and industry partners. Strategic plans are underway to diversify into forest-based technological innovations, waste-to-resource initiatives, and expanded community outreach programmes to support holistic development.

As STRC moves forward, it remains firmly committed to empowering communities through innovation, sustainability, and equitable access to technology—transforming local challenges into opportunities and building pathways toward a resilient and inclusive future.

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STRC Programs and Initiatives
2024-2025

Aquaculture
& Livelihoods

Bamboo Craft
& Livelihoods

Applicable R&D and
Academic Program
Development

NTFP / Medicinal
Plant & Other
Livlihoods

Development
Communication

Aquaculture & Livelihoods

Aquaculture & Livelihoods

The Aquaculture & Livelihoods vertical at the Science & Technology Resource Centre (STRC), Gondwana University, is mandated to strengthen **the fisheries value chain in Gadchiroli** by improving the production of and access to **good-quality fish seed and feed** for local farmers; promoting **scientific, sustainable aquaculture practices and localized seed production**; mobilizing and institutionalizing communities through **Fish Farmers' Interest Groups (FIGs) and producer collectives** for enterprise development, marketing, and value addition; and supporting **integrated livelihood models** (such as fish–poultry), capacity building, market linkages, and institutional collaborations, notably with MAFSU, to translate technical inputs into durable livelihoods. This mandate guides project selection, field investments (including hatcheries and vending units), training programmes, and market-linkage activities.

Programmes & Key Outcomes in Aquaculture and Livelihood (2024–2025)

1. Development of Organized Fish Seed Production, Culture and Marketing to Ensure Sustainable Livelihood Opportunities in Aquaculture in Gadchiroli District

Jointly Implemented by Maharashtra Animal and Fishery Sciences University (MAFSU), Nagpur and STRC, Gondwana University Gadchiroli

a. Empowering Sustainable Livelihoods in Gadchiroli District

The project spanning from 2019 to 2025 aimed to bolster the fisheries sector in Gadchiroli by mobilizing tribal fish-farmers, enhancing aquaculture practices, and establishing robust market linkages. Through a multi-faceted approach, the project has laid a strong foundation for sustainable growth and improved economic opportunities for the local communities.

b. Project Objectives :

Formation of Tribal Fish Farmers' Interest Groups (FIGs): Mobilizing proactive farmers across Gadchiroli district to foster collaborative growth in fisheries.

Training and Demonstrations: Educating tribal farmers on scientific fish culture practices in ponds and tanks through hands-on demonstrations.

Establishment of Portable Carp Hatcheries: Setting up five portable carp hatcheries to facilitate local fish breeding, seed production, and access to advanced breeding technologies.

Promotion of Fish Marketing and Value Addition: Enhancing market access and value realization for fish products through the provision of cost-effective, portable, and mobile fish sale units.

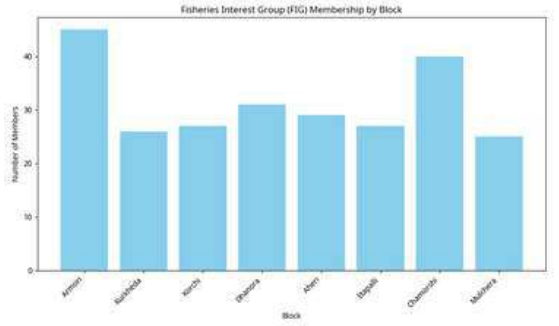
c. Formation of Fisheries Interest Groups (FIGs)

A total of 8 Fisheries Interest Groups (FIGs) were formed in 8 blocks of Gadchiroli district with a membership of 250 members comprising fish farmers, fish sellers, fish seed producers, etc. The FIG members were provided guidance on procurement of feed & feed ingredients, fish seed, induced breeding of carps, fish seed rearing, grow-out fish culture as well as on marketing strategies regularly through Focus Groups Discussions and Workshops.

Block-wise membership to the Fisheries Interest Groups:

FIG Block	Armori	Kurkheda	Korchi	Dhanora	Aheri	Etapalli	Chamorshi	Mulchera
Members	45	26	27	31	29	27	40	25

Total 250



d. Seed Production with Portable Hatcheries

The project successfully installed five FRP Portable Carp Hatcheries at various locations in Gadchiroli district. These hatcheries have been instrumental in enabling local fish seed availability and introducing advanced breeding technologies to tribal farmers. Operators of these hatcheries received comprehensive training on brood fish management, induced breeding, and fish seed rearing.

Between 2022-23 and 2024-25, these installed hatcheries facilitated the production of Indian Major Carps seed. A remarkable 15.00 Lakh fish fingerlings have been distributed from these four sites, significantly boosting local aquaculture. Notably, Mr. Harish Biswas from Chamorshi alone sold 13.00 Lakh fingerlings during July-September 2024.

e. Enhancing Skills through Training and Demonstrations

Extensive training and demonstration programs were conducted to equip farmers with the knowledge and skills required for scientific fish culture. These programs covered a wide range of topics, including water and soil quality management, fish feed management, disease control, harvesting, and marketing. Direct demonstrations were carried out in 24 fish pond sites, guiding farmers through all stages of the culture period.

Key training activities included workshops on scientific fish culture, demonstrations on induced fish breeding and seed production, and capacity-building programs. A significant training program on Induced Fish Breeding was held at the College of Fishery Science, Nagpur, benefiting 42 participants.

Sr. No.	Activities	No. of activities	No. of farmers
1	Workshop on scientific fish culture & organized fish farming	11	441
2	Demonstration on scientific fish culture in farm ponds after stocking	24	24
3	Training programme on Induced Fish Breeding at COFS, Nagpur	1	42
4	Training & Demonstrations on "Induced breeding of Indian Major Carps" at Installed Hatcheries	4	37
5	Demonstrations on Common carp breeding	1	25
6	Buyer and Seller meet and capacity building programmes	1	205
7	Focus Group Discussions	3	55
8	Workshop at Chamorshi on Working on FIG	1	20
9	Guidance to fish farmers through farm visits	15	250
10	Survey on fish production	1	42
Total		62	1141

Workshops and trainings conducted for fish farmers & entrepreneurs

f. Promoting Market Linkages and Value Addition

To ensure sustainable livelihoods, the project focused on promoting live/fresh fish marketing and value-added fish products. Five portable and mobile fish sale units, designed by the College of Fishery Science, Nagpur, were installed at key locations including Armori, Gadchiroli, Aheri, Shriniwaspur, and Chamorshi. These units have facilitated hygienic and efficient fish selling, directly benefiting farmer groups.

g. Fish Producer-Buyers Meet & Capacity Building Program, Gadchiroli

The Science and Technology Resource Centre (STRC), in collaboration with Maharashtra Animal and Fishery Sciences University (MAFSU), has been conducting fisheries and aquaculture extension programmes to enhance the sector in Gadchiroli, Maharashtra. These aim to improve fish seed production, promote scientific aquaculture, and build market linkages.

As part of this initiative, a Fish Producers Buyers Meet & Capacity Building Programme was held at Gondwana University, Gadchiroli, on January 25, 2025. The event saw 185 participants engaging in discussions to strengthen the fishery value chain, including 205 fish farmers and entrepreneurs from eight Fish Farmers Interest Groups and six buyers from Nagpur, Chandrapur,
and Gadchiroli fish markets.

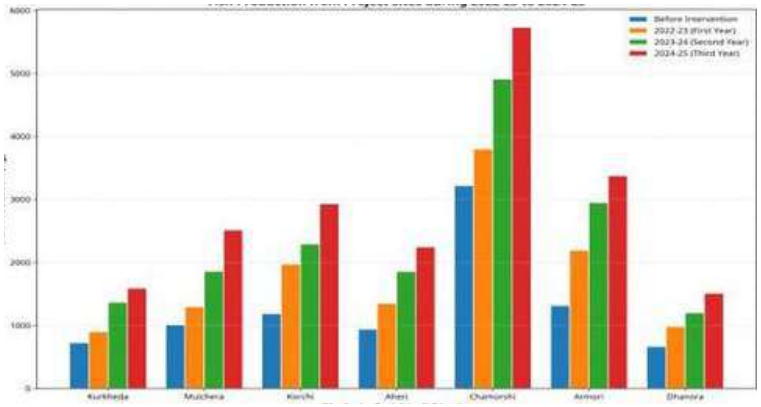
Benefits of Buyer-Seller Meets:

- Direct Sales: Eliminates intermediaries, increasing farmer profits.
- Market Access: Opens new customer bases.
- Price Discovery: Ensures fair and competitive prices.
- Information Exchange: Shares market trends, preferences, and best practices. The meet facilitated collaboration between fish producers from Gadchiroli and wholesalers from Nagpur and Chandrapur.

h. Impact on Fish Production and Revenue Sites

The project has demonstrated a steady growth in fish production from the guided farmer sites. The data below illustrates the increase in fish production across various blocks from 2022-23 to 2024-25, showcasing the effectiveness of scientific fish culture practices introduced by the project.

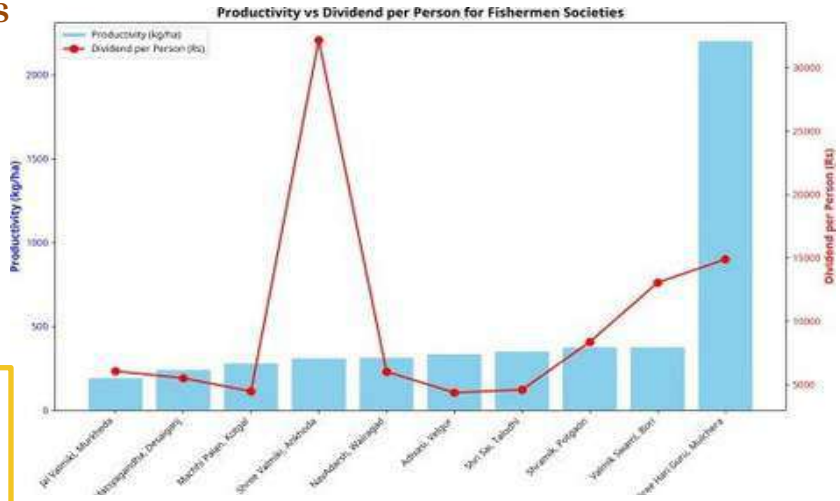
Block	Fish Production Before Intervention (Kg)	Fish Production 2022-23 (Kg)	Fish Production 2023-24 (Kg)	Fish Production 2024-25 (Kg)
Kurkheda	725	900	1,365	1,590
Mulchera	1,010	1,295	1,860	2,515
Korchi	1,185	1,970	2,290	2,930
Aheri	941	1,350	1,855	2,245
Chamorshi	3,220	3,798	4,910	5,730
Armori	1,315	2,190	2,950	3,375
Dhanora	665	980	1,200	1,510



Fish production from project sites during 2022-23 to 2024-25

i. Fish Production and Revenue of Fishermen Societies

Fish production of surveyed open water bodies in the Gadchiroli district was found to be significantly low as compared to pond fish culture, necessitating immediate fisheries management measures such as culture-based capture fisheries, stock enhancement, introduction of cage fish farming etc. through funding from Government Schemes like Pradhan Mantri Matsya Kisan Samrudhhi Sah Yojana in next phase of interventions.



The project has strengthened organized fish seed production, scientific aquaculture practices, and market linkages in Gadchiroli, leading to improved productivity and sustainable livelihoods for tribal fish farmers. Going forward, sustained extension support and focused interventions in open water bodies will be key to scaling impact and ensuring inclusive growth across the fisheries sector.

2.Integrated Fish Farming (Fish + Poultry) for Livelihood Development of Local Communities in Aheri Taluka, Gadchiroli

The Science and Technology Resource Centre (STRC), Gondwana University, Gadchiroli, continues to spearhead **science-driven livelihood enhancement** initiatives across tribal and forest-dependent regions. In 2024–25, STRC implemented a focused Integrated Fish Farming (IFF) project in **Aheri Taluka**, combining aquaculture with backyard poultry as part of a dual-livelihood model. with STRC's mandate to promote science-led, inclusive rural development, this initiative addressed key challenges faced by marginal farmers—mono-income dependency, underutilized water resources, and limited exposure to modern aquaculture and poultry practices.

Supported under the **Manav Vikas Mission (MVM)**, Government of Maharashtra, the project was technically implemented by STRC's field unit in collaboration with Gram Panchayat Medpalli.

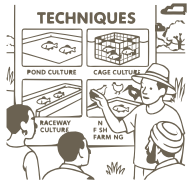
Integrated Model and Approach

The IFF model promotes nutrient cycling between fishponds and poultry units—where poultry droppings enrich pond nutrients, improving water productivity and reducing input costs. This closed-loop system enhances both environmental efficiency and household income potential.

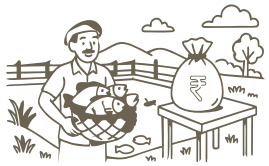
Project Objectives

To promote sustainable, integrated aquaculture poultry systems among smallholder and tribal households.

To facilitate access to critical resources such as fish seed, chicks, and locally constructed poultry sheds.



To strengthen community capacity through structured training, demonstrations, and technical handholding.



To establish a dual-income model enabling round-the-year income through diversified farm outputs.

Key Activities and Implementation Milestones

1. Site Selection and Beneficiary Identification

A total of 20 eligible households from Medpalli and Chandra clusters in Aheri Taluka were selected based on:

- Availability of small ponds or water bodies
- Willingness to adopt integrated models

Socioeconomic vulnerability and replication potential

2. Input Distribution and Infrastructure Support

- Fish Seed: **24,000** quality fingerlings distributed across beneficiary ponds and tanks
- Poultry Inputs:
  - **1,600** vaccinated chicks (≈80 per household)
  - **20 low-cost poultry sheds** constructed using locally available materials, minimizing capital costs

3. Capacity Building and Exposure

A one-day hands-on training workshop was conducted at Medpalli Gram Panchayat, attended by all beneficiaries.

Key sessions facilitated by subject experts included:

- Scientific pond management and water quality monitoring
- Waste-to-feed nutrient recycling
- Poultry care, vaccination, and disease control
- Local marketing and income diversification strategies

4. Regular Monitoring and Technical Support

STRC's field team conducted periodic monitoring visits to:

- Guide farmers on pond maintenance, feeding, and biosecurity
- Track fish growth and poultry health parameters
- Ensure nutrient cycling through the application of poultry
- waste as pond fertilizer

Project Outcomes and Impact
Key Beneficiary-Level Achievements

Livelihood and Economic Impact

Dual-source income: Beneficiaries reported earnings from both fish harvest (expected in 4–6 months) and poultry (within 2–3 months), ensuring year-round revenue.

Input optimization: Poultry droppings used as organic feed have reduced feed costs and enhanced fish growth rates.

Farmer feedback: Positive response toward model replicability, especially due to low input cost and technical ease.

Direct Beneficiaries	Fish Seed Distributed	Poultry Sheds Constructed
20 households	24,000 fingerlings	20 units
Chicks Distributed	**Training Sessions Conducted**	**Revenue Streams Initiated**
1,600 (vaccinated)	2 cluster-level workshops	Fish and poultry sales

The Integrated Fish Farming initiative demonstrates STRC's commitment to science-based livelihood innovation. By integrating aquaculture with backyard poultry, the model ensures sustainable resource use, diversified income streams, and improved resilience among smallholder farmers in Gadchiroli's tribal landscape.

Case Study

Transforming Aquaculture in Shrinivaspur – Shri Harish Biswas's Journey with STRC Support

Background

Shrinivaspur, a small village in the Chamorshi block of Gadchiroli district, is home to Harish Biswas, a progressive farmer cultivating 20 acres exclusively under fish production. Despite operating at scale, his enterprise faced persistent constraints due to dependence on distant fish seed suppliers, high input and transportation costs, and low post-stocking survival rates, which collectively reduced profitability.

For several years, Harish sourced fish seed from Kolkata and Chhattisgarh, often travelling 80–90 km, leading to increased expenses and seed stress during transport. Limited local demand further restricted his outreach, enabling him to supply seed to only 2–3 nearby farmers, with his annual income stagnating at around ₹5 lakh.

As he recalls:

पहले हम कोलकाता और छत्तीसगढ से सीड बुलाते थे। जब तालाब छोड़ते थे, तो कुछ हि मछलिया जिंदा रेह पाती थी इस वजह से आमदनी भी कम हो पाती थी।

The STRC Intervention

In 2023, the Science & Technology Resource Centre (STRC), Gondwana University, recognized Harish's potential and selected him for a pilot aquaculture intervention. Based on his available infrastructure, technical experience, and openness to innovation, STRC supported the installation of a portable carp hatchery on his farm. Harish was also trained extensively in broodstock management, breeding techniques, water quality monitoring, and hatchery operations.

As shared by the STRC team:

"We were looking for a farmer with technical understanding, adequate land, and a willingness to innovate. Harish met all these criteria, making him an ideal partner for the installation of the portable carp hatchery."

The Impact

Annual income rose from ₹5 lakh to an estimated ₹50–60 lakh.

The intervention led to immediate and wide-ranging improvements. Harish started producing high-quality, locally adapted fish seed on his own farm, eliminating dependence on long-distance suppliers. Improved management practices significantly reduced seed mortality while enhancing overall quality. His reach expanded rapidly—from supplying just 2–3 farmers to serving most fish farmers in the surrounding area, including neighboring villages.

As production efficiency improved and demand increased, Harish's annual income rose substantially, from about ₹5 lakh to an estimated ₹50–60 lakh.

As Harish shares:

Hatchery आने क बाद हमने नई Technology सीखी I STRC के द्वारा Technology और प्रशिक्षण दिया गया , अब हमारे मत्स्य बीज यहि पे तयार होते है. हमारा अधिकतर खर्च बच जाता है और बीज भी अच्छे मिलते है

20 Acres 5→ 50-60 Lakh

This intervention generated ripple effects beyond Harish's farm. Local farmers now have access to affordable, high-quality seed closer to home, improving overall productivity in the region's aquaculture sector. The project has contributed to increased rural incomes, reduced risk, and strengthened the local aquaculture value chain.

Conclusion

Harish Biswas's journey illustrates the power of targeted scientific intervention, skill-building, and localized technology deployment. With support from STRC, a single farmer has transformed into a regional seed producer, catalyzing aquaculture growth in Chamorshi and beyond. This case exemplifies STRC's vision of empowering communities through science-based, scalable rural solutions

Student Internship in Aquaculture :

Capacity Building in Aquaculture for Fisheries Students

As part of its commitment to capacity building and academia–field integration, the Science and Technology Resource Centre (STRC), Gondwana University, collaborated with Maharashtra Animal and Fishery Sciences University (MAFSU), Nagpur, to host a 45-day internship program for Bachelor of Fisheries Science (B.F.Sc.) students. Commencing on December 20, 2024, the internship aimed to offer hands-on exposure to sustainable aquaculture practices and integrated fish farming models promoted by STRC in tribal regions. Six selected students engaged in intensive learning through field visits, pond and hatchery management, feed formulation, and interactions with local aquaculture entrepreneurs and SHGs.

Throughout the internship, students were closely engaged in STRC's ongoing projects, gaining hands-on experience in data collection, project documentation, and water quality monitoring. The programme exposed them to community-based aquaculture systems and helped them understand the socio-technical aspects of rural livelihood development.

The initiative strengthened students' technical competencies while building their capacity to contribute meaningfully to sustainable aquaculture practices in Maharashtra. It also demonstrated an effective model of academic–practitioner collaboration, enhancing the practical relevance of fisheries education through real-world engagement.

From Ponds to Prosperity: The Next Phase of Aquaculture Growth

Fish Farmers Producer Organizations (FPOs)

Goal: *Strengthen collective enterprise models.*

Key Focus:

- *Form district-level Fish FPOs for aggregation and market access*
- *Facilitate access to credit, seed, and equipment*
- *Promote cooperative business models*

Aqua Facilitation Centres (AFCs)

Goal: *Create one-stop resource and service hubs.*

Key Focus:

- *Seed, feed, and water-quality labs*
- *Disease diagnostics & extension support*
- *Digital advisories and local market linkages*

Aqua Crops as Livelihood Options

Goal: *Integrate water-based crops into local livelihoods.*

Key Focus:

- *Pilot Singhada, Makhana, Lotus and aquatic vegetables in community ponds*
- *Promote multi-layer pond systems (fish + crops + ducks/poultry)*
- *Empower women and SHGs in aqua crop production and marketing*

Market and Value Chain Development

Goal: *Build sustainable post-harvest and market systems.*

Key Focus:

- *Local collection & cold chain facilities*
- *Mobile fish sale units*
- *Brand development and packaging innovations*

Research, Innovation & Knowledge Exchange

Goal: *Promote science-led aquaculture growth.*

Key Focus:

On-field research and trials on local species
Climate-resilient and low-cost pond models
Academic–community partnerships for knowledge sharing

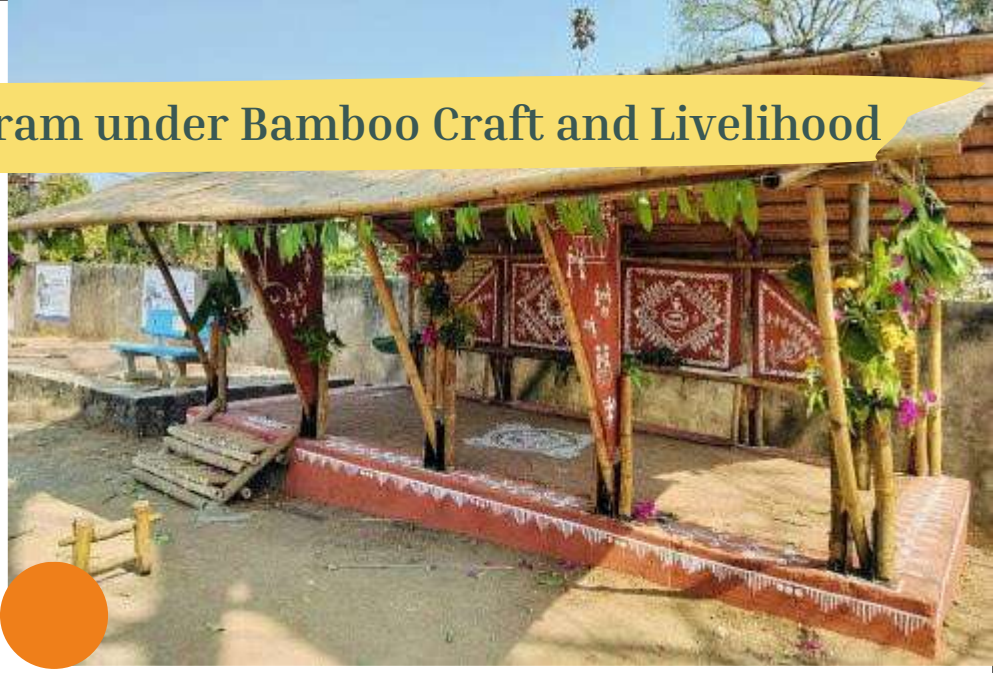
Bamboo Craft & Livelihoods

Bamboo Craft & Livelihoods

Mandate:

The Vertical aims to foster a sustainable and inclusive bamboo-based economy by strengthening local craftsmanship and entrepreneurship. It seeks to build a decentralized, artisan-centric ecosystem that empowers local artisans and enhances rural livelihood opportunities, while developing specialized skills in structural bamboo applications, design innovation, and product diversification. The mandate also includes designing and promoting low-cost craft tools and appropriate technologies to improve productivity and quality, encouraging innovation in utility and lifestyle products that align traditional skills with contemporary market needs, and promoting large-scale bamboo plantation and responsible resource management to ensure a sustainable raw material base and ecological balance.

Training and Capacity Building Program under Bamboo Craft and Livelihood



Bamboo Diploma Program (15 Day Bamboo Construction and Training Program)

In one year diploma program students were offered internship exposure for a 15-day Bamboo Construction Training Program, conducted by the Bamboo Research and Training Centre (BRTC), Chichpalli, which was an intensive, hands-on initiative designed to immerse students in the real-world application of sustainable construction techniques using bamboo.

The programme was offered under the Internship Exposure Initiative of the Science and Technology Resource Centre (STRC), Gadchiroli, with the objective of developing skilled human resources in eco-friendly architecture and rural innovation. The training strengthened technical competencies while positioning bamboo as a viable material for sustainable development, livelihood generation, and rural entrepreneurship.

A key component of the programme was the design and construction of a bamboo outlet for the Gram Panchayat Office at Chichpalli. This activity enabled students to apply their learning in a real community setting. The live construction process functioned as an open classroom, exposing participants to all stages of construction—from site layout and foundation work to structural assembly and finishing.

The training provided hands-on understanding of bamboo species such as Katang and Manvel, their material properties, and appropriate treatment methods, including cold soaking, to enhance durability and longevity. Students developed skills in reading technical drawings, preparing hand-scale models, and executing on-site construction. They worked with key structural elements such as columns, beams, rafters, purlins, and bracing, and practiced essential bamboo joinery techniques including butt joints, half-lap joints, and J-hook joints.

Roofing was executed using a combination of GI sheets for durability, polycarbonate sheets for natural lighting, and bamboo mats to enhance local aesthetics and thermal comfort. An important learning component was exposure to traditional construction practices, where students actively participated in constructing wattle-and-daub walls using various mixes of soil and rice husk (konda), gaining insight into indigenous building techniques and material behavior.

Students experimented with different soil compositions and binding materials, gradually finalizing the most suitable mix for achieving structural stability and thermal comfort. The concluding stages of construction focused on aesthetic and surface treatments, including Warli painting—an indigenous tribal art form of the region—and Geru finishing using red ochre, complemented with natural varnishes for durability and finish. These interventions provided students with practical exposure to indigenous knowledge systems and demonstrated their relevance in contemporary, sustainable design practices.

Beyond technical skill-building, the training underscored bamboo's potential as a sustainable construction material capable of supporting green livelihoods and enterprise development. It fostered awareness of climate-responsive design and community-oriented construction approaches. On the penultimate day of the programme, Shri Ashis Gharai, Chief Programme Officer and Head, STRC, visited the site to interact with the participants, review the progress, and encourage continued engagement in bamboo-based entrepreneurship and eco-friendly practices.

Through such initiatives, STRC continues to play a significant role in strengthening youth capacities for sustainable rural development. The programme effectively integrated theory with hands-on practice, and tradition with innovation, enabling students to explore bamboo's potential as both a construction material and a catalyst for socio-economic transformation.

Bamboo for Green Economy

Report on the 2nd Round Table Conference on Bamboo for Green Economy

***Date** : January 28, 2025 **Venue :** Bharatiya Agro Industries Foundation (BIAF), Pune*

***Organised by** : STRC in collaboration with Rajiv Gandhi Science and Technology Commission (RGSTC), Mumbai, Govt. of Maharashtra*

On Tuesday, 28 January 2025, a high-level consultation meeting was held at BAIF, Pune, to present and deliberate on independent proposals and the consolidated Detailed Project Report (DPR) titled “Bamboo for a Green Economy.” The meeting was convened under the esteemed chairmanship of Padma Vibhushan Dr. Anil Kakodkar, Chairman, Rajiv Gandhi Science & Technology Commission (RGSTC), Mumbai, Government of Maharashtra.

The deliberations brought together a diverse group of stakeholders, including representatives from RGSTC, Task Force members, thematic experts, heads of anchor institutions, Principal Investigators of individual and consortium-based projects, and subject-matter resource persons. The objective of the meeting was to critically review, refine, and consolidate the proposed interventions as part of a broader mission to position bamboo as a strategic resource for fostering a green, resilient, and inclusive economy.

As part of the proceedings, Shri Ashis Gharai, Chief Programme Officer & Head, Science and Technology Resource Centre (STRC), Gondwana University, along with Shri Swapnil Girade, Scientific Officer, STRC, presented their institution’s proposal integrated within the DPR. Titled “Strengthening Bamboo-Based Business Ecosystem in Community Forest Rights (CFR) Areas of Gadchiroli through Optimized Resource Management and Technology Integration.

The proposal reflects a deeply contextual, need-based approach grounded in the socio-ecological realities of tribal and forest-dwelling communities in the region.

With an estimated budget outlay of INR 1.5 crore, the proposal is envisaged as a transformative intervention that aligns ecological sustainability with rural economic development. It aims to demonstrate a replicable model for other forested regions by showcasing how localized value addition, institutional strengthening, and appropriate technology integration can catalyze a robust bamboo-based green economy.

This proposal marks a significant milestone in STRC's ongoing efforts to strengthen bamboo as a strategic rural asset, and its anticipated approval will play a catalytic role in empowering local communities, improving forest-based livelihoods, and reinforcing Maharashtra's leadership in sustainable natural resource management.

Assessment of Potential for Bamboo-Based Business Ecosystem in Community Forest Rights (CFR) Areas of Gadchiroli

Following the successful completion of two high-level Roundtable Conferences on 'Bamboo for a Green Economy', organized jointly by Science and Technology Resource Centre (STRC), Gondwana University, Gadchiroli and BAIF Development Research Foundation, Pune in January and May 2024 respectively, a dedicated Bamboo Task Force has been constituted by the Rajiv Gandhi Science & Technology Commission (RGSTC), Mumbai, with the mandate to design a Detailed Project Report (DPR) for a comprehensive State-level Network Program.

The inaugural meeting of the Task Force was convened online on September 26, 2024, wherein key objectives, expectations, and a roadmap for DPR development were outlined. Discussions included thematic focus areas such as community-based bamboo enterprise models, ecosystem restoration, carbon economy, bamboo-based product innovation, and market linkages.

As part of the DPR formulation process, the External Resource Person (ERP), Shri Abhay Gandhe, undertook a technical and consultative field visit to the Science and Technology Resource Centre (STRC), Gondwana University, Gadchiroli, on 21–22 October 2024. The visit aimed to initiate focused deliberations on a pre-proposal framework for bamboo-based interventions led by STRC in collaboration with its community network. The engagement included in-depth institutional discussions with STRC leadership and technical faculty to align the Centre's bamboo initiative with the broader objectives of the Bamboo Task Force, covering the design of decentralized bamboo value-chain models, Community Forest Resource (CFR) ownership-based enterprise frameworks, and potential integration with bio-economy and regenerative agriculture strategies. Field-level consultations were conducted in selected CFR-recognized Gram Sabhas in Gadchiroli district, involving interactions with local bamboo harvesters and artisans, mapping of traditional bamboo knowledge systems, assessment of capacity-building needs, and evaluation of readiness for entrepreneurship incubation, cluster development, and access to working capital. The visit concluded with collaborative working sessions to finalize the technical perspective plan, activity-based budget, and outcomes framework, identifying key thematic components—research, enterprise incubation, design, and infrastructure—along with clearly defined institution–community roles, strategic partnerships, and requisite enabling policy support at the state level.

Bamboo Craft Workshop

15-Day Bamboo Craft Workshop at District Jail, Gadchiroli (March 2025)

Organised by: Science and Technology Resource Centre, Gondwana University

Supported by: District Skill Development, Employment & Entrepreneurship Guidance Centre, Gadchiroli

Target Group: Inmates serving
Duration: 15 Days

Participants Trained: 31 inmates
Venue: District Jail, Gadchiroli

The workshop was designed as a capacity-building initiative aimed at imparting vocational skills in traditional bamboo craftsmanship to incarcerated individuals. The program aligned with the broader goal of rehabilitative correctional education by fostering employability, entrepreneurship readiness, and social reintegration through sustainable livelihood training.

The programme was designed with a structured blend of technical training and intensive hands-on learning, covering bamboo material identification, primary processing, basic joinery techniques, traditional and contemporary product design, and finishing and preservation methods. Participants engaged in individual and group-based practical assignments focused on basketry, utility products, and small-scale lifestyle items, ensuring effective skill transfer. As a result, 31 inmates developed livelihood-ready bamboo craft skills to support their social and economic reintegration, with each participant gaining hands-on proficiency in producing at least two bamboo products. The jail premises were successfully adapted into a temporary craft skill learning space, demonstrating optimal infrastructure utilization. Institutionally, the initiative highlighted the role of bamboo craft as a reformative tool that integrates culture, tradition, and skill-based learning, while also establishing STRC's capability in implementing community-oriented and correctional skill development programmes and strengthening convergence between prison reform, rural skill development, and sustainable livelihood promotion.

STRC Engages With Traditional Bamboo Artisans of Bhandara and Lakhandur

On 17 October 2024, the Science and Technology Resource Centre (STRC), Gondwana University, conducted a strategic field engagement with traditional bamboo artisans from the Burud community across two prominent bamboo clusters—Lakhandur (Bhandara block) and Shankarpur (Gadchiroli block). The objective of this outreach was to assess the feasibility of expanding STRC's community-based bamboo entrepreneurship model, which is currently being implemented successfully in Maldugi, Gadchiroli district.

During the field visit, the STRC team engaged with more than 40 artisans through focused interactions and group discussions. These engagements aimed to understand existing skill sets, evaluate the livelihood potential of bamboo craft, and capture the aspirations and challenges faced by the artisan community. The discussions revealed that the artisans possess strong traditional knowledge and craftsmanship in bamboo weaving and product-making, largely passed down through generations.

Despite this rich skill base, the community continues to face structural challenges, including limited access to improved tools and technologies, minimal design innovation, and the absence of organized market linkages. Encouragingly, there was a strong willingness among artisans—particularly the younger generation—to upgrade skills, adopt improved production practices, and access wider markets for bamboo-based products. In response to these findings, STRC has outlined a future action plan to onboard artisan groups from selected villages into its formal skilling and enterprise development ecosystem.

The proposed approach includes integrating artisans into STRC's ongoing training, design development, and production programmes to enable structured capacity building and diversified product development.

The plan also envisages replicating the Maldugi model by establishing decentralized bamboo processing units and promoting household- and cluster-level micro-enterprises. Additionally, design-led interventions and market development strategies—such as participation in exhibitions, access to organized retail platforms, and integration with digital marketplaces—will be introduced to enhance income opportunities and support long-term economic resilience for the artisan community.

Installation of Gondwana Craft Display Units at Office of the Divisional Commissioner, Nagpur and District Collectorate, Nagpur

On 4 February 2025, Gondwana Craft display units were formally installed at two prominent administrative locations—the Office of the Divisional Commissioner, Nagpur, and the District Collectorate, Nagpur. These curated display units are designed to showcase the rich and diverse tribal craftsmanship of the Gadchiroli and Chandrapur districts. The collection includes bamboo crafts, Dhokra metalwork, Gond paintings, and other traditional handmade products developed by tribal artisan communities.

The display units have been thoughtfully designed as interactive and user-friendly platforms. Each unit features a digital product catalogue, a QR-enabled payment system, and an integrated information interface that allows visitors to explore artisan profiles, place customised orders, and directly purchase products. This technology-enabled approach enhances transparency, accessibility, and ease of engagement for both artisans and consumers.

This initiative is part of a broader strategic effort led by the Science and Technology Resource Centre (STRC), Gondwana University, to strengthen market visibility, institutional recognition, and demand linkages for tribal artisans under the Gondwana Craft brand. By situating these display units within high-footfall government offices, the intervention enables wider outreach among government officials, institutional stakeholders, and the general public, thereby creating new market opportunities and livelihood avenues for artisan communities across the region.

Building on this momentum, STRC is actively planning to scale this model by establishing dedicated Gondwana Craft outlets at other key urban and institutional locations. This initiative not only contributes to cultural preservation and economic empowerment but also positions tribal craftsmanship as a symbol of local innovation, responsible production, and inclusive development within formal governance spaces.

NTFP/ Medicinal Plants & Other Livelihoods

Non-Timber Forest Produce NTFPs/ Medicinal Plants & Other Livelihoods

Mandate:

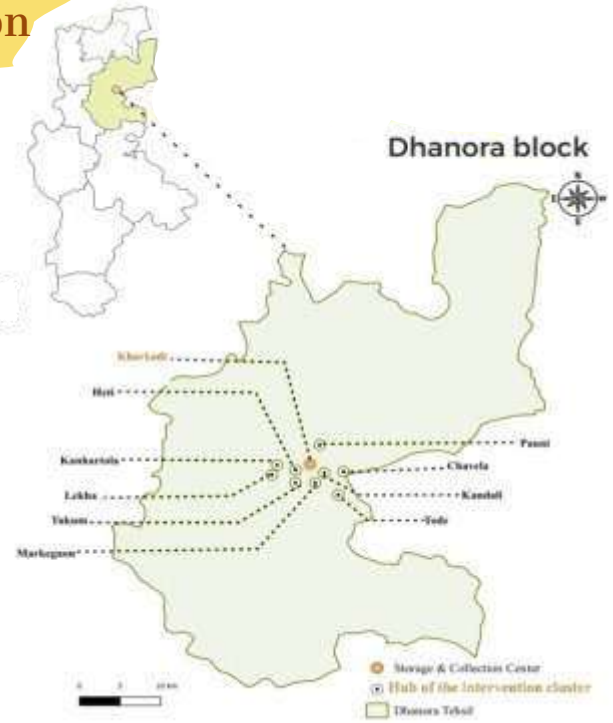
The Vertical aims to strengthen forest-based livelihoods through the sustainable use of natural resources and community-level value addition. It focuses on promoting forest conservation and Agro-ecological practices that enhance local biodiversity and ecological resilience, while encouraging community-led enterprises around Non-Timber Forest Produce (NTFPs) for sustainable income generation and inclusive growth. The initiative also facilitates the adoption of low-cost mechanization and appropriate technologies to improve productivity and reduce drudgery in forest and farm-based activities. In parallel, it seeks to document, conserve, and scientifically validate indigenous medicinal knowledge through active community participation, while supporting traditional healers and strengthening local healing practices through structured platforms and targeted capacity-building interventions.

Primary Processing of NTFPs and Streamlining Collection

The Primary Processing and Collection Centre (PPC) at Kharkadi (Dhanora Block) is a flagship initiative under the Non-Timber Forest Produce (NTFP) and Livelihoods vertical of the Science and Technology Resource Centre (STRC), Gondwana University. The project has been conceptualized to strengthen the NTFP value chain in the forest-dependent regions of Gadchiroli district by enabling localized primary processing, improving market access, and fostering community-led enterprise development.

The initiative is grounded in the recognition that Gadchiroli's forests are rich in economically valuable NTFP species, including Mahua (*Madhuca longifolia*), Tamarind (Tamarindus indica), Charoli (*Buchanania lanzan*), Honey, and Kusum seed (*Schleichera oleosa*). Despite this abundance, the economic potential of these resources remains largely underutilized due to *unorganized* collection practices, the absence of processing and storage facilities close to collection sites, and weak or fragmented market linkages.

The PPC model is designed to directly address these structural gaps by integrating infrastructure development, community capacity building, and market facilitation. Together, these components create an end-to-end ecosystem for efficient, sustainable, and community-owned NTFP management.



Project Objectives

1. The key objectives of the Primary Processing and Collection Centre Project are to:
2. Promote scientific collection practices and sustainable harvesting of Minor Forest Produce (MFPs) among primary collectors.
3. Facilitate decentralized value addition, storage, and primary processing of NTFPs through locally established facilities.
4. Strengthen market access and develop business linkages for NTFP-based enterprises.
5. Generate sustainable livelihood and income opportunities through community participation and institutional capacity building.
6. Establish a scalable and replicable model for community-based NTFP cluster development in Gadchiroli district.

Methodology

The project followed a phased, data-driven methodology:

	Major Activities	Time Frame	Outputs
Phase I	Infrastructure renovation, fund transfer to farmer group	Apr–Jun 2024	80% of repair works completed
Phase II	Community mobilization, seed money allocation, procurement of tools	Jul–Sep 2024	402 beneficiaries mobilized; INR 4.00 lakh allocated
Phase III	Collection, processing, and training	Oct–Dec 2024	Active collection from 29 villages
Phase IV	Cluster expansion and market linkage planning	Jan–Mar 2025	New cluster identification in Godalwahi (7 villages)

Data was gathered through field monitoring, beneficiary interviews, and transaction logs maintained by the registered farmer group managing the PPC operations.

Progress Overview

a. Infrastructure Development

An allocation of INR 1.50 lakh was made for the repair and upgradation of the Primary Processing and Collection Centre (PPC) infrastructure. Of this amount, INR 1.23 lakh was transferred to the registered farmer group for execution of the works.
The major infrastructure improvements completed under this support include:

- Restoration of the main processing hall and the storage warehouse.
- Upgradation of drying yards and weighing stations.
- Establishment of a dedicated collection area for bulk handling of produce.

Although minor delays were encountered due to extended monsoon conditions, all planned works have been successfully completed. The facility is now fully functional and is being operationally managed by the farmer group.

b. Financial Support – Seed Money Allocation

A seed fund of INR 4.00 lakh was transferred to the Farmer Group's account to facilitate procurement and aggregation of forest produce. As of December 2024, INR 2.72 lakh was utilized for purchasing NTFPs from local collectors, ensuring liquidity in the collection process.

c. Community Engagement ·A total of 557 collectors across 29 villages participated in the collection and sale of NTFPs. STRC supported awareness drives through banners, posters, and cluster-level meetings, emphasizing sustainable harvesting methods.

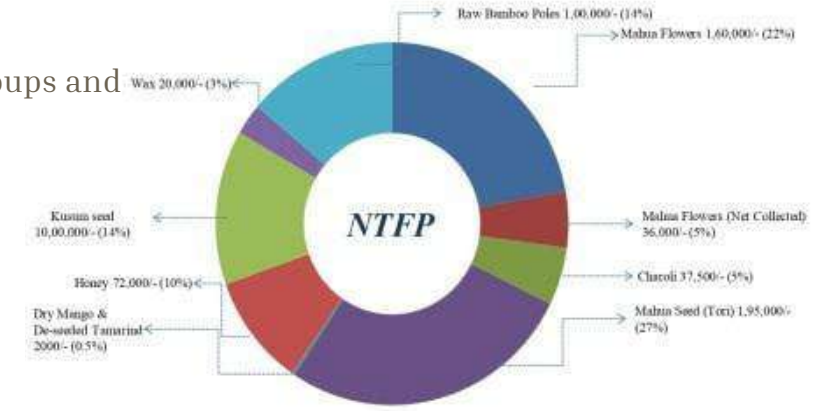
d. Capacity Building

Two short-term training sessions were organized on:

·Financial record-keeping and book management for farmer groups and

·Post-harvest handling and storage of NTFPs.

Women from Kharkadi and nearby villages were identified for specialized Mahua processing training, in collaboration with MAVIM Dhanora.



Total Beneficiaries: 557 Total Quantity Collected: 35,170 kg Total Value Generated: ₹8.52 lakh Villages Covered: 29

Sr. No	NTFP Type	No. of Beneficiaries	Quantity (Kg)	Avg. Rate (INR)	Total Value (INR)	Villages Covered	Status
1.	Mahua Flower	205	18,000	30	1,60,000	17	Stored
2.	Mahua Flower (Net Collected)	70	600	60	36,000	7	Stored
3.	Charoli	5	150	250	37,500	2	Stored
4.	Mahua Seed (Tori)	233	6,500	30	1,95,000	15	Sold
5.	De-seeded Tamarind	4	50	30	1,500	2	Sold
6.	Tamarind Seed	2	20	10	200	1	Sold
7.	Dry Mango	2	10	50	500	1	Sold
8.	Honey	5	740	300	72,000	-	Sold
9.	Kusum Seed	23	5,000	20	1,00,000	-	Sold
10.	Wax	2	100	200	20,000	-	Sold
11.	Raw Bamboo Poles	6	4,000	50–70	2,30,000	3	Sold

Outcomes and Impact

Economic Impact: Direct income generation exceeding ₹8.5 lakh during the season. Social Impact: 557 forest collectors benefited; 38% increase in women's participation. Institutional Impact: Strengthened local governance through village-level producer group formation. Ecological Impact: Adoption of sustainable collection practices minimizing forest degradation.

A. Technologies in Practice - Solar Thermal Hydro-Distillation for Arjuna Bark Extract

Mr. Vikrant Katekar, a Research Scholar at IIT Bombay's CTARA, has provided a solar thermal hydro-distillation system to STRC, Gondwana University, Gadchiroli. This eco-friendly system uses solar energy for sustainable extraction of medicinal compounds from Terminalia Arjuna bark.

Botanical Overview: *Terminalia Arjuna* (Combretaceae) is a deciduous tree (20-25 m) found in India and South Asia. Its bark, rich in triterpenoids and tannins, is used for medicinal purposes.

Methodology: Mature Arjuna trees are sustainably harvested post-monsoon, with bark peeled in strips. The bark is cleaned, sun-dried (4-5 days, 10-12% moisture), ground (1-2 cm pieces), and soaked overnight. 1.5 kg of soaked bark is distilled with 1.5 liters of water in the solar system at 85-100°C, extracting essential oils and bioactive compounds efficiently.

Outcome: The system yields high-quality Arjuna bark extract, rich in bioactive compounds, with minimal environmental impact. It supports local communities by providing a sustainable, cost-effective method for producing medicinal extracts, enhancing Gadchiroli's eco-friendly technology adoption.

B. Pyramid Solar Dryer

The Pyramid Solar Dryer, developed by Dr. Babasaheb Sawant Konkan Krishi Vidyapeeth, Dapoli, to promote sustainable drying of forest produce. This energy-efficient, solar-powered device retains heat and ensures proper airflow, preserving nutritional value and reducing post-harvest losses. Initial trials showed promising results, and STRC is now exploring a bamboo-framed version for greater sustainability. Field feedback highlighted the need to reduce mesh size, lower weight, and improve design for cost-effectiveness. These enhancements aim to boost efficiency and usability, making the dryer a practical solution for NTFP collectors and supporting wider adoption of eco-friendly post-harvest technologies.

Tech – Demonstrations in Agriculture

A. Promoting Minor Farm Mechanization

STRC is committed to improving agricultural efficiency and reducing manual labor through minor farm mechanization. As part of this effort, practical demonstrations of the Manual Hand Ridger and Twin Wheel Hoe were conducted under a technology demonstration initiative. These tools, designed for inter-cropping in vegetables and cash crops, were showcased and distributed among 60 farmers across five villages.

S.N.	Name of Village	No. of Farmers	Name of the Tool	No. of Tools
1	Deoulgoan	12	Manual Hand Ridger	12
2	Kinhala	12	Twin Wheel Hoe	12
3	Arathondi	12	Maize Sheller's	12
4	Chop	12	Manual Hand Ridger	12
5	Vihirgoan	12	Twin Wheel Hoe	12

Outcome:

Committed to improving agricultural efficiency and reducing manual labor through minor farm mechanization. As part of this effort, practical demonstrations of the Manual Hand Ridger and Twin Wheel Hoe were conducted under a technology demonstration initiative. These tools, designed for inter- cropping in vegetables and cash crops, were showcased and distributed among 60 farmers across five villages.

B. Pilot Initiative in Vegetable Farming

As a precursor to a larger NABARD-supported vegetable farming project, STRC launched a focused pilot initiative in the Armori and Wadsa regions. The program engaged five farmers from the villages of Pimplagaon and Potgav to promote diversified crop cultivation and sustainable farming practices. STRC provided quality seeds and essential technical guidance, enabling the cultivation of brinjal, bitter gourd, and chilly across a total of 1.25 acres. This initiative reflects STRC's commitment to agricultural innovation and livelihood enhancement.

S.N.	Name of the farmer	Village	Area Ext. (Acres)	Name of the Crop
1	Motiram mangaroo Uprikar	Pimplagaon	0.25 Acres	Brinjal
2	Gurudeo Maroti Donarkar	Pimplagaon	0.25 Acres	Bitterguard
3	Vilas Maroti Donarkar	Pimplagaon	0.25 Acres	Bitterguard
4	Purshotham Wasudeo Randive	Potgav	0.25 Acres	Bitterguard
5	Ganpat Lakdu Sahare	Pimplagaon	0.25 Acres	Chilly

Outcome:

The pilot initiative resulted in the successful cultivation of vegetables across 1.25 acres by five farmers. It enhanced farmer awareness of crop diversification, improved their technical skills, and demonstrated the practical viability of sustainable vegetable farming practices. The initiative laid a solid foundation for the proposed NABARD-supported scale-up and increased farmer readiness for larger adoption.

C. Climate Smart and Regenerative Agriculture (CSRA) Project

Given the success of this pilot, it is proposed that the project be considered under the Climate Smart and Regenerative Agriculture (CSRA) for the Kharif 2025 season. The project aligns well with CSRA's goals of improving rural livelihoods, promoting sustainable agriculture, and empowering marginal farmers. With adequate financial and technical support, the initiative can be scaled to cover 50–100 farmers across multiple villages.

Impact:

1. **Crop Diversification:** Farmers adopted non-traditional crops, reducing dependency on a single crop and improving income potential.

2. **Demonstration Effect:** Neighboring farmers expressed interest in similar practices, indicating replicability and potential for scaling up.

3. **Livelihood Support:** The initiative supported STRC's mission to improve agricultural livelihoods in tribal regions through low-cost, sustainable interventions.

Medicinal Plants and Traditional Health Systems

The district of Gadchiroli, characterized by dense forest cover and a high concentration of indigenous communities, holds an exceptionally rich repository of traditional healthcare knowledge and medicinal plant biodiversity. Recognizing the significance and untapped potential of this ethno-medical heritage, the Science and Technology Resource Centre (STRC), Gondwana University, established a dedicated programme to revive, document, and scientifically validate the use of medicinal plants and traditional healing systems.

The Medicinal Plants and Traditional Health Systems vertical of STRC seeks to bridge indigenous knowledge systems with modern scientific validation and institutional support. Through a multi-pronged strategy—comprising the STRC Vaidya Chikitsalay, Herbal Garden and Polyhouse Propagation, and Collaborative Research and Capacity-Building Workshops—the programme addresses community healthcare needs while promoting the sustainable utilization and conservation of medicinal plant resources

STRC Vaidya Chikitsalay

Established in September 2022, the STRC Vaidya Chikitsalay at Gondwana University, Gadchiroli, represents a pioneering institutional platform for integrating traditional tribal medicine within a structured and accountable healthcare framework. The initiative focuses on strengthening the indigenous healer network (Vaidus), expanding community access to culturally rooted healthcare services, and generating research-driven validation of ethno-medicinal practices.

Objectives

- To preserve and institutionalize traditional tribal medicinal practices through clinical integration and systematic documentation.
- To provide affordable and culturally compatible healthcare services to local communities.
- To strengthen livelihood opportunities for traditional healers (Vaidus).
- To generate validated data on indigenous treatment modalities and medicinal plant usage.

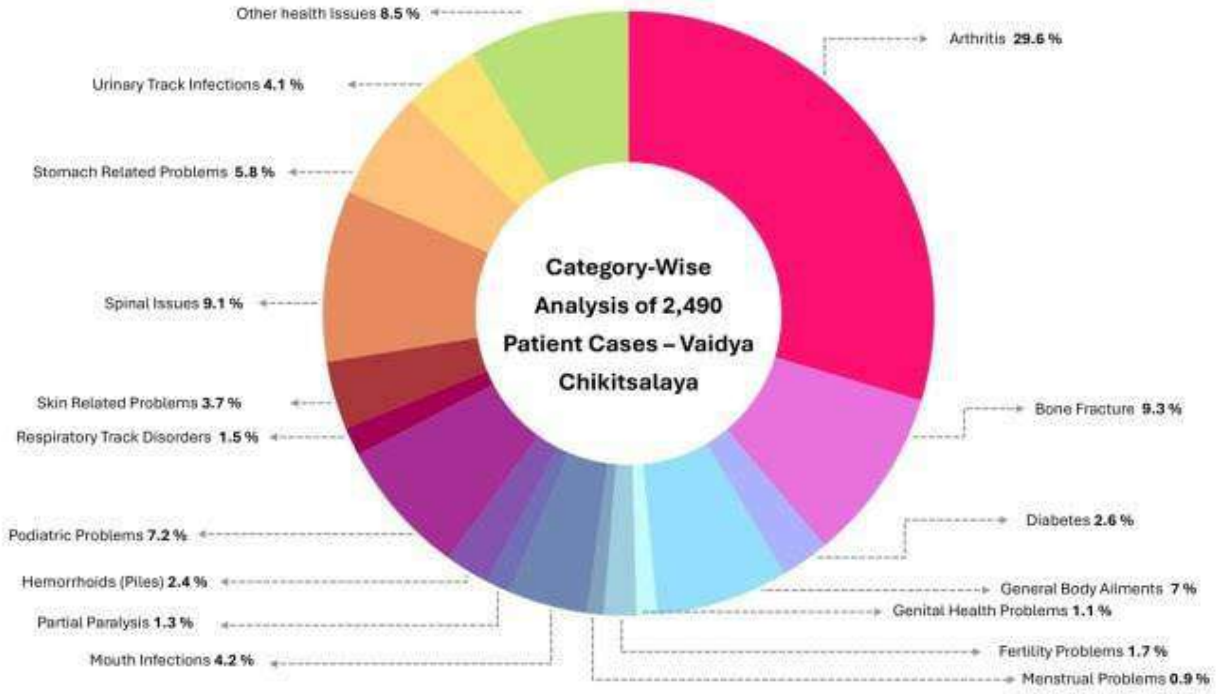
Institutional Collaboration and Outreach

An extension of the Chikitsalay was inaugurated on 16 July 2024 and became operational on 21 August 2024, reflecting a strong collaborative partnership between STRC, Gondwana University, and Lloyd's Infinite Foundation. This collaboration was specifically designed to extend traditional healthcare services to rural and tribal communities through LKAM Hospital, Hedri, during the period August 21, 2024 to December 31, 2024. Such partnerships have been instrumental in expanding the reach and impact of traditional healthcare services beyond the university campus.

Key Outcomes and Impact

The STRC Vaidya Chikitsalay has demonstrated significant and measurable outcomes, underscoring its impact on public health delivery, community empowerment, and the institutional recognition of traditional medicine:

- Extensive Patient Outreach: Over 2,490 patients have received healthcare services across 197 OPD days, reflecting strong community trust and demand.
- Healer Engagement and Livelihood Generation: The initiative has actively engaged 17 traditional healers, collectively generating ₹5.98 lakh in revenue as of November 2024, highlighting both livelihood enhancement and operational sustainability.



Polyhouse-based Propagation

STRC has initiated the development of Forest Department-allocated land for polyhouse-based propagation of medicinal plants. The existing polyhouse structure has been successfully repaired to support controlled cultivation. Land preparation is currently underway, and experimental plots have been developed to assess suitable medicinal species. A bamboo plantation has also been initiated as part of the integrated land use approach. Further, STRC plans to establish a Herbal Garden and Seed Bank to conserve and propagate region-specific medicinal plant species. This initiative aims to promote sustainable cultivation, support traditional medicine, and serve as a resource hub for local communities and researchers.

Bamboo Polyhouse

The first bamboo polyhouse, covering 125 sq. meters, within the university campus. This initiative is supported by the Rajiv Gandhi Science and Technology Commission (RGSTC), Government of Maharashtra, in collaboration with CTARA, IIT Bombay, and SASMIRA, Mumbai. The bamboo structure showcases eco-friendly construction and is aimed at promoting sustainable agriculture. STRC plans to develop a herbal garden within the polyhouse for educational and demonstration purposes, particularly to support training in medicinal plant cultivation. This development aligns with STRC's objective of promoting low-cost, innovative technologies in rural and tribal communities.

From Forest to Future: Scaling Sustainable NTFP & Livelihood Enterprises

To

Community-Based NTFP Cluster Expansion

Goal: *Build scalable, self-sustaining NTFP enterprises.*

Key Focus:

- *Operationalize Godalwahi & 5 new clusters (60–70 Gramsabhas)*
- *Formalize Village Producer Groups for collective marketing*
- *Target ₹30–40 lakh annual turnover*

Medicinal Plant Resource & Health Systems Development

Goal: ***Integrate traditional medicine with science and livelihoods.***

Key Focus:

Establish Medicinal Plant Resource Centre
Add 2 new Vaidya Chikitsalay sub-centres
Cultivate high-demand medicinal species with Forest Dept.

Aqua Crops as Livelihood Options

Goal: *Promote sustainable, tech-enabled farming.*

Key Focus:

- *Expand CSRA to 5,000 farmers*
- *Launch voice-based digital advisories*
- *Empower women in value-added agri enterprises*

Market and Value Chain Development

Goal: ***Scale sustainable tools and processing models.***

Key Focus:

- *Develop bamboo-framed Pyramid Solar Dryer*
- *Use solar distillation for herbal products*
- *Train youth in local fabrication and repair*

Research, Innovation & Knowledge Exchange

Goal: *Bridge indigenous knowledge with science and policy.*

Key Focus:

- *Document traditional healers & practices*
- *Conduct policy dialogues on NTFP trade*
- *Strengthen academic–community collaborations*

Applicable R&D and Academic Program Development

STRC Assistance for S & T Application Scheme

Key findings and innovation from STRC Assisted S&T Application Projects

1 Study on Sustainable Source of Nutrients Wild Vegetables: STRC-Sponsored Research in Gadchiroli

Principal Investigator: Dr. Sonali B. Dhawas **Institution: Shri.** S. S. Science and Comm. College, Ashti **Supported by:** Science & Technology Resource Centre, Gondwana University, Gadchiroli

Under the STRC Assistance for Science & Technology (S&T) Application Scheme, Science and Technology Resource Centre (STRC), Gondwana University, supported a focused research project aimed at exploring the nutritional value, market feasibility, and traditional knowledge associated with wild vegetables consumed by tribal communities in Gadchiroli district. In a region where malnutrition remains a major challenge and local food systems hold untapped value, this initiative sought to validate age-old dietary practices using modern scientific methods.

The study identified and analyzed seven widely consumed wild vegetables, such as *Glinus oppositifolius, Agaricus bisporus, Cassia tora,* and *Olax scandens*, for their nutritional profile, medicinal potential, and community relevance. Laboratory results confirmed high concentrations of essential minerals (calcium, iron, potassium, sodium), along with vitamins A and C, proteins, and carbohydrates. These vegetables also showed strong therapeutic potential in treating conditions like hepatitis, diabetes, and skin disorders. Importantly, minimal levels of heavy metal contamination were recorded, owing to Gadchiroli's relatively unpolluted ecosystems.

Beyond nutritional benefits, the research examined how these vegetables could be incorporated into integrated meal plans for Anganwadi's, thereby supporting child nutrition and reducing dependency on external food supplies. Furthermore, the study explored market linkages for the commercialization of wild vegetables, offering a dual benefit of health and livelihood improvement for local communities.

The project not only documented traditional ecological knowledge but also opened pathways for economic empowerment through sustainable harvesting and sale of these underutilized resources. This initiative aligns with STRC's vision of promoting "local solutions for local problems", combining tribal knowledge systems with scientific validation. The project outcomes inform policy-level recommendations and set the stage for integrating wild vegetables into state nutrition programs. Future efforts will focus on awareness building, supply chain development, and scaling up market access to ensure that these biodiverse food sources continue to contribute meaningfully to community health and income.

List of Wild Vegetables

S. N.	Sample Name (Local Name)			*Theriophonum dalzellii* (Kochai)	*Agaricus hiosporus* (Satya)	*Chlorophytum tuberosum* (Safed Musali)	*Cassia tora* (Tarota)	*Olax scandens* (Haradfari)	*Boerhavia diffusa* (Khaparkhuti)	*Glinus oppositifolius* (Kadu Bhaji)
	Test Parameter	Measurement Unit	Test Method							
1	Moisture	g/100g	FSSAI Manual 2016	86.68	90.21	85.29	70.55	87.29	80.89	88.21
2	Carbohydrate	g/100g	USDA Agri. HB No. 74	8.28	5.89	5.13	0.66	6.38	14.22	6.91
3	Protein	g/100g	IS 7219 : 1973	2.86	3.05	8.13	11.38	4.63	2.28	3.48
4	Total Fat	g/100g	FSSAI Manual 2016	0.28	0.32	0.26	3.18	0.52	1.68	0.42
5	Calcium	mg/kg	ANqr49	22332.39	1222.12	3047.48	24360.63	21154.93	21233.01	7162.53
6	Iron	mg/kg	ANqr49	96.89	322.31	613.95	236.16	321.87	485.73	827.55
7	Sodium	mg/kg	ANqr49	393.77	458.60	1010.66	376.12	446.85	304.08	4232.78
8	Potassium	mg/kg	ANqr49	34338.99	5947.07	6934.11	14515.48	13530.52	40970.87	31510.56
9	Vitamin-A	mg/100g	Lab SOP (By using HPLC)	37.58	0.76	2.57	7.25	19.4	7.71	4.07
10	Vitamin-C	mg/100g	Lab SOP (By using HPLC)	6.61	2.72	0.79	82.7	8.34	0.83	4.61

Table: *Showing Nutritional Composition, Minerals and Vitamin Content of Seven Wild Vegetables*

Photographs of wild vegetables






2 Designing Indigenous Solutions for Forest Fire Prevention: Design and Development of Mahua Flower Harvester

Principal Investigator: Dr. Rahul Krishna Kamble **Institution:** Sardar Patel College, Chandrapur **Supported by:** Science & Technology Resource Centre, Gondwana University, Gadchiroli

Forest fires are a growing environmental concern in central India, with Gadchiroli district alone witnessing over 10,500 fire incidents (IFS Report, 2021). One lesser-known but significant cause is the traditional method of mahua flower collection, wherein tribal communities burn dry leaves on the forest floor to locate the fallen yellow flowers. This not only endangers biodiversity and wildlife but also threatens the safety and livelihoods of forest-dependent populations. Recognizing this critical issue, STRC supported a research project under the S&T Application Scheme to design a sustainable, fire-free alternative for harvesting mahua flowers.

The innovation resulted in the development of a portable and eco-friendly mahua flower harvester-a simple funnel-shaped device made from a green shade net that wraps around the tree trunk to collect falling flowers. Covering a canopy area of up to 907 sq. ., the device is cost-effective, easy to use, and constructed from locally available materials, making it suitable for large-scale deployment in tribal areas. Field demonstrations in Lohara village, Chandrapur, revealed substantial improvements: reduced collection time, lower physical fatigue, elimination of fire use, and minimized risk of encounters with wild animals, especially in tiger-prone zones near reserves like Tadoba Andhari.

The intervention also yielded notable socio-economic benefits. Tribal women reported more efficient collection, which freed up time for other responsibilities, while the improved quality of unburnt flowers fetched better prices in local markets. Community safety was significantly enhanced due to reduced fire hazards and human-wildlife interactions. The success of this solution highlights how small, context- driven technological innovations can lead to large-scale ecological and livelihood impact. Based on field results, several actionable recommendations were proposed: adopting a rental model for seasonal access to harvesters via forest departments; promoting safety training for collectors in wildlife areas; demarcating mahua zones to reduce fire risks; and encouraging community-led forest stewardship.

3 Pilot Initiative on Mushroom Cultivation for Rural Livelihoods

Principal Investigator: Dr. Sanjay waman Patil **Institution:** Dr. Ambedkar College of Arts, Commerce & Science , Chandrapur **Supported by:** Science & Technology Resource Centre, Gondwana University, Gadchiroli

As part of the STRC Assistance for Science & Technology Application Scheme, a pilot project on mushroom cultivation was awarded to Shri Sanjay Patil, Assistant Professor, Dr. Ambedkar College, Chandrapur. This small-scale initiative was implemented in select villages of Gadchiroli district to explore the feasibility of **low-cost, home-based mushroom farming** as a supplementary livelihood option. Designed for rural and tribal settings, the project focused on providing practical training and resources to **2–3 households**, with the goal of building a foundation for future scale-up. The pilot involved targeted beneficiaries-mainly women and youth-who were introduced to mushroom cultivation through **hands-on training sessions**.

Key topics included bed preparation, spawn handling, hygiene practices, and harvesting techniques. To ensure successful implementation, each participating household received a **starter kit** comprising spawn, grow bags, and user manuals. Training was delivered in local languages and supported by regular follow-up from the project team, enabling effective knowledge transfer and addressing field-level challenges. Initial results from the pilot were promising. Households were able to complete one full cultivation cycle, earning between **₹3,000 to ₹5,000** depending on yield and local demand. In addition to income generation, the project contributed to **nutritional awareness**, with families incorporating mushrooms into their daily diets. Beneficiaries also reported enhanced confidence and interest in expanding their cultivation efforts, indicating strong potential for community-led replication of the model. Though limited in scale, the pilot successfully demonstrated the viability and adaptability of mushroom farming in tribal areas with minimal investment.

Building on this experience, there is potential to extend support to larger SHGs or cooperative clusters, create local input supply systems, and explore institutional markets. The project reflects how even small, science-based interventions can initiate livelihood diversification in underdeveloped regions like Gadchiroli.

4 Designing Dignity: Bamboo Mobility Aids for Rural Disabled Persons

Principal Investigator: Dr. A.M Kuthe **Institution:** Visvesvaraya National Institute of Technology (VNIT), Nagpur **Supported by:** Science & Technology Resource Centre, Gondwana University, Gadchiroli

Under the STRC Assistance for Science & Technology Application Scheme, a groundbreaking project titled “Design and Development of Customized Mobility Aids Using Bamboo for Disabled Villagers” was undertaken by Prof. A.M. Kuthe and his team at the CAD-CAM Centre, Visvesvaraya National Institute of Technology (VNIT), Nagpur, in collaboration with Science and Technology Resource Centre (STRC), Gondwana University, Gadchiroli. The initiative aimed to address the unique mobility challenges faced by disabled individuals in rural India, where conventional aids like wheelchairs and crutches are either inaccessible, unaffordable, or impractical for rugged terrains.

The project focused on developing ergonomically sound, eco-friendly, and cost-effective mobility solutions using bamboo (Bambusa vulgaris)-a strong, flexible, and locally abundant material. Prototypes of a three-wheeled bamboo wheelchair and customized bamboo crutches were developed using engineering analysis of load-bearing capacity, balance, and structural integrity. What distinguished this initiative was its community-driven approach: end-users were directly involved in field trials and design feedback loops, including testing conducted at Snehangan, Nagpur, a residential facility for differently abled youth.

This participatory model empowered users as co-creators, enhancing both the functionality and cultural relevance of bamboo-based mobility aids. By using indigenous materials and locally adaptable fabrication methods, the initiative enables low-cost, decentralized production while generating rural employment and artisan engagement. Beyond immediate mobility benefits, the intervention fosters livelihood linkages, self-reliance, and social inclusion for persons with disabilities in rural areas. The approach represents inclusive innovation, where sustainability and community ownership are central to technological solutions. STRC acknowledges the contributions of Prof. A. M. Kuthe, the VNIT team, and field partners for their technical expertise and community engagement.

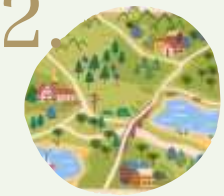
Environment Education Program for Tribal School Children's (Phase-II)Jan– July 2025

Reimagining Environmental Education in Tribal Classrooms

The Environmental Education in Schools (EES) Program entered its second phase in January 2025, expanding its reach from 10 to 15 tribal schools across Gadchiroli district. Anchored by the Science and Technology Resource Centre (STRC), Gondwana University, this phase focused on deepening ecological learning through five hands-on, locally rooted modules. These modules were not merely educational lessons but living experiences designed to help children observe, question, and connect with their surroundings—bringing scientific thinking into the realm of cultural familiarity and everyday life.

The five modules introduced under Phase II include:

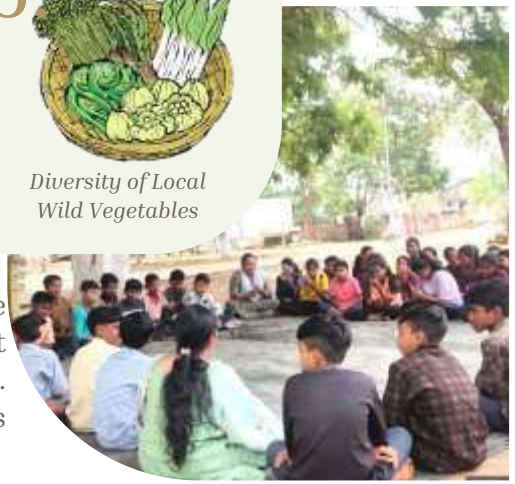
1. 
Introduction to Biodiversity

2. 
Ecological Processes through Nature Trails

3. 
Ethnobotany and Herbal Gardens, Module

4. 
Soil, Plants, and Us

5. 
Diversity of Local Wild Vegetables



These modules blended interactive tools, storytelling, observation games, nature trails, and traditional knowledge to enable students to recognize the environment not just as "green space" but as a dynamic ecosystem in which they live and participate. One of the most impactful components was the Eco-Web Activity, helping students visualize interdependence among species.

Activities like drawing tree ecosystems, narrating stories from nature, and studying spider webs or termite mounds allowed for hands-on learning. Concepts such as seed dispersal, social structures of bees and ants, and local medicinal plant knowledge were taught through lived examples, stories, and community experiences.

Cultural relevance was a critical pillar. By integrating local languages like Gondi and Marathi, and by drawing upon tribal knowledge systems, facilitators created a comfortable and empowering learning space. Students documented traditional uses of Palash leaves, wild vegetables, ant nests, and mushrooms, showcasing the fusion of scientific observation with ancestral knowledge.

In schools with limited biodiversity nearby, facilitators innovated by using visuals, analogies, and student stories to ensure concepts were still internalized. Simultaneously, the program invested in teacher capacity-building through a structured series of four reflective meetings titled "A School That Connects to Children's World of Experiences". These sessions focused on developing mind maps, contextual lesson plans, and linking the textbook curriculum to children's real-life experiences, particularly around water bodies and its ecosystem, farming, and forest fires. Teachers co-created lesson structures by rethinking classroom content through the lens of cultural knowledge and student realities—making science education more inclusive and rooted.

Some key highlights of this phase include:

- **556 students** engaged in **biodiversity and nature trail** modules.
- **517 students** engaged in **Nature Trail** Module -2.
- **Over 70 students** began documenting **wild vegetables and recipes**.
- **Four teachers meeting** focused on **experiential, contextual lesson planning**. **Integration of tribal languages and practices** to **enhance relatability.**
- Active use of **drawings, trails, games, and storytelling** to **foster ecological Curiosity**

Monitoring of post-module activities—such as seed collection, traditional recipe documentation, and weekly tree observations—has been identified as an area requiring further strengthening. Looking ahead, Modules 3, 4, and 5 are scheduled for implementation in the coming months, with the programme set to conclude in December 2025 through a consolidation workshop involving teachers and students. This final workshop will showcase key learnings and community knowledge outputs, including student-developed booklets, herbariums, and lesson prototypes. Overall, EES Phase II has evolved beyond conventional environmental education, fostering ecological awareness, critical inquiry, and pride in traditional knowledge among tribal children in Gadchiroli, while reinforcing STRC's approach of positioning the forest as an integral and living classroom rather than a concept separate from schooling.

Case Study

When the Forest Found Its Voice

The Story of Girola Ashram Shaala

When we first walked into Girola Tribal Residential School, the room felt still. The students sat quietly, eyes wide with curiosity but few words between us. They spoke mostly in Gondi, their native language, and our questions in Marathi didn't quite land. The silence felt heavy—not of disinterest, but of distance. We wondered how to reach them, how to make learning feel like it truly belonged to them.

As the days passed, we began the first EES module on biodiversity. The children listened attentively, yet their voices remained faint. It was only when we stepped outside the classroom—under the trees and along the red-soil paths—that something shifted. The forest opened them up. Suddenly, the quietest child pointed to a tree and shared its name in Gondi. Others joined in, naming plants and describing how their families used certain leaves to heal wounds or roots to treat fever. Their world came alive, and so did ours.

By the time we reached the Ethnobotany and Herbal Garden module, the school had transformed. The teacher, once reserved, now led the children with confidence. Together, they cleared the ground, prepared the soil, and planted herbs with care and laughter. The students didn't just learn from us—we learned from them. They taught us local names, traditional uses, and stories associated with each plant, seamlessly connecting science with memory, culture, and survival.

Over time, the silence that once filled the room was replaced with voices—eager, proud, and full of wonder. We realised that the children's quietness had never reflected a lack of knowledge; they were simply waiting for spaces where their ways of knowing were valued.

At Girola, the forest became the classroom, and every lesson evolved into a conversation between tradition and science. What began as an education programme grew into something far deeper—a journey of listening, trust, and rediscovery. The children didn't just learn about the forest; they reminded us what it truly means to belong to one.

STRC Facilitates Geospatial Training for 150 Forest Guards at Chandrapur Forest Academy

Science and Technology Resource Centre (STRC), Gondwana University, was invited by the Chandrapur Forest Academy of Administration and Management (CHANDRAMA) to conduct a two-day training program on “Application of Mobile-Based Open-Source Remote Sensing and GIS in Forest Management” for in-service Forest Guards. Held on 20–21 January 2025, the program trained 150 Forest Guards from across Maharashtra, making it one of the state's largest frontline capacity-building efforts in geospatial technologies.

Designed for practical application in field conditions, the course introduced accessible mobile tools such as Google Earth, GPS Test, and Map-Window GIS to help guards monitor wildlife, map habitat corridors, resolve boundary disputes, and conduct geo-tagged surveys. Delivered under the guidance of Shri Ashis Gharai, Chief Project Officer & Head, STRC and Shri Swapnil Girade, Scientific Officer, STRC the training combined classroom instruction with hands-on field exercises and real-life case studies.

Participants gained exposure to how mobile GIS tools enhance conservation planning and anti-poaching efforts through evidence-based decision-making. The program received overwhelmingly positive feedback, with 100% of participants reporting increased confidence in applying these tools. Many divisions have already begun integrating the learnings into their regular operations, marking a significant step toward digitally enabled, data-driven forest management in Maharashtra.

STRC Completes First Batch of Bamboo Grower Certificate Course

Under Maharashtra State Skill Development Society (MSSDS), Mumbai

During 2024–25, Science & Technology Resource Centre (STRC), Gondwana University, successfully completed the first batch of its Bamboo Grower Certificate Course, offered under the Acharya Chanakya Kaushalya Vikas Kendra (ACKVK) initiative of the Maharashtra State Skill Development Society (MSSDS), Mumbai.

As a registered Training Centre and Training Provider with MSSDS, STRC launched this program on 15th June 2024, marking a significant step in integrating skill development with sustainable and locally relevant livelihood promotion. The 45-day course comprised 260 hours of training, blending theory, practical demonstrations, and exposure visits. Key topics included bamboo species identification, propagation and nursery management, sustainable plantation techniques, harvesting protocols, and market linkage strategies. Special emphasis was placed on Agro-climatic suitability and resource optimization to ensure that participants could apply the learnings in real-world conditions.

By merging classroom instruction with field-based learning, the program aimed to equip trainees with end-to-end knowledge required to engage in bamboo cultivation and enterprise development. A total of 30 participants predominantly from rural and tribal communities in Gadchiroli and neighboring districts-were successfully certified as Bamboo Growers. These individuals are now well-positioned for self-employment, contract farming, or collaboration with forest-based and agro-industrial ventures. Beyond individual capacity-building, the initiative directly contributes to state-level goals of green economy expansion, rural entrepreneurship, and biodiversity-friendly income generation.

With the success of this pilot batch, STRC plans to scale the program into a recurring training offering, conducted multiple times annually in collaboration with MSSDS. This will help develop a statewide cadre of certified bamboo growers, contributing to ecosystem restoration, livelihood enhancement, and the long-term sustainability of bamboo-based rural industries in Maharashtra.

Communication for Development through ICT

Mobile Demonstration Unit

A van-based audio-visual interactive platform cutting across multiple program verticals, used as a tool to generate awareness, disseminate information, demonstrate appropriate low-cost technologies, facilitate its smooth transfer and adoption and showcase best practices to enable local communities make informed choices.

11	171	204	13,525
Blocks	Villages	Sessions	Audience

Tech Adoptions

Tech Transfer & Hand-holding

Demonstration Sessions

Technology Need Assesment and Demand Generation

Awarenes Campaings

MDU is equipped

- Digital Screen with Internet Session Recording
- Camera Visualizer
- Digital Kiosk
- Public Address System

Key Events

STRC Hosts National Workshop on Indigenous Medicinal Knowledge System (IMK-2025)

March, 2024

The 29 Commission Meeting of the RGSTC, Mumbai, Govt. of Maharashtra, was held at Mantralaya, Mumbai

February, 2024

STRC's Governing Body and Program Advisory Board Meetings held at GU, Gadchiroli and RGSTC, Nagpur

January & November, 2024

Key Visits

Dr. Vijay Ilorkar, Senior Scientist & Head, Agroforestry, PDKV CoA, Nagpur

Dr. Atul Vaidya, Director, National Environmental Engineering Research Institute (NEERI), Nagpur

Ms. Snehal Dhokey, Nagpur Representative Director General of Foreign Trade, GoI

Shri Vikas Kulkarni, Under Secretary Education, Raj Bhavan Maharsahtra

Pracharak, Rashtriya Swayamsevak Sangh, Mumbai

Differently-abled students from across Gadchiroli

A memorable interaction with Noted Educationist Dr. Achyuta Samanta

Dr. Archana Patankar, Vice President along with Dr. Kapil Chandrayan, Consultant, National Skill Development Corporation (NSDC)

Representation of STRC

India International Science Festival, Faridabad and Guwahati

10th World Ayurveda Congress & Arogya Expo, Dehradun

21st Kerala Bamboo Fest, Kochi

15th Agrovision: Central India's Largest Agri Summit

Agrotech, Akola

State Level Consultation on the Status of Adivasi Livelihoods at BAIF, Pune

'Empowering Artisans' Workshop on Export of Handicraft Products by Joint Director General of Foreign Trade, Nagpur

During a recent visit to the Rajiv Gandhi Science & Technology Commission, Mumbai, Father of Saguna Baug, Shri Chandrashekhar Bhadsawade emphasized the Saguna Rice Technique (SRT) implemented by STRC

Our Publications

Annual Report
2023 - 24

Our 2024 Story A Pictorial Representation

Techno-Social Tapestry
By Shri Ashis Gharai,
Former CPO & Head, STRC

Monthly Newsletter

65 Issue Published

Brochure STRC Vaidya Chikitsalay

Booklet and Brochures IMK 2025 National Workshop

Report EES Initiative

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STRC Financials

UTILIZATION CERTIFICATE

Financial Year – 1st April 2024 to 31st March 2025`)

1	Title of the Project	Science and Technology Resource Centre (STRC)
2	Name of the Organization / Institute	Gondwana University Gadchiroli
3	Principal Investigator	Shri. Ashis Gharai Chief Program Officer & Head STRC-GUG
4	Rajiv Gandhi Science and Technology Commission, Mumbai Sanction Order No and Date of Sanctioning the project	RGSTC/File-2013/CR-25, issued by RGSTC on May 20,2013
5	Period of Project	2013-2018 (Initially Sanctioned) Last Extension Received 23rd July 2025 to 23rd july 2027
6	Amount brought forward from the previous financial year	Rs.2,67,90,907/-
7	Amount received from RGSTC during current financial year (Please give No. & dates of Sanction Orders showing the amounts paid)	Nil
8	I) Interest received in the current financial year (Deductible from the next installment II) Other receipt if any	11,03,738/- 25,38,516/-
9	Total amount that was available for the expenditure during the financial year (Sr. No 6+7+8).	Rs.3,04,33,161/-
10	Total expenditure in current financial year.	Rs. 1,41,27,884/-
11	Unspent balance at the end of the financial year.	Rs. 1,63,05,277/-
12	On closure, unspent balance refunded/ to be refunded to RGSTC, if any (Please give details of cheque No. and date)	NIL

Certified that the amount of Rs.1,41,27,884/- (Rupees One Crore Forty One Lakh Twenty Seven thousand Eight Hundred Eighty Four only) mentioned against col. 10 has been utilized on the project for the purpose for which it was sanctioned and that the balance of Rs.1,63,05,277/- (Rupees One Crore Sixty Three Lakh Five Thousand Two Hundred Seventy Seven only) remaining unutilized at the end of the financial year ending 31/03/2026 will be adjusted towards the grant–in–aid payable during the next year.

Certified that I have satisfied myself that the conditions on which the grant–in–aid was sanctioned by the Rajiv Gandhi Science and Technology Commission has actually been utilized for the purpose for which it was sanctioned.

(Signature of Principal Investigator)
Chief Program Officer & Head
Science & Technology Resource Centre
Gondwana University Gadchiroli

(Signature of the Comptroller/ Finance and Accounts Officer/Director of Research)
Finance & Accounts Officer
Gondwana University, Gadchiroli

(Signature of the Head of Institution)
Registrar
Gondwana University, Gadchiroli

UTILIZATION CERTIFICATE

Financial Year – 1st April 2025 to 31st Oct. 2025) Provisional

1	Title of the Project	Science and Technology Resource Centre (STRC)
2	Name of the Organization / Institute	Gondwana University Gadchiroli
3	Principal Investigator	Shri. Swapnil Girade Chief Program Officer & Head STRC-GUG
4	Rajiv Gandhi Science and Technology Commission, Mumbai Sanction Order No and Date of Sanctioning the project	RGSTC/File-2013/CR-25, issued by RGSTC on May 20,2013
5	Period of Project	2013-2018 (Initially Sanctioned) Last Extension Received 23rd July 2025 to 23rd july 2027
6	Amount brought forward from the previous financial year	Rs.1,63,05,277/-
7	Amount received from RGSTC during current financial year (Please give No. & dates of Sanction Orders showing the amounts paid)	Nil
8	I) Interest received in the current financial year (Deductible from the next installment II) Other receipt if any	Nil Nil
9	Total amount that was available for the expenditure during the financial year (Sr. No 6+7+8).	Rs.1,63,05,277/-
10	Total expenditure in current financial year.	Rs. 1,04,85,277/-
11	Unspent balance at the end of the financial year.	Rs. 58,20,000/-
12	On closure, unspent balance refunded/ to be refunded to RGSTC, if any (Please give details of cheque No. and date)	NIL

Certified that the amount of Rs. 1,04,85,277/- (Rupees One Crore Four Lakh Eighty Five Thousand Two Hundred Seventy Seven Rupees only) mentioned against col. 10 has been utilized on the project for the purpose for which it was sanctioned and that the balance of Rs. 58,20,000/- (Rupees Fifty Eight Lakh Twenty Thousand only) remaining unutilized at the end of the financial year ending 31/03/2026 will be adjusted towards the grant–in–aid payable during the next year.

Certified that I have satisfied myself that the conditions on which the grant–in–aid was sanctioned by the Rajiv Gandhi Science and Technology Commission has actually been utilized for the purpose for which it was sanctioned.

(Signature of Principal Investigator)
Chief Program Officer & Head
Science & Technology Resource Centre
Gondwana University Gadchiroli

(Signature of the Comptroller/ Finance and Accounts Officer/Director of Research)
Finance & Accounts Officer
Gondwana University, Gadchiroli

(Signature of the Head of Institution)
Registrar
Gondwana University, Gadchiroli

Note: Figures mentioned in the Row no.11 are as on 31st Oct. 2025 and as per bank statement This is a provisional Utilization Certificate (UC). Issuance of the final Utilization Certificate (UC) is subject to final audited UC (Certified by university appointed audit firm)

Statement of Expenditure

STATEMENT OF EXPENDITURE

Statement showing grants received from Rajiv Gandhi Science and Technology Commission, Mumbai and the Expenditure incurred the period 01/04/2024 to 31/03/2025 and requirement of funds up to 31/03/2026 for the Project Entitled "Science and Technology Resource Center, Gondwana University, Gadchiroli"

Item	Unspent balance carried forward from previous year	Grant received from RGSTC during the year 2024 to 2025	Other receipts interest earned if any, on the grant received	Total of Col. (2+3+4)	Expenditure incurred from 01/04/2024 to 31/03/2025	Balance (5-6)	Requirement of fund for financial year 2025-2026
1	2	3	4	5	6	7	8
1. Non- recurring							
a) Equipment	76,01,014	0	0	76,01,014	9,06,111	66,94,903	10,00,000
2. Recurring				0		0	
a) Manpower	70,08,270	0	0	70,08,270	59,82,586	10,25,684	70,00,000
b) Consumables	82,75,231	0	0	82,75,231	58,05,569	24,69,662	50,00,000
c) Travels	8,16,679	0	0	8,16,679	7,22,760	93,919	16,75,000
d) Contingencies	2,67,355	0	0	2,67,355	2,08,124	59,231	20,00,000
e) Overheads (if applicable)	0	0	0	0	0	0	0
3. Other if any	28,22,358	0	36,42,254	64,64,612	5,02,734	59,61,878	9,43,000
TOTAL	2,67,90,907	0	36,42,254	3,04,33,161	1,41,27,884	1,63,05,277	1,76,18,000

Principal Investigator / Chief Program Officer & Head
Science & Technology Resource Centre
Gondwana University Gadchiroli

Finance & Accounts Officer
Gondwana University, Gadchiroli

Head of Institution
Registrar
Gondwana University, Gadchiroli

Seal

Science and Technology Resource Centre
Gondwana University Gadchiroli
MIDC Road, Complex, Gadchiroli,
Maharashtra, India – 442605 strc.gug@gmail.com | +91 7588762147 |www.strc.org.in