



Science and Technology Resource Centre

Gondwana University Gadchiroli



ANNUAL REPORT

2022-23



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The Chairman's Message



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**Chairman,
Rajiv Gandhi Science and Technology Commission,
Govt. of Maharashtra, Mumbai**

“

Science & Technology Resource Centre at Gondwana University Gadchiroli has been set up to nurture a sustainable ecosystem that enhances livelihood as well as contributes to enriching academics and research in the local context leveraging synergy between the two. This is still work in progress however some progress has been made in the context of Bamboo. In principle connecting up with other Institutions with similar /complimentary objectives would further strengthen the ecosystem.

”

“

I am hopeful that Science & Technology Resource Centre is in the right path to become a centre for innovation. STRC must engage in bringing a change in the lives of the tribal communities through S & T induced innovation.

”



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

Forward



Dr. Prashant Bokare
Hon'ble Vice Chancellor
Gondwana University , Gadchiroli

Science & Technology Resource Centre (STRC), Gondwana University, Gadchiroli, provides a wonderful platform for creating the R & D eco-system in the University set-up and envisages to become a science and technology nodal centre for the region. With its prime focus on applicable science, technology and innovation for livelihood enhancement of the underserved communities, I believe, STRC is moving in the right path to become a centre of excellence for sustainable value creation in the coming years. Gondwana University, as the parent institution, would help propel STRC's quest in achieving the desired goal.

It has been a moving year for STRC. While we continue to strengthen our efforts towards sustainable value creation in bamboo, traditional medicinal knowledge and in informal / formal academic program development, we have been able to take a few assured steps forward with regard to new and unique initiatives and collaborations. I can see STRC playing a significant role in improving the University-Society connect.



Shri Ashis Gharai
Chief Program Officer and Head
Science and Technology Resource Centre
Gondwana University, Gadchiroli

Governing Body (GB)



Dr. C. D. Mayee
Chairman,

Science & Technology Resource Centre,
Gondwana University, Gadchiroli

GB Members

- 1. Dr. Prashant Bokare**
Hon'ble Vice Chancellor
Gondwana University Gadchiroli
- 2. Dr. Shriram Kawale**
Pro- Vice Chancellor
Gondwana University, Gadchiroli
- 3. Prof. Anand B. Rao**
Head, Centre for Technology
Alternatives for Rural Areas (CTARA), Indian Institute
of Technology, Bombay
- 4. Dr. Veena Kamath**
Managing Director and CEO
Maharashtra Knowledge Corporation Limited
(MKCL), Pune
- 5. Dr. Anand Bang**
Joint Director, Society for Education, Action and
Research for Community Health (SEARCH),
Gadchiroli
- 6. Shri Girish Sohoni**
Former President and Managing Trustee, BAIF, Pune
- 7. Dr. Narendra Shah**
Member Secretary, Rajiv Gandhi Science and
Technology Commission (RGSTC), Mumbai
Govt. of Maharashtra
- 8. Shri Sanjay Meena (I.A.S.)**
Collector and District Magistrate, Gadchiroli
- 9. Shri Kumar Ashirwad (I.A.S.)**
Chief Executive Officer (CEO), Zilla Parishad,
Gadchiroli
- 10. Dr. Anil Hirekhan**
Registrar, Gondwana University , Gadchiroli
- 11. Dr. Amudala Chandramouli**
Finance and Account Officer (I/C),
Gondwana University, Gadchiroli
- 12. Shri Ashis Gharai**
Chief Program Officer and Head
Science and Technology Resource Centre
Gondwana University, Gadchiroli

Program Advisory Board (PAB)



Dr. Prashant Bokare
Chairman

Hon'ble Vice Chancellor
Gondwana University, Gadchiroli

PAB Members

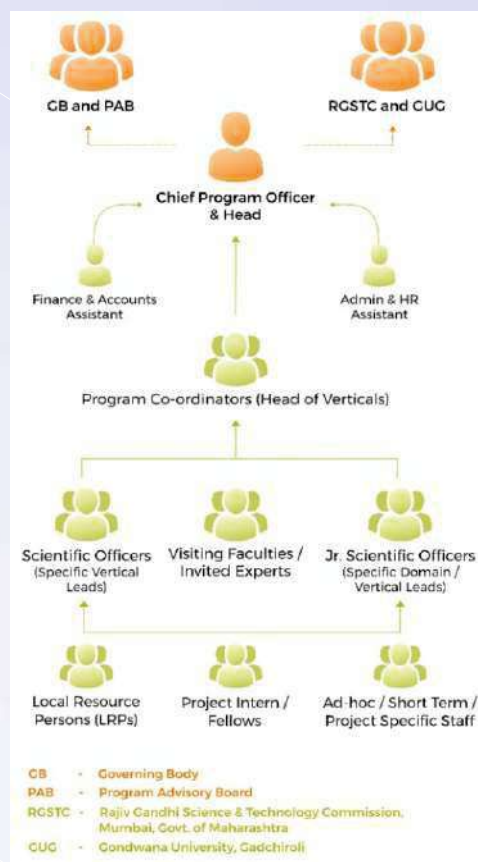
- 1. Smt. Pragati Gokhale**
Advisor and Office in-charge, RGSTC,
Nagpur, Govt. of Maharashtra
- 2. Prof. A. M. Kuthe**
Department of Mechanical Engineering,
VNIT, Nagpur
- 3. Prof. Sandesh R.**
Industrial Design Centre (IDC),
Indian Institutes of Technology, Bombay
- 4. Dr. Dhanraj Patil**
Head, Department of Sociology,
Gondwana University, Gadchiroli
- 5. Dr. V. K. Kharche**
Director of Research
PDKV, Akola
- 6. Shri Avinash Kumar**
Director, Chandrapur Forest Academy
of Administration, Development &
Management, Chandrapur
- 7. Shri Govardhan Singh Rawat**
Chief General Manager / OIC, Pune
- 8. Dr. B. S. Dwivedi**
Director, ICAR/ NBSS & LUP, Nagpur
- 9. Shri Sanjeev Karpe**
Managing Director – Native Konbac
Bamboo Products Pvt. Ltd., Sindhudurg
- 10. Dr. Kishor S. Mankar**
Chief Conservator of Forests Gadchiroli
- 11. Dr. Nitin Kurkure**
Director of Research, MAFSU, Nagpur
- 12. Mr. Sandeep Karhale**
Program Coordinator, KVK, Sonapur,
Gadchiroli
- 13. Shri. Ashis Gharai**
Chief Program Officer and Head
Science & Technology Resource Centre,
Gondwana University, Gadchiroli
- 14. Dr. Manish Uttarwar**
Director, Innovation, Incubation and
Linkages (IIL), Gondwana University
Gadchiroli

* The names and, composition of the GB & PAB
stated above are valid for the period 2022-33

List of Current S & T Staff and Support Function

Shri Ashis Gharai	Chief Program Officer and Head
Shri Gandharv D. Pilare	Scientific Officer
Shri Swapnil A. Girade	Scientific Officer
Shri Antik D. Mallick	Scientific Officer
Shri Ajay N. Shahare	Scientific Officer
Ku. Priyanka G. Durge	Jr. Scientific Officer
Shri. Charudatta M. Wadhai	Jr. Scientific Officer
Shri. Ashish R. Bhoyar	Jr. Scientific Officer
Shri Nikhil C. Borse	Jr. Scientific Officer
Ku. Kajal P. Khevale	Jr. Scientific Officer
Ku. Priya K. Madig	Faculty, Bamboo Diploma
Ku. Shubhangi K. Peshattiwar	Admin Assistant
Shri Manoj D. Tichkule	Finance Assistant
Along with Local Resource Persons (LRPs), Project Interns, Master Artisans and Need Based Appointment of Visiting Experts/ faculties	

Structural Organogram



Executive Summary

As the Head of the Institution, I am happy to share that the past twelve months have been truly purposeful and progressive for STRC. In the past few years, STRC has been able to consolidate its efforts through a specific vertical based approach in scientific fisheries, bamboo craft, non-timber forest produce, indigenous medicinal knowledge, adoption of best practices in on-farm/ off-farm sectors to create tangible outcomes in the S & T based livelihood development process under the aegis of the University ecosystem. With suggestions received from the Governing Body (GB), Program Advisory Board (PAB) and hands-on guidance from the Hon'ble Vice Chancellor, Gondwana University, the existing bouquet of activities have taken traction especially in bamboo craft, herbal plant initiatives, experiential learning, institutional collaborations and partnerships and transfer of low-cost technologies developed through in-house R & D efforts. With regard to few other significant developments; STRC is now registered as "STRC Foundation" as a society under the 'Societies Registration Act 1860' and the Social Audit of the project has been completed. VANAMATI, Nagpur was assigned to carry out the audit exercise.

Primary stakeholders in STRC's science and technology centric development effort are the local communities in general and sections of communities such as artisans, traditional healers, paddy and fish farmers, students and faculties in particular. STRC is engaged in promoting and facilitating knowledge centric development through skilling and capacitating rural youths including women. STRC is striving to excite local communities towards establishment of a network of viable natural resource driven rural business enterprises to generate sustainable income. While keeping knowledge, skill and technology centric development models at the core of our implementing strategies, multiple job opportunities have been created for traditional bamboo artisans, primary MFP collectors, students, local fish & paddy farmers and traditional healers.

As part of the mandate in bamboo, we have managed to create a cadre of over 50 skilled bamboo artisans comprising of STRC Master Artisans and few women centric rural enterprises (SHGs) at Armori and Gadchiroli taluka, we are in the process of establishing a Common Facility Centre (CFC) at Maldugi with 50 families and more than 10 individual households (MCFCs) leading to an entrepreneurial ecosystem. Development of a customized Product Portfolio (for varieties of product in Institutional, lifestyle and utility craft space) is in process, however, STRC has now begun to focus on products under bamboo furniture and bamboo as a structural material (Construction). The first batch of the One Year Bamboo Diploma have graduated and are being engaged in a paid apprenticeship mode. We are also trying to register graduated students to be groomed as young start-ups with TRICEF, Gondwana University Gadchiroli.

STRC initiatives in the Non-Timber Forest Produce and Indigenous Medicinal Knowledge sector has gained significant boost with the launch of the *Vaidya Chikitsalay* in the university premises and a Collectivization Unit at Kharkhadi, Dhanora. While the two-days-a-week OPD of Vaidya Chikitsalay has been regular and is slowly gaining popularity, our efforts to develop a more comprehensive *Vaidu Directory* is in progress. As part of our ex-situ conservation efforts, establishment Herbal Gardens in the premises and a Community Nursery in Dhanora block has begun along with establishing a Seed Bank for scientific research. Discussions on these efforts have taken place in many regional and national forums in the past year or so. We are also in talks with multiple research institutions with regard to lab studies and scientific validation to determine medicinal properties present in the plant/plant parts used by the local traditional healers for treatment. Selected local folk healers have been proposed to be registered under Voluntary Certification Scheme for Traditional Community Healthcare Providers (VCSTCHP) of Quality Council of India. Similarly, under the Non-Timber Forest Produce related initiatives, STRC did extensive field surveys to determine a NTFP cluster (10 villages, 283 households) in Dhanora for five commercially important NTFPs. To employ sustainable harvesting, collectivization and good storage practices, a Village Level Committee (VLC) has been formed and registered. STRC is facilitating the scientific collection, storage processes and forward market linkages. A Primary Processing Centre (PPC) will be subsequently developed. It is expected to ensure better revenue generation for households engaged in collection of MFPs.

Under Academic Program Development activities, along with the one-year diploma in bamboo entrepreneurship and design for undergraduates, STRC has envisaged to target tribal school children in the age group of 12-14, for a module based 'beyond the classroom' environment education program in 10 Ashramshala schools of Gadchiroli. This initiative has really come up well with about 374 students on board and is expected to cater to over 1000 school children in over 30 schools in next 6 months. Our in-house and collaborative R&D initiatives have led to registration of five design patents, especially in Bamboo craft including bamboo composite agri-allied tools (cultivation, backyard poultry and aquaculture). STRC has managed to transfer these low-cost tools and technologies over 100 beneficiaries. Part of the inter institutional liaising, we have also initiated 'Internship Programs' in bamboo craft, aquaculture and ICT in collaboration with TRICEF, Gondwana University Gadchiroli.

Science and Technology Resource Centre (STRC), in the past year or so has embarked in to significant knowledge and development partnerships with Regional Ayurveda Research Institute, Nagpur and Agharkar Research Institute, Pune amongst others. STRC also has had the privilege to get represented at various regional and national forums such as Agrovision and Indian Science Congress held at Nagpur, India International Science Festival held at Bhopal, Indian Council of Social Science and Research (ICSSR), New Delhi and Desai Sethi School of Entrepreneurship (DSSE), IIT Bombay etc.

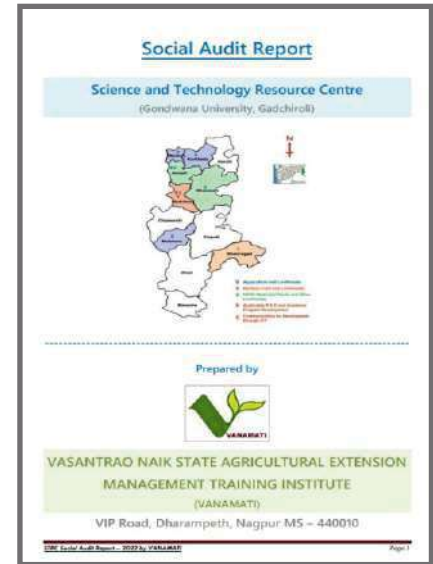
I firmly believe that STRC has taken significant strides ahead and is on the right path towards attaining the goal of sustainable value creation for the all-round development of the communities it caters to.

Key Milestones of STRC (2022-23)

1. Social Audit of Science and Technology Resource Centre Project by VANAMATI

The completion of the Social Audit of the Science and Technology Resource Centre (STRC) project, conducted by the Vasantrya Naik State Agricultural Extension and Management Training Institute (VANAMATI) Nagpur, – (An apex training and management institute working in the state development sector of Maharashtra) marks a significant milestone for STRC. This assessment highlights STRC's commitment to transparency, accountability, and inclusive development, making it a significant milestone in STRC journey.

Under this exercise each STRC initiative/program (as on December 2022) has been thoroughly evaluated as part of the social audit exercise, which assessed the impact, efficacy, and efficiency of STRC programs in context of social impact. Tangible and intangible outcomes have been thoroughly taken into account to assess the program alignment with the intended goals and community needs.



During this exercise following key recommendations made by VANAMATI audit team to further improve the programs efficacy.

1. STRC has created a social impact and awareness amongst the stakeholder, particularly in the area of Bamboo utilization, inland fisheries, traditional medicinal herbs, where people can adopt the relevant science and technology to improve the livelihood.
2. Necessary changes should be made at Policy Level and subsequent modifications should be made at the Implementation level as per the recommendations provided to each programs.
3. Functional autonomy should be given to the implementation team with suitable administrative and financial support in an adequate and timely manner.
4. Social auditing is a continuous process and hence it should be carried out regularly as long as the project is in progress.
5. The Impact Assessment Exercise may be considered once the project period is over and the project management leadership desires to know about the critical factors of success and or failures.

The audit process enabled STRC to gain insights into its strengths, weaknesses, and areas for improvement, fostering a culture of continuous learning and growth.

Social Audit Exercise has several benefits for STRC.

- ❑ It helps in building trust and confidence among the community, funders, and other stakeholders by showcasing the organization's commitment
- ❑ Provides valuable feedback and recommendations for STRC to refine its strategies, programs, and operations.
- ❑ It also facilitates evidence-based decision-making and enhances the impact of STRC's initiatives.

Collectively, the social audit exercise showcased the STRC commitment to meeting the expectations and aspirations of the community, ensuring that its activities are carried out with transparency, fairness, and inclusivity.



Interaction with project beneficiaries



VANAMTI Audit team Inspecting Fish-Vending Units at Armori



Interaction with traditional healers



Discussion with bamboo team

Glimpses of the Social Audit Exercise

2. Registration as a Society, “STRC Foundation”, Gadchiroli, under Indian Societies Act, 1860

Registration of STRC Foundation as a Society under the Indian Societies Act, 1860 is a significant achievement for the Science and Technology Resource Centre (STRC). This accomplishment solidifies STRC's commitment to fostering scientific and technological advancements in the region and sets the stage for greater impact and outreach.

By obtaining registration under the Indian Societies Act, 1860



STRC Foundation gains legal recognition and a formal organizational structure. This registration establishes the foundation's legitimacy and credibility as a dedicated entity working towards the promotion of science and technology.

Registration as a society enables STRC Foundation to establish and foster partnerships and collaborations with other research institutions, universities, and industry players. This networking opportunity opens avenues for knowledge sharing, resource mobilization, and joint initiatives to address local challenges through scientific and technological interventions.

Additionally, the registration enables STRC Foundation to receive grants, funds, and donations from CSR, government bodies, philanthropists, and other funding agencies. These resources can be utilized to further enhance research and development activities, create better infrastructure for scientific exploration in Gadchiroli.

Furthermore, being recognized as a society under the Indian Societies Act empowers STRC Foundation to acquire property, open bank accounts, and enter into legal agreements, strengthening its operational capabilities. It also ensures transparency and accountability in the foundation's functioning, as it is bound by the legal and regulatory framework set forth by the Act.

Proposed logo of STRC Foundation



- The logo features a circular emblem that incorporates elements of nature and technology. At the center of the emblem is a community image living in close proximity to forest, with lush green trees and foliage. Surrounding the forest is gear symbol that represent different aspects of science and technology based development.
- The outer edge of the emblem is framed by panicle shapes representing prominent livelihood of the region.
- The base is scripted with the name of the foundation and parent organization.
- The overall color scheme is earthy and natural, with shades of green, brown, and white. The font used for the text is clean and modern, conveying a sense of professionalism and innovation.

Programs and Initiatives (2022-23)

Aquaculture based Livelihood Initiatives



1. STRC- MAFSU Collaborative project titled “Development of Organized Fish Seed Production, Culture and Marketing to Ensure Sustainable Livelihood Opportunities in Aquaculture in Gadchiroli District.”

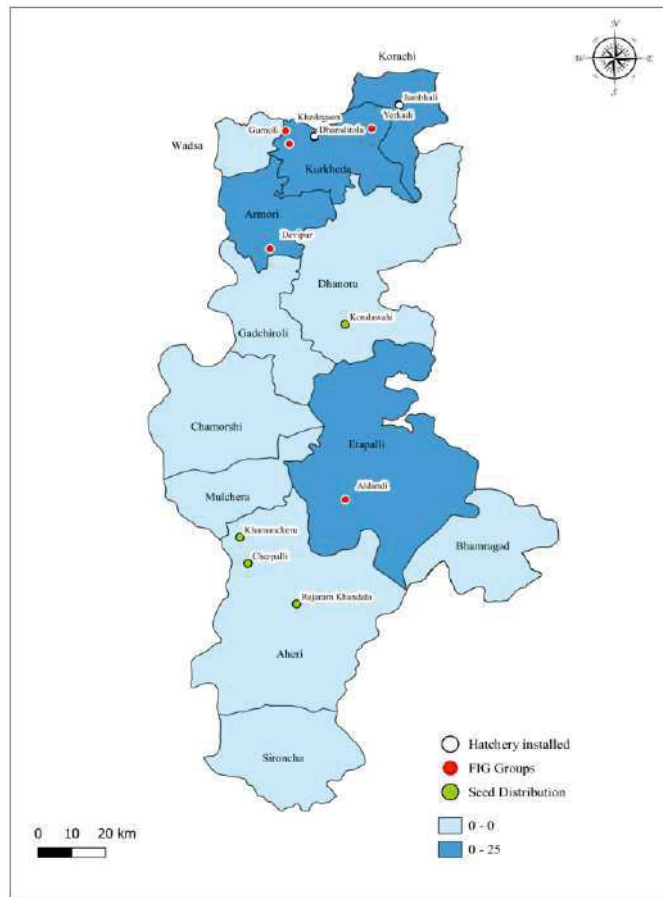
The project undertaken to address the issue of quality fish seed production at source through a collaborative effort between the STRC and Maharashtra Animal and Fishery Science University. The project aims to quality fish seed production, scientific culture and establishing market channels benefiting local fish farmers in Gadchiroli district.

To date, a total of 229 sites have been surveyed to identify suitable locations for freshwater fish culture. Out of these, 71 sites have undergone thorough suitability studies to ensure optimal conditions for production. As a result, five fish seed production hatcheries have been planned to be installed, that can provide a reliable source of quality fish seed for selected fish farmers.

Furthermore, to enhance the knowledge and capabilities of fish farmers under the project, six farmers' interest groups (6 FIGs) have been formed, comprising a total of 181 fish farmers. These groups serve as platforms for sharing experiences, learning, and collaboration among the farmers.

Training and capacity building are key components of this project. So far, 213 farmers have been trained through seven intensive workshops, focusing on various aspects of fish seed production, pond management, and sustainable farming practices. This training empowers the farmers with the necessary skills to improve their productivity and income.

In addition to training, 24 selected fish farmers have been provided with average of 3000 fish-fingerlings per farmer. This effort aims to provide farmers with a practical opportunity to apply their newfound knowledge and skills, further supporting their income generation.



Map showing locations of PCH Installation, FIG groups formed and distribution of Fish seeds to selected fish farmers



Training and capacity building sessions for selected fish farmers at MAFSU, Nagpur

The project incorporates technology transfer through the introduction of Portable Carp Hatcheries and Fish Vending Units. These innovative technologies enable farmers to efficiently produce quality fish seed and facilitate the sale of their produce, ensuring a sustainable livelihood.

According to the report submitted by Maharashtra Fishery University, the project has yielded positive results. On average, individual fish farmers have experienced an incremental income generation ranging from INR 40,000 to 1.4 lakh. This demonstrates the tangible impact of the project on the economic well-being of the farmers under the project.

Overall, the combined intervention by STRC and Maharashtra Fishery University in addressing the issue of quality fish seed production has proven to be successful. Through extensive surveys, hatchery installations, training workshops, and technology transfer, the project has improved the livelihoods of fish farmers in Maharashtra while ensuring a sustainable and high-quality supply of fish seedlings.

Project Implementation activities (2022-23)



2. Integrated Fish Farming

The integrated fish farming approach is aimed at optimizing the utilization of resources available to fish farmers. In 2022, a pilot project was initiated with 1 selected fish farmer (Purushottam Randive, Potgaon,) to explore the potential benefits of this approach. Through the Integrated Fish Farming method Mr. Randive successfully harvested fish and generated additional income that estimated over INR 1.00 Lakh through two rearing cycles.

Inspired by the success of this pilot study, the STRC initiated an Integrated Fish Farming project in 2022 for replication of the model initiated through a project titled "Development of poultry-cum fish farming as a livelihood development opportunity for selected 05 fish farmers in Gadchiroli" that aims to create a sustainable livelihood for selected fish farmers. The project has a total cost of 2, 28,000 INR including beneficiary contribution and project mainly focused on replicating the Integrated Fish Farming (IFF) - (Fish +Poultry) model by incorporating IFF best practices.



The Project is being implemented through these following components

- 1. Training and Capacity Building:** Conducting training programs to equip the selected fish farmers with the necessary knowledge and skills in integrated farming techniques, poultry management, fishery technologies, and best practices. This is enabled them to effectively implement the IFF model.
- 2. Infrastructure Development:** Assisting the farmers in constructing suitable infrastructure (Poultry Shed) for the integrated farming system.
- 3. Procurement of Livestock and Fish Fingerlings:** Providing the necessary livestock, such as poultry birds (chicks), and fish fingerlings to the selected farmers to initiate farming operations.
- 4. Technical Assistance and Monitoring:** Providing ongoing technical support and guidance to the farmers throughout the project duration. Regular monitoring and evaluation will be conducted to ensure the farmers are following the best practices and to address any challenges they may encounter.

List of selected beneficiary under the IFF project.

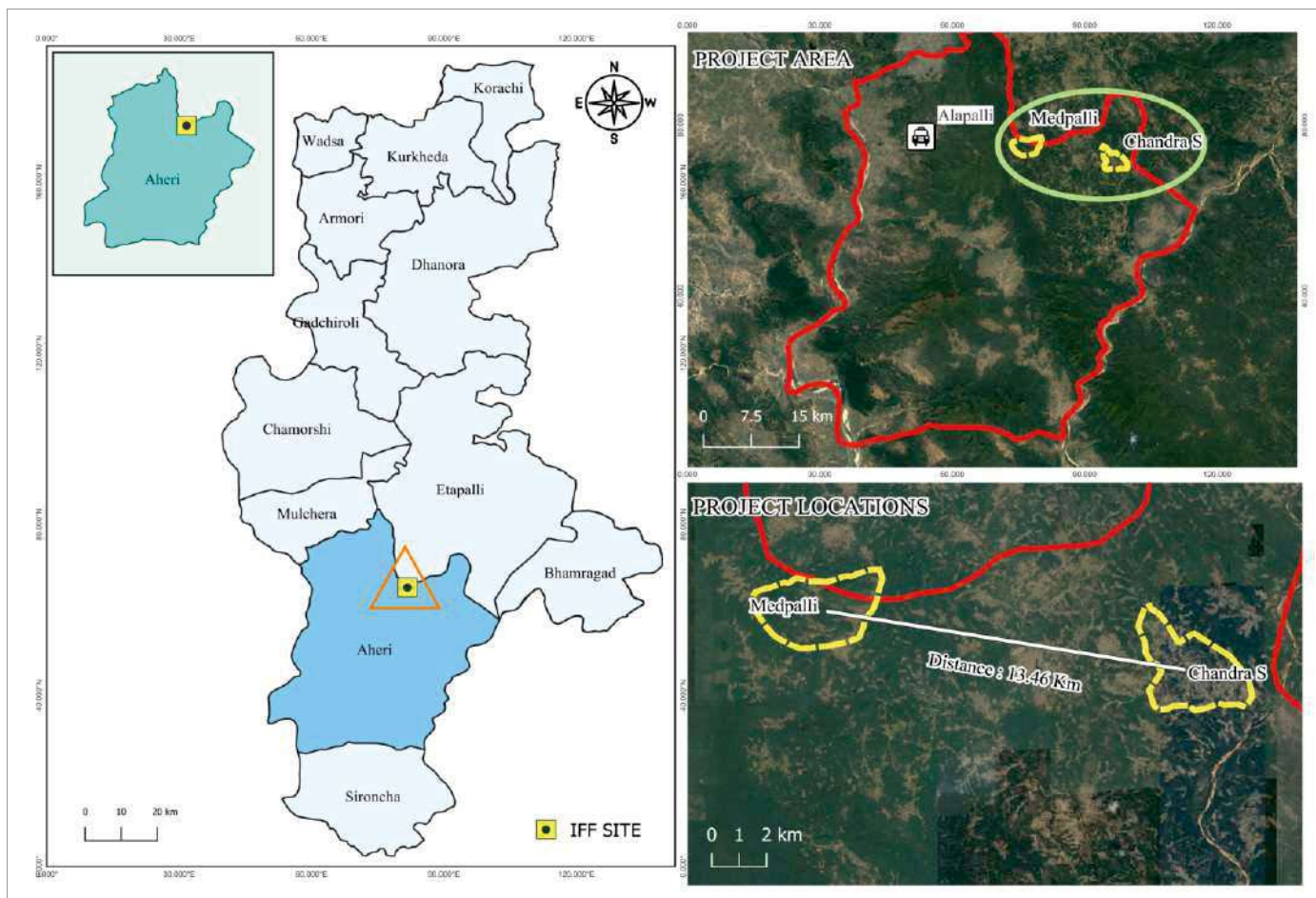
Sr. No	Project Beneficiary	Location	Input Distributed (Fish Fingerling)
1	Purushottam Randive	Potgaon, Wadsa	2500 No.
2	Digambar Randive	Potgaon, Wadsa	2500 No.
3	Bhagwan Mangre	Ramala, Armori	3500 No.
4	Mahendra Shende	Armori	2500 No.
5	Minakshi Kirmire	Rakhi, Gadchiroli	3500 No.
		Total	15000 No.

By implementing IFF best practices, the project envisions to maximize fish production, optimize resource utilization, and enhance the overall profitability of the integrated farms. The selected farmers will be encouraged to adopt sustainable and environmentally friendly practices to ensure the long-term viability of their operations and generate maximum profit from limited land holding.

3. Integrated Fish Farming Project for Fish Farmers in Medpalli Cluster, Aheri- A project Supported by Zilla Manav Vikas Samitee Gadchiroli (2023-24)

This project received funding from the Manav Vikas Mission-Gadchiroli (2023-24) for 12 months duration with funding support of INR 12, 11,700 including beneficiary contribution. The project specifically targeted 20 fish farmers in the Medpalli cluster of Aheri. The selected 20 fish farmers in the Medpalli cluster will be provided with the necessary support, guidance, and training to implement the integrated fish farming method effectively. They will be capacitate on various aspects, including pond preparation, fish species selection, poultry management, feed management, disease control, and marketing strategies.

Through the integrated fish farming approach, farmers will be able to diversify their income sources and reduce risk. The symbiotic relationship between fish and poultry farming allow efficient use of resources. The waste generated from poultry farming, such as manure and uneaten feed, served as a nutrient source for the fish ponds, reducing the need for external inputs.



Map Showing the project location- Medpalli Cluster Aheri (A cluster of 20 selected fisher farmer under the Manav Vikas Mission Project 2023-24)

The project aimed to improve the economic conditions of the fish farmers by enhancing their income generation potential. By adopting this integrated approach, farmers were not only able to benefit from fish production but also from poultry products. The project will monitor the progress and success of the integrated fish farming systems implemented by the selected farmers

4. Aqua-Tech Facilitation Centre at STRC (A Project in the Pipeline)

Establishment of Aqua-Tech Facilitation Centre at STRC is a comprehensive project aimed at establishing an aquaculture technology delivery system. The project focuses on training beneficiaries in aquaculture know-how and better management practices while upscaling innovative and proven technologies through dissemination.

The Aqua-Tech Facilitation Centre acts as a central hub for the procurement, testing, and quality assurance of aquaculture technologies. It collaborates with leading research institutions, industry experts, and technology providers to identify the most effective and suitable technologies for adoption in the local aquaculture industry.

The training programs cover a wide range of topics, including aquaculture techniques, species selection, pond management, feed management, disease control, water quality management, and sustainable farming practices. By imparting these essential skills and knowledge, the Aqua One Centre aims to empower beneficiaries with the expertise needed to enhance their aquaculture operations and improve overall productivity.



Bamboo Craft Based Livelihood Initiatives



1. Direct Livelihood Support

During the year 2022-23 a total of 55 employment opportunities were created under various initiatives of the Bamboo Craft and Livelihood through STRC's coordinated efforts and the active support of the local community. These positions spanned various roles and responsibilities, ranging from artisans and craftsmen to technical support, SHG groups etc.

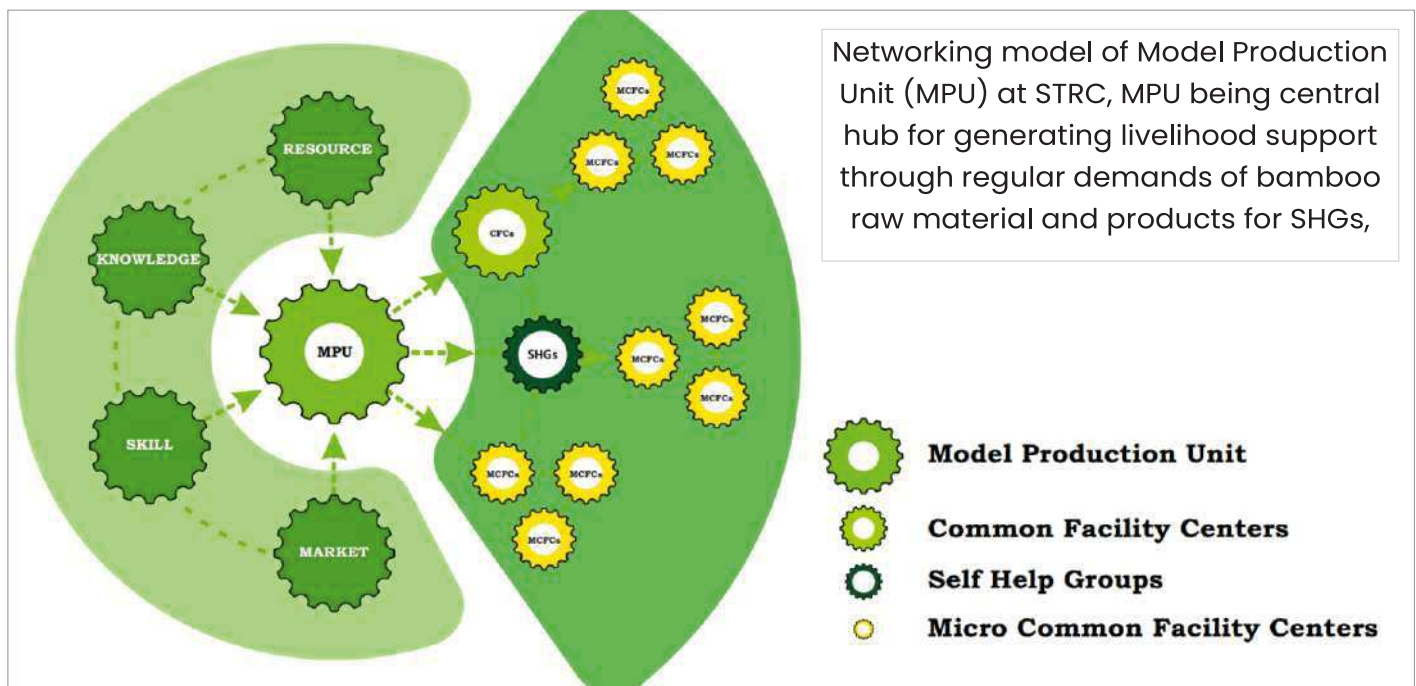
Along with creating jobs, the Bamboo Craft and Livelihood initiatives produced about 2.15 lakh as community income over the course of eight months. This income generation was achieved through the production and sale of various bamboo craft products and raw material. The local artisans, under the guidance and support of STRC, utilized their skills to create innovative and high-quality bamboo-based products, which garnered significant demand in both local and external markets



Direct Community support to SHG generating regular demand for bamboo raw material



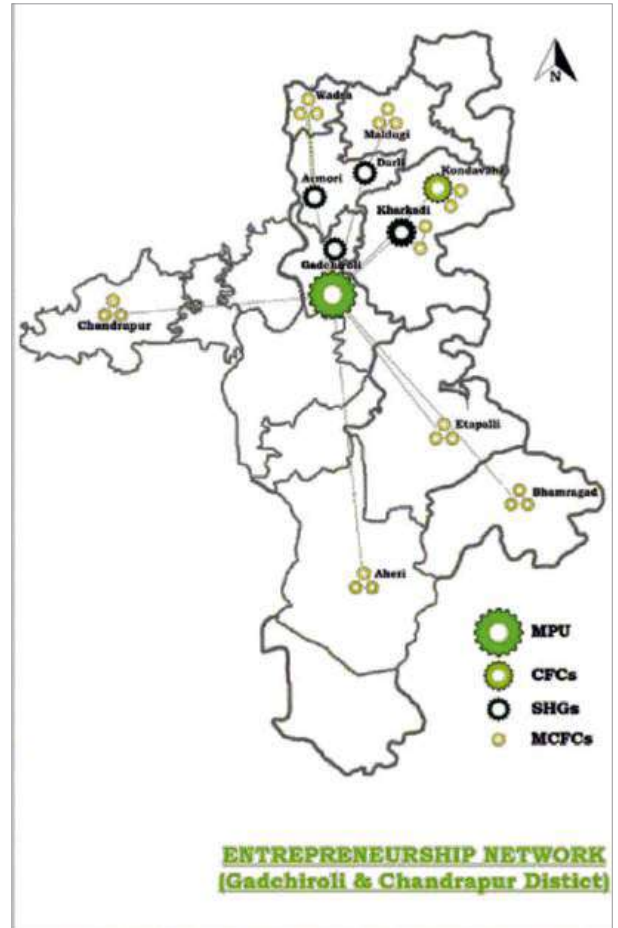
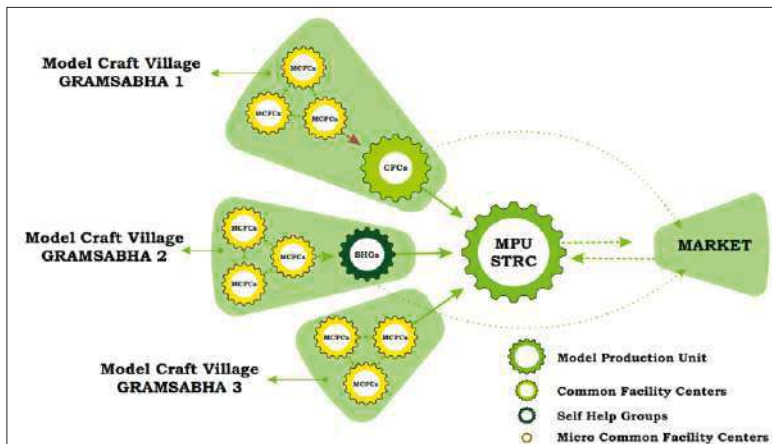
Engagement of individual artisan household (MCFC) in production of bamboo strips



Schematic of networking model of Model Production Unit that engages community at different levels

2. Creating Entrepreneurial Ecosystem in Bamboo

Developing a business ecosystem for traditional bamboo artisans is one of the core mandate of the Bamboo craft and Livelihood vertical. This majorly emphasized on creating different entrepreneurial ecosystem components, such as bamboo-based Self Help Groups (SHGs), a bamboo common facility centre, and individual bamboo dependent households. Model Production Unit (MPU) at the STRC is acts as a central hub of this ecosystem network.



Networking model of Model Production Unit (MPU) at STRC, MPU being central hub for generating livelihood support through regular demands of bamboo raw material and products for SHGs, CFCs and MCFCs

The Bamboo-based Self Help Groups (SHGs) form an essential component of this entrepreneurial ecosystem. These groups are created to bring together bamboo artisans with similar skills and interests. By pooling their resources and knowledge, the artisans can collectively enhance their entrepreneurial capabilities. The SHGs provide a platform for artisans to collaborate, share experiences, and collectively address challenges related to production, marketing, and overall business development.

The Bamboo Common Facility Centre is another crucial element of this initiative. It is a centralized facility equipped with the necessary infrastructure, machinery, and tools required for bamboo processing and product development.

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Individual bamboo dependent households are also a vital part of the entrepreneurial ecosystem. These households comprise artisans and their families who depend on bamboo craft for their livelihoods. The initiative aims to strengthen these households by providing them with training, resources mainly with respect to create and resource bamboo raw material as per the demand. STRC supports this units through generating regular demand for raw material for Model Production Unit at STRC.

The Model Production Unit (MPU) at the STRC acts as the central hub and coordination center for this entrepreneurial ecosystem. It serves as a demonstration and training center for bamboo craft, showcasing best practices, innovative techniques, and sustainable approaches. The MPU provides technical support, market intelligence, and guidance to the SHGs, Common Facility Centre, and Individual Bamboo Dependent Households. It acts as a catalyst for entrepreneurship, enabling artisans to develop and scale their businesses effectively.

Moreover STRC envisages to enhance this comprehensive entrepreneurial ecosystem, through empowering and upskilling traditional bamboo artisans.



3. STRC Bamboo Product Portfolio

Over the past year, significant efforts have been made to diversify the products of the bamboo at STRC, focusing on four main categories: lifestyle disposal, furniture, agricultural tools and construction using bamboo as a structural material. These efforts result in improved development of new products in these categories.

A total of 10 innovative products were created in the Life Utility category. These products aims to improve and simplify everyday life by offering practical solutions combining the natural beauty and versatility of bamboo. From institutional bamboo products and home accessories to decorative items and personal accessories bamboo lifestyle utility products offers a wide range of products for institutional and general consumers.



Products under lifestyle utility category

The furniture category has also been significantly expanded with two new furniture products made from bamboo. These products combine aesthetics and functionality, offering sustainable and environmentally friendly alternatives to traditional furniture. Whether it's indoor or outdoor furniture, bamboo options offer an elegant and durable solution.



Products under lifestyle utility category

3. STRC Bamboo Product Range

Recognizing the importance of agriculture and allied activities, two new products have been developed in the agri-allied tools category. These tools cater to the specific needs of farmers and agriculturists, focusing on efficiency, durability, and eco-consciousness. The bamboo-based tools offer a lightweight yet robust alternative for various farming and allied activities.



Bamboo Poultry-shed



Bamboo Seed Spacer

In addition, the potential of bamboo as a construction material was exploited, resulting in two new products in the construction category. These products use bamboo as a structural material, emphasizing its strength, flexibility and environmental friendliness.

These efforts made to expand product diversification have not only expanded the range of bamboo-based offerings but also emphasized the versatility and eco-friendly nature of bamboo as a material.



4. Training and Capacity building to Create Skilled Workforce

Over the past year, significant investments have been made in training and capacity building in the bamboo vertical. In particular, three intensive production workshops targeting individual bamboo artisans and self-help groups were organized in the year 2022-23. The aim of these workshops was to improve the skills and knowledge of the participants so that they could improve their craftsmanship and productivity.

A total of 50 artisans have benefited from these workshops, receiving comprehensive training on various aspects of bamboo production. The workshops covered a wide range of topics, including bamboo treatment and preservation methods, design principles, product development, and quality control. Through practical demonstrations and hands-on learning, the artisans gained valuable insights and honed their skills in working with bamboo. During the workshops, special emphasis was placed on utilizing unique low-cost tools developed by the STRC, such as the low-cost width sizer, modified coiling tool, flower toolkit, and jewellery toolkit, proved to be instrumental in improving the efficiency and precision of bamboo-based production. Artisans were trained in the proper usage and application of these tools, allowing them to create intricate and high-quality bamboo products.

By conducting these workshops and training programs, the bamboo vertical has made significant strides in capacity building and skill enhancement. The knowledge and expertise gained by the 50 trained artisans will not only benefit their individual growth as a bamboo artisan but also contribute to the overall development and promotion of bamboo based livelihoods in the region



Glimpses of the training and capacity building sessions during the year 2022-23

5. Initiating Zilla Manav Vikas Samitee Supported Project Titled “Establishment of Bamboo Common Facility Centre (B-CFC) in Kurkheda Block, Gadchiroli as a Rural Enterprise for Skill Upgradation and Livelihood Generation of Traditional Bamboo Artisans”

The STRC has been awarded a project by Manav Vikas Mission, Gadchiroli, with a grant amount of INR 15, 59,250. The project focuses on the establishment of a Bamboo Common Facility Centre (B-CFC) in Maldugi, Kurkheda Block, and Gadchiroli. This initiative aims to uplift traditional bamboo artisans in the region by providing skill upgradation and business platform and generating sustainable livelihoods. The Bamboo Common Facility Centre (B-CFC) will serve as a hub for various activities related to bamboo production, processing, and skill development and marketing. The facility will be equipped with necessary infrastructure, tools, and equipment to support the artisans in enhancing their craftsmanship and productivity. It will provide a centralized location for training, production, and market linkage activities.



Through this project, traditional bamboo artisans in the region will have access to comprehensive skill upgrading programs. These programs will cover various aspects of bamboo craftsmanship, including bamboo treatment and preservation methods, product design, value addition, and quality control. The aim is to enhance the artisans' skills, improve the quality of their products, and increase their market competitiveness.

The establishment of the Bamboo Common Facility Centre (B-CFC) will also facilitate the sharing of knowledge and best practices among the artisans. It will create a collaborative environment where artisans can learn from each other, exchange ideas, and collectively work towards the growth and development of the bamboo sector in the region. In addition to skill upgrading, the project aims to generate sustainable livelihood opportunities for traditional bamboo artisans. The B-CFC will act as a rural enterprise, providing a platform for artisans to showcase and sell their products. The project will also focus on market linkages, connecting the artisans with potential buyers, retailers, and other stakeholders in the bamboo value chain. This will help the artisans in accessing larger markets, improving their income, and ensuring long-term sustainability of their livelihoods.

Overall, the project awarded to the STRC by Manav Vikas Mission in Gadchiroli holds immense potential for the up-liftment of traditional bamboo artisans. Through the establishment of the Bamboo Common Facility Centre (B-CFC), the project aims to provide skill upgrading opportunities, promote entrepreneurship, and create sustainable livelihoods in the region. It will empower the artisans, enhance their income-generating capabilities, and contribute to the overall socio-economic development of the community.

6. Collaborations and Partnerships developed under Bamboo initiatives

In the past year, the STRC has successfully forged several collaborations in the bamboo vertical, working with a diverse range of organizations and institutions to promote bamboo initiatives and foster collaborative development of the organization.

One of the notable collaboration is with BETiC (Biomedical Engineering and Technology incubation Centre, VNIT Nagpur), for development of a community entrepreneurship model for orthopedic aids using bamboo. By partnering with BETiC, the STRC has combined expertise in bamboo craftsmanship with biomedical engineering to create innovative and affordable orthopedic aids. This collaboration aims to improve accessibility to quality healthcare solutions for individuals in need while utilizing the unique properties of bamboo.



Maharashtra Bamboo Promotion Foundation

The STRC has also collaborated with the Maharashtra Bamboo Promotion Foundation, an organization dedicated for promoting bamboo-based industries in the state.

This partnership focuses on policy advocacy, market development, and capacity building initiatives to support the growth of the bamboo sector in Maharashtra. By joining forces, the STRC and the Maharashtra Bamboo Promotion Foundation aim to create a conducive environment for bamboo entrepreneurship at STRC.

To foster entrepreneurship in the bamboo sector, the STRC has collaborated with the Desai Sethi School of Entrepreneurship Mumbai, Maharashtra. This collaboration focuses on entrepreneurship mentoring, providing aspiring bamboo entrepreneurs with guidance, training, and mentorship support. Through this partnership, the STRC aims to nurture and empower a new generation of bamboo entrepreneurs, seek support in bamboo product marketing and driving innovation in bamboo product at STRC.



The STRC has also partnered with Unna Motif, a company specializing in unique packaging solutions. This collaboration aims to develop bamboo-based product packaging options, promoting eco-friendly alternatives to conventional packaging materials.

Recognizing the importance of policy-level consultation, the STRC has collaborated with the Bamboo Society of India. This partnership focuses on engaging with policy-makers and advocating for policies that support the growth and sustainability of the bamboo industry.



Additionally, the STRC has partnered with Devrai Kala Gram LLP, Bhamaragad to develop bamboo-based academic and student exchange programs. These collaborations aim to integrate bamboo-related curriculum and practical training in bamboo education fostering awareness, skills development, and entrepreneurship opportunities in the bamboo sector.

Though all these collaborations, the STRC envisions creating a sustainable and vibrant bamboo eco-system that encompasses entrepreneurship, policy advocacy, market development, packaging innovation, academic programs, and community healthcare solutions.

Non-timber Forest Produce, Agri-Allied and Medicinal Plants Based Initiatives



1. Streamlining the collection mechanism for selected commercially important Non-Timber Forest Produce (NTFPs) in the Dhanora Block, Gadchiroli.

The project aims to establish sustainable livelihoods for primary collectors through scientific collection practices, promoting good storage practices, setting up a Primary Processing Centre (PPC), and facilitating market linkages.

The primary objectives of the project are as follows:

1. **Streamlining Scientific Collection and Sustainable Harvesting:** The project aims to improve the collection practices of primary collectors by implementing scientific methods and promoting sustainable harvesting of MFPs. This ensures the conservation of forest resources while enabling primary collectors to earn a livelihood.
2. **Promoting Good Storage Practices:** To maintain the quality and market value of the collected MFPs, the project focuses on establishing good storage spaces. This includes repairing existing storage structures and ensuring proper storage facilities for the MFPs.
3. **Establishing a Primary Processing Centre (PPC):** The project includes the establishment of a Primary Processing Centre (PPC) where the collected MFPs can be processed, packaged, and sold. The PPC serves as a source of income generation for the primary collectors. Technical support and handholding are provided to ensure the smooth functioning of the PPC.
4. **Market Surveys and Business Linkages:** To understand the demand for selected NTFPs the Information gathered from market surveys will be used to develop business linkages, connecting the primary collectors with potential buyers and markets through Village Level Committee (VLC). This will facilitates sustainable market opportunities for the collected produce.



Project geography—Kharkadi Cluster (10 Villages), Dhanora



*NTFP Collection at Village Level Committee (VLC)
Kharkadi, Dhanora*

Several activities have been completed under the project to date. These includes on-boarding of 200+ primary collectors who are actively involved in the collection of MFPs. The project has also facilitated the registration of a village-level committee under ATMA (Agricultural Technology Management Agency) to provide a framework for effective project implementation. Additionally, necessary financial activities were taken care of such as opening bank account for VLC, fund transfer of INR 5.23 Lakh has been transferred to initiate procurement of project assets and repairing of existing storage structures and required training has been provided to VLC members regarding maintenance book of accounts, ledger book maintenance, payment process, receipt process, bill keeping etc. 03 visits till date have been conducted to assess demand and potential buyers.

Collectively the project aims to create a sustainable model where primary collectors can engage in scientific collection practices, store the collected NTFPs effectively, process them at the PPC, and establish profitable market linkages. By supporting the primary collectors in these areas, the project contributes to sustainable livelihood generation for 200+ Primary collectors in the Dhanora Block, Gadchiroli.



Glimpses of the activities under collectivization project- NTFP Collection, Technology transfer and primary processing



2. Technology Demonstration and Transfer in Agri-Allied Sector

STRC has been regularly facilitating the “Technology Demonstration and Transfer of Agri-Allied Tools and Package of Practices” aimed to enhance paddy productivity through the implementation of the Saguna Rice Technology initiative. During the year 2022-23 STRC facilitated the demonstrations of innovative agricultural practices, low-cost agri-tools (such as the Bamboo-made Seed Spacer and Bamboo Composite poultry-Shed), and the distribution of Package of Practices with the primary objective to showcase the benefits and effectiveness of the Saguna Rice Technology and comprehensive package of practices designed to improve paddy cultivation and increase productivity and explore the opportunity to generate additional income through poultry using low cost poultry infrastructure.. The technology demonstrations involved practical sessions, on field demonstrations, and interactive workshops to educate farmers about the techniques and tools employed these initiatives.

As part of the technology transfer the Bamboo-made Seed Spacer was introduced and distributed to selected farmers. The Seed Spacer, made from bamboo, facilitated optimal spacing of seeds during paddy cultivation, ensuring proper growth and reducing competition among plants. This tool not only improved seed distribution but also helped farmers save costs by using readily available and affordable materials.

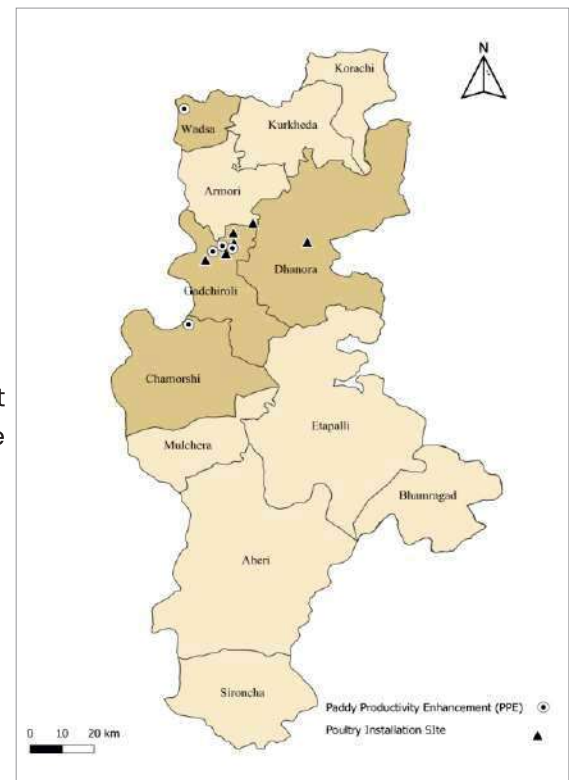


Demonstrations sessions : Bamboo Seed Spacer

In addition to enhancing paddy productivity, STRC also aimed to improve poultry infrastructure for farmers. As part of this effort, Bamboo Composite poultry sheds were distributed to 15 farmers at no cost. These sheds were constructed using bamboo and other locally available materials, providing a cost-effective solution for housing poultry. , and promote sustainable farming practices in the selected villages.

The distribution of these sheds aimed to promote poultry farming and provide farmers with improved infrastructure to support their livelihoods.

Through these interventions, the project aimed to enhance agricultural productivity, improve farmers' incomes



Map showing locations of technology demonstrations sessions conducted

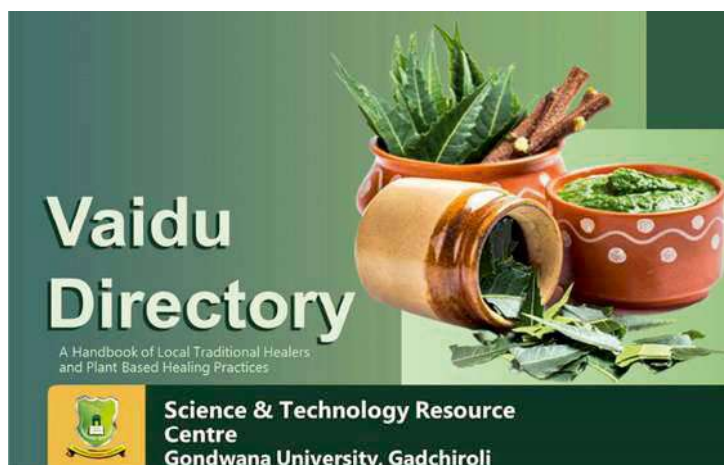


Technology adoption– Bamboo composite poultry shed

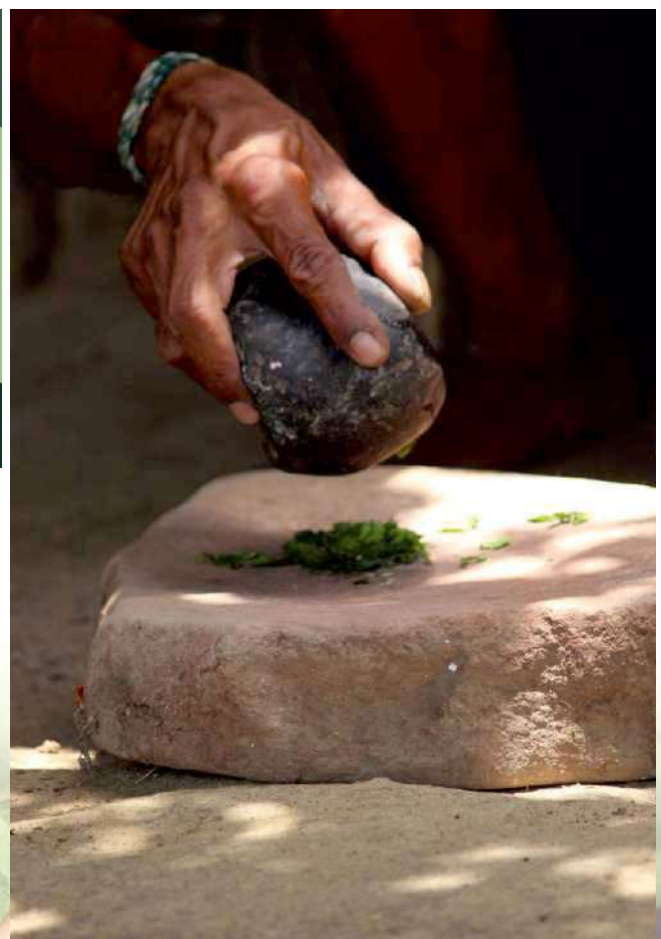
3. Development of a Comprehensive Vaidu Directory

This ongoing project focuses on the development of the Vaidu directory, a consolidated scientific documentation of indigenous medicinal knowledge and healing practices. This directory serves as a comprehensive resource that provides detailed information on local traditional healers, their history of inheritance, specialized healing methods, and scientifically validated information on the plants or plant parts used in their treatment practices. The project is currently being implemented in the Gadchiroli district and has recognized 110 traditional healers, covering 9 blocks. The primary objective of the project is to document, preserve and promote the rich indigenous medicinal knowledge of the local communities. The Vaidu directory serves as a repository of knowledge that facilitates the exchange of information and supports evidence-based healing practices. The directory includes comprehensive profiles of traditional healers, their history of inheritance and specialized healing methods.

The documentation also emphasizes the scientific evidence-based and validated information on the plants or plant parts used by the healers. This provides a crucial link between traditional wisdom and modern scientific understanding, promoting the recognition and validation of traditional healing practices. By consolidating this information, the Vaidu directory becomes a valuable resource for researchers, practitioners, and policymakers interested in traditional medicine and ethnobotany.



STRC worked in partnership with the Regional Ayurveda Research Institute in Nagpur, Amhi Aamchya Arogyasathi in Gadchiroli, and Marathwada Mitra Mandal's College of Pharmacy in Pune to advance the development of the Vaidu Directory. These organizations would typically involve engaging experts, researchers, and communities to validate the content of the Vaidu directory. Through scientific research, community feedback, and expert review, the aim would be to enhance the directory's content by ensuring its accuracy, efficacy, and relevance in the context of Scientific Healing practices.



4. Vaidya Chikitsalay

Recognizing the importance of traditional healing systems and to provide a platform for local traditional healers to showcase their knowledge and skills, the Vaidu Chikitsalaya was launched in the year 2022 serving as a platform to promote traditional healers and their healing practices while creating awareness among the general public.

The project aims to elevate status of the traditional healers and create a space for them to share their knowledge with the wider community.

Through the significant efforts, the project seeks to raise awareness about traditional healing methods and their benefits. This includes organizing workshops, seminars, and awareness campaigns to educate people about the significance of traditional healing practices. By doing so, the project aims to bridge the gap between modern medicine and traditional healing systems, fostering a more holistic approach to healthcare. It also provides them with opportunities to demonstrate their unique techniques, use of medicinal plants, and other traditional remedies.

As of now, twelve traditional healers are currently on-boarded in STRC Vaidya Chikitsalay which opens twice a week. On Wednesday and Friday.



Traditional Healer Practicing the treatment of bone fracture at Vaidu Chikitsalay

Sr. No.	Name of the Traditional Healer	Specialization
1	Shri Jitendra Narayan Deshmukh	Bone fracture
2	Shri Shriram Damaji Gajabhe	Kidney ailments
3	Shri Moreshwar Yemaji Dhakade	Kidney ailments
4	Shri Namdeo Madhav Raut	Piles
5	Shri Bhaiyyaji S. Naitam	typhoid
6	Shri Prithviraj Ramdas Shende	Skin disease
7	Shri Suresh Timaji Thakare	Diabetes
8	Shri Moroti Vistari Ghodeswar	Diabetes
9	Shri Bhumeshwar Tukaram Aade	Jaundice
10	Shri Gokul Dodku Waghade	Diabetes
11	Shri Purushottam Ganpat Pradhan	Paralysis
12	Shri Damodhar Chintaman Kuthe	Kidney ailments

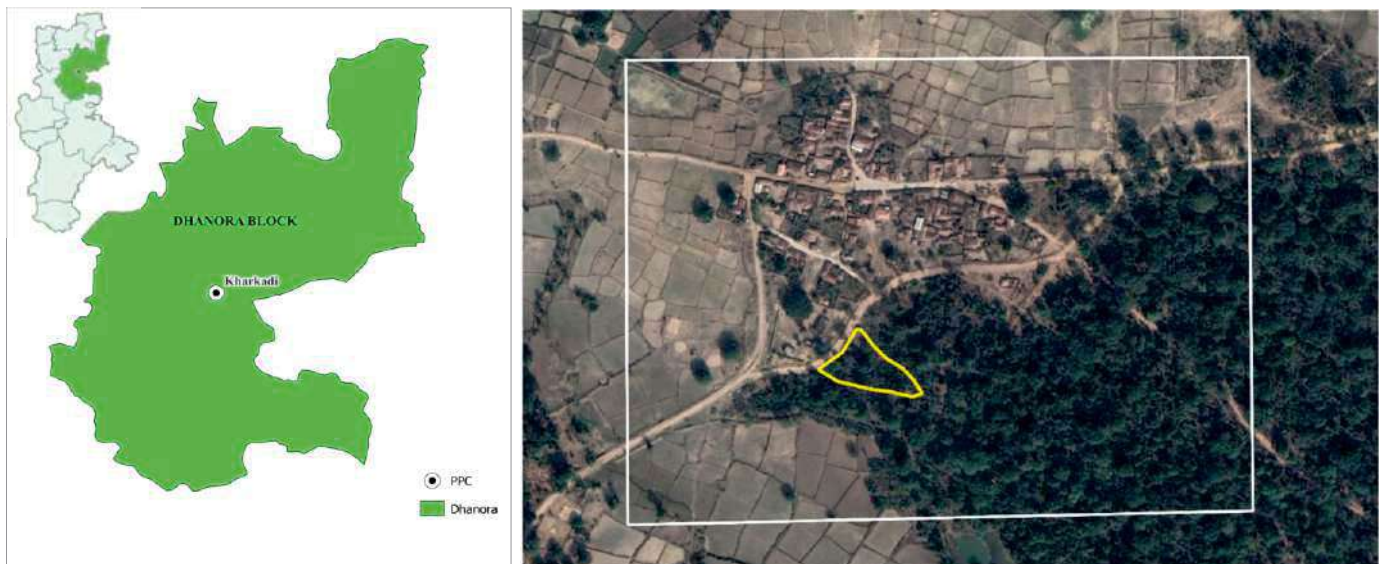
5. Establishment of community medical plants nursery at Kharkadi, Dhanora,

The project aims to establish a community medical plants nursery in Kharkadi, Dhanora, and Gadchiroli. This initiative recognizes the importance of cultivation of medicinal plants for generating a scope for conservation, serving as a experimentation plot to study seed germination, soil study, develop cultivation SOP and harvesting protocols of selective medicinal plants. The nursery will serve as a valuable resource for the local community, offering access to a diverse range of medicinal plant species that can be used for various healthcare needs.

Objectives:

1. To establish a community medical plants nursery that serves as a valuable resource for the local community.
2. To promote the sustainable cultivation and conservation of medicinal plants.
3. To encourage the community's active participation in the cultivation, maintenance, and management of the nursery.
4. To foster socio-economic development by creating employment and income-generation opportunities through the sale of medicinal plants and related products.

Progress So far: Considerable progress has already been made in the development of the community nursery. The project team has obtained the due consent of the Gram Sabha, ensuring community participation and support. This collaborative effort ensures that the project aligns with the needs and aspirations of the local community. Land preparation and demarcation have been completed as per the required guidelines and regulations. This crucial step ensures that the nursery's boundaries are clearly defined and appropriate measures are taken to protect and preserve the land. Furthermore, the land cleaning process has been successfully carried out, clearing the area of any debris, weeds, or unwanted vegetation. This prepares the site for further development and lays the foundation for creating a suitable environment for the growth and cultivation of medicinal plants.



Map showing Community Nursery plot location in Kharkadi

6. Setting-up of STRC Herbal Garden at, STRC- GUG Premise

The project aims to conserve locally threatened species of medicinal plants by establishing a medicinal plant nursery/herbal garden at STRC premises. This initiative recognizes the immediate need to protect and preserve these endangered species, which hold significant cultural, ecological, and medicinal value. The nursery/herbal garden will serve as a hub for conservation, research, and education, promoting the sustainable cultivation and utilization of these vital plant resources.

Objectives:

1. Conservation: The primary objective of the project is to conserve locally threatened species of medicinal plants.
2. Research and Documentation: The project seeks to facilitate research and documentation of the locally threatened medicinal plant species. Through collaborations with experts, researchers, and academic institutions, the nursery/herbal garden will contribute to the scientific understanding of these plants, their habitats, and their potential medicinal properties.
3. Education and Awareness: The project aims to raise awareness about the importance of conserving locally threatened medicinal plant species. Through educational programs, workshops, and community engagement, the nursery/herbal garden will promote knowledge sharing, highlighting the cultural, ecological, and economic significance of these plants.
4. Collaboration and Networking: The project aims to foster collaborations and networking with relevant stakeholders, such as local communities, botanical gardens, research institutions, and conservation organizations. These partnerships will facilitate knowledge exchange, resource sharing, and collective efforts towards the conservation of threatened medicinal plant species. At the preliminary stage of the project STRC has collaborated with Agharkar Research Institute, Pune and Shivaji University, Kolhapur for technical guidance and support.
5. Demonstration and Dissemination: The nursery/herbal garden will serve as a demonstration site, showcasing best practices in medicinal plant conservation and cultivation. The project will actively disseminate information and resources to encourage the replication of similar initiatives in other regions, thereby expanding the scope of conservation efforts.

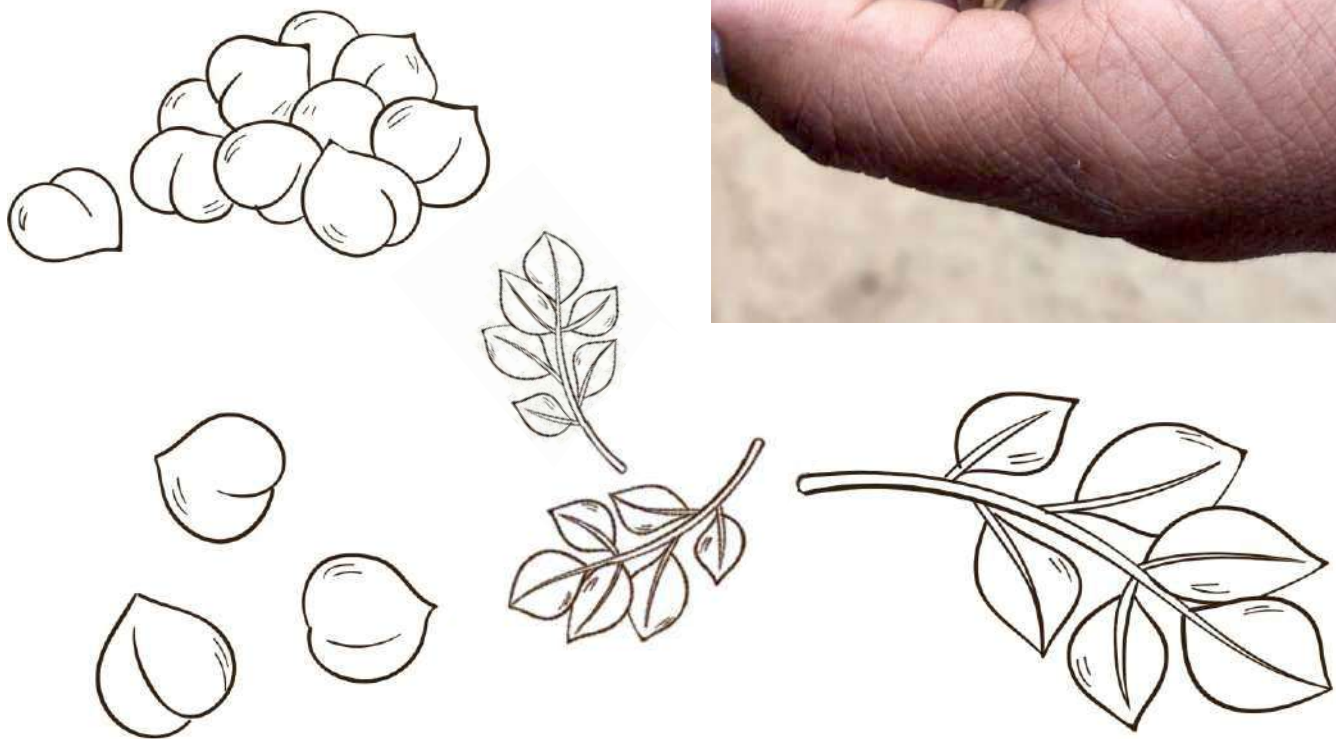


7. Establishment of STRC Seed Bank (gene bank) for conservation of commercially and ecologically important plant species in Gadchiroli district

STRC recognizes the critical need to conserve commercially and ecologically important plant species in the region. By scientifically collecting and storing seeds, particularly those of native and endangered species, the seed bank will play a vital role in preserving the genetic diversity of these plants.

Additionally, the project aims to create a sustainable seed supply source for educational and research purposes, as well as establish a well-developed nursery associated with the STRC premise's herbal garden, following scientific standard operating procedures.

By establishing a seed bank (gene bank) at the STRC Gondwana University, Gadchiroli, this project demonstrates a commitment to the conservation of commercially and ecologically important plant species. The defined objectives provide a clear direction for the project, ensuring the scientific collection, storage, and utilization of plant seeds for the benefit of education, research, and the preservation of biodiversity in the Gadchiroli district.



Academic Program Development

बांबू उद्योजकता व रचना

एक वर्षीय पदविका अभ्यासक्रम

विज्ञान व तंत्रज्ञान संसाधन केंद्र

गोंडवाना विद्यापीठ, गडचिरोली

द्वारे संचालित



1. One-Year Undergraduate Diploma in Bamboo Entrepreneurship and Design at STRC, Gondwana University

STRC has taken a significant initiative to empower the local youth in the region by offering a one-year undergraduate diploma in Bamboo Entrepreneurship and Design. This program aims to provide specialized training and knowledge in bamboo-related industries, fostering entrepreneurship, design innovation, and sustainable development. With the completion of two batches, this initiative has made substantial progress in equipping the model production unit with specialized tools and machinery required for the bamboo diploma course. Additionally, the establishment of a computer lab and interactive classrooms is underway to enhance the learning environment for the students.



Diploma Sessions at MPU, STRC

Progress and Program Infrastructure The initiative has successfully completed two batches of the one-year undergraduate diploma program in Bamboo Entrepreneurship and Design. During this period, students have gained valuable insights and practical experience in various aspects of bamboo-related industries, including cultivation, processing, design, and marketing. The model production unit, an integral part of the initiative, has been equipped with a range of specialized tools and machinery required for the bamboo diploma course. This ensures that students have access to the necessary resources and practical training to develop their skills and competencies in bamboo-related enterprises.

In addition to the production unit, the establishment of a computer lab and interactive classrooms is currently in progress. These facilities will provide upcoming students with better access to digital resources, software, and technology required for designing, planning, and managing bamboo-based projects. The interactive classrooms will promote collaborative learning and facilitate discussions on innovative ideas and techniques in the field.



Diploma Sessions at MPU, STRC

Events, Workshops, and Internship Programs:

During the academic year 2022-23, students enrolled in the bamboo diploma program were exposed to various events, workshops, and internship programs. These initiatives aimed to broaden their knowledge, enhance practical skills, and provide exposure to real-world applications of bamboo entrepreneurship and design. Events and workshops conducted throughout the year provided students with opportunities to interact with industry experts, renowned designers, and successful entrepreneurs in the bamboo sector. These interactions facilitated the exchange of ideas, insights, and experiences, inspiring students to explore innovative approaches in their entrepreneurial endeavors. Internship programs allowed students to gain hands-on experience by working with established bamboo enterprises, government organizations, and non-profit initiatives. These practical experiences provided students with invaluable exposure to various aspects of the bamboo industry, such as production, marketing, research, and policy implementation.

The combination of classroom learning, practical training in the model production unit, and exposure to industry events, workshops, and internships has enriched the educational experience of the students enrolled in the bamboo diploma program. These comprehensive initiatives have prepared them to embark on successful careers as entrepreneurs, designers, and contributors to the sustainable development of the bamboo sector. The continuous efforts to enhance infrastructure, provide practical training, and expose students to industry events and internships contributed to the program's effectiveness and its potential to create a skilled workforce for the bamboo sector.



Students During Internship Program at BRTC, Chandrapur

2. Environment Education Program for Tribal School children in Gadchiroli District

Over the period of 6 years, STRC has recognized and acknowledged the rich traditional knowledge and deep understanding of local ecosystems possessed by tribal communities in Gadchiroli. There is a recognition that this knowledge is valuable and needs to be preserved and shared with younger generations. Deforestation, biodiversity loss, and pollution are some of the major issues Gadchiroli is currently dealing with. The significance of environmental education for tribal students was made clear by the need to address these problems and promote sustainable practises. Recognizing the potential of tribal community's especially tribal children's as change agents in respective individual household and to be stewards of their own environment, the idea of empowering them through environment education program has evolved. This Program provides an opportunity to equip tribal students with the knowledge and skills to actively participate in conservation efforts and sustainable development.

This Program brings education beyond traditional classroom learning by integrating various subjects such as science, geography, history, and social sciences. By engaging tribal students in hands-on activities, field trips, and practical experiences, the program promotes a holistic learning approach that enhances their understanding and critical thinking skills. This program provides platform to Tribal students to share their unique perspectives, traditional knowledge, and experiences. It amplifies their voices, empowers them to take pride in their cultural heritage, and enables them to make positive contributions to their communities and the larger world

The program's implementation began on January 7, 2023, with a one-day workshop/training for teachers at STRC. This was critical in ensuring the program's success. The one-day training, which included the participation of 40 teachers, was enriched with interactive sessions on various modules that would be conducted throughout the program cycle.

The teachers enthusiastically participated in the workshop and expressed their full commitment to implementing the EES program in their respective schools. Their enthusiastic response and dedication provide a promising start to the project and ensure its success.



Training of Teachers Program at STRC



Education Material Developed to Facilitate EES modules

Module Implementation:

Module 1: Introduction to Biodiversity (Local Plants, Birds, Insect, Mammals etc.)

The First module of the environment education program conducted at 10 selected tribal schools was aimed at introducing the students to the concept of biodiversity. It was indeed crucial step in raising awareness among students about the importance of preserving biodiversity. The module was designed to introduce the students to the concept of biodiversity and covered the basics of common plants, animals, birds, and insects. The audio-visual medium used in the module proved to be highly effective in engaging the students and providing them with an interactive learning experience. By visualizing the different species and their role in the ecosystem, the students were able to develop a better understanding of the importance of biodiversity conservation. In addition, the module also emphasized the ecological, economical, and cultural importance of biodiversity, which helped the students to appreciate the various benefits that can be derived from a healthy and diverse ecosystem. The success of the module can be measured by the positive response and curious questioning from the students and the impact it has had on creating awareness about the need to protect our environment. The module serves as a crucial step in empowering students to take action towards preserving biodiversity and promoting sustainable development.



Glimpses of the module 1 implementation

Module 2: Understanding Ecological Processes through nature trail. (Exploring intricate relationship between plants, animals, humans etc.)

This module focused on understanding ecological processes through nature trail conducted at 10 selected tribal schools has been a transformative experience for both students and teachers alike. The module is designed to help students explore the intricate relationships between plants, animals, and insects through nature trails. The students were taken to pre-selected ecological sites for conducting outdoor sessions, where they were exposed to different ecological assets and learned about ecological processes. Education props and learning material were also designed and developed especially for this module and were used as an aids in the learning ecological processes in more effective manners. These aids includes like Bird Identification Guides, Magnifying glass, Abandoned nest of Baya Weaver, Epiphyte plants etc.

The module has been a great success, as the students have found the processes and behaviors of insects, animals, and plants to be fascinating. Through this module, they have acknowledged the importance of environmental conservation and the need to preserve ecological diversity. The students have become aware of their responsibilities as stewards of the environment and have developed a sense of ownership towards it.

The teachers have also benefitted from this module, as they have gained a deeper understanding of the importance of environment education and the role it plays in shaping the minds of young students. They have become more conscious of their responsibilities as educators and have taken a more active role in promoting environmental conservation and sustainability.



Glimpses of the module 2 implementation

3. Farmers Open School

"Farmers Open Schools" is an innovative initiative planned to be by the Science and Technology Resource Centre (STRC) to empower farmers and enhance their agricultural knowledge and skills. Under this initiative, **20 farmers** have been carefully selected and registered to participate in this unique learning program. The main objective of the Farmers Open Schools project is to create a platform where farmers can actively engage in knowledge-sharing, skill-building, and practical learning experiences. The selected farmers will have the opportunity to learn from experts in the field of agriculture, engage in peer-to-peer knowledge exchange, and explore innovative farming techniques and practices.

The registered farmers will form a vibrant community of learners who will benefit from structured training sessions, workshops, and field demonstrations sessions. These sessions will cover various aspects of farming, including crop cultivation, pest management, soil health, water conservation, organic farming practices and sustainable agricultural methods. The program will focus on both traditional and modern agricultural techniques, aiming to provide a holistic understanding of farming practices.

As the project progresses, the STRC will regularly evaluate and assess the impact of the Farmers Open Schools initiative. Feedback from the participating farmers will be collected to gauge the effectiveness of the program and identify areas for improvement. This continuous monitoring and evaluation will ensure that the project remains responsive to the needs and aspirations of the farmers.



Farmers Open School sessions facilitated by agri-experts

Applicable Research and Development



1. STRC Assistance for S & T Application Scheme

STRC has introduced an Assistance for S&T (Science and Technology) Application Scheme to support faculties, students, researchers, NGOs, and other institutions in their scientific and technological endeavours. This scheme aims to foster innovation, research, and development by providing financial and technical assistance to eligible applicants. To date, four projects have been awarded under the scheme, and an additional three proposals are currently in the pipeline awaiting final review and approval.

Projects in Pipeline: Apart from the completed project, three proposals are currently in the final stages of review and approval. These upcoming projects cover diverse scientific and technological domains, showcasing the wide-ranging interests and expertise of the applicants. Once approved, these projects will receive support from the STRC Assistance for S&T Application Scheme, contributing to further research, innovation, and knowledge creation.

List of Projects under STRC Assistance for S & T Application scheme

Sr. No.	Project Investigator	Research Topic	Institution	Status
1	Dr. Sonali B. Dhawas	Study on Sustainable Sources of Nutrients – Wild Vegetables	S. J. S. P. M. Arts, Comm. and Science College, Gadchiroli	Completed
2	Dr. Suresh B. Rewatkar & Dr. Ashwini M. Kadu	Phytochemical and medicinal study of <i>Acacia leucophloea</i> , <i>Albizia lebbeck</i> and <i>Cassia fistula</i> seeds.	Faculty of Science and Technology, GUG & Dept. of Chemistry, Bhiwapur Mahavidyalaya	Ongoing
3	Mr. Sanjay W. Patil	Employment of rural people through Mushroom Culture.	Dr. Ambedkar College of Arts, Commerce and Science, Chandrapur	Ongoing
4	Mr. Chetan A. Warade	Study of feasibility of high density plantation method (Miyawaki method) in Vidharbha region.	Anand Niketan College, Anandwan, Warora, Chandrapur	Ongoing
5	Rahul Krishna Kamble	Mahua Flower Harvester for Forest Fire Prevention	Institution of Higher Learning, Research and Specialized Studies in Environmental Science, Sardar Patel Mahavidyalaya, Chandrapur	Ongoing
6	Ms. Nusrat Babar Shaikh and Dr. S.H. Shende	Palaeontological survey of fossils at Pranhita-Godavari Valle, Sironcha.	Dr. C.V. Raman Science College, Sironcha, Gadchiroli, Maharashtra	Ongoing
7	Dr. A. M. Kuthe	Design and Development of Customised Mobility Aids Using Bamboo for Disabled Villagers	Visvesvaraya National Institute of Technology (VNIT), Nagpur, Maharashtra	Ongoing

Project Awards and Completion:

Among the projects awarded under the Assistance for S&T Application Scheme, one project has been successfully completed. This particular project focused on the nutritional analysis of seven selected wild vegetables in Gadchiroli. The objective of the study was to determine the nutritional composition, including vitamins, minerals, and antioxidants, of these indigenous vegetables.

Significant Findings and Applicability: The completed project has yielded significant findings that have practical implications. The nutritional analysis of the seven selected wild vegetables has provided valuable insights into their potential as a source of essential nutrients. The study's outcomes have identified the specific nutritional benefits of each vegetable and shed light on their potential contributions to a balanced and healthy diet.

Furthermore, the findings can serve as a basis for advocating the inclusion of these wild vegetables in government nutrition programs, Anganwadi meal planning, and community nutrition initiatives. The identification of their nutritional value can help in developing strategies to promote their cultivation, conservation, and integration into local food systems.



Glimpses from the project implementation sites

2. Product Design and Development in Bamboo

STRC has made significant progress in the field of applicable research and development, particularly in the domain of bamboo products. Four product design patents namely the bamboo poultry shed, bamboo earring, bamboo seed spacer, and bamboo trophy have been granted for innovative bamboo-based solutions and another patent application, the bamboo lotus flower is currently under review. This indicates ongoing efforts to expand our range of patented bamboo products. These patents signify the unique and original designs created by the STRC team, showcasing their expertise and creativity in harnessing the potential of bamboo.

In addition to product development, the STRC has also focused on creating low-cost toolkits for bamboo craft. This toolkit includes essential tools such as a width sizer, petal bending tool, handling tool, and petal cutting tool. These tools are specifically designed to aid artisans in their bamboo craft creations, making the process more efficient and accessible. To validate the effectiveness of the toolkit, it has been piloted at two bamboo craft workshops. The outcomes of these workshops have been significant, demonstrating the positive impact of the toolkit on the artisans' abilities to create intricate and high-quality bamboo crafts. The successful piloting of the toolkit further strengthens its potential to empower artisans and enhance the overall bamboo craft sector.

Furthermore, STRC is in the process of drafting the strategy for Applicable Research and Development. This strategy will serve as a roadmap for STRC's future endeavors in harnessing the potential of science and technology for practical applications in various fields, with a particular focus on bamboo, aquaculture and Forest resource. Once finalized, the strategy will provide a clear direction for the STRC to continue their innovative work and contribute to sustainable development through research, development, and technology transfer.

Design Patent No.	Title of the Design Patent	Status
369635-001	Bamboo Poultry-Shed	Accepted and Published, Journal No. 51/2022
369633-001	Bamboo Earring	Accepted and Published, Journal No. 51/2022
369632-001	Bamboo Trophy	Accepted
369634-001	Bamboo Lotus	Pending
369636-001	Bamboo Seed Spacer	Accepted



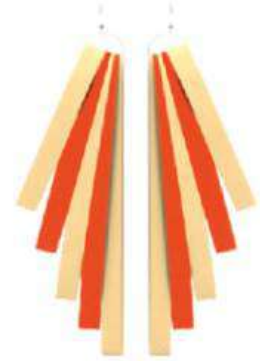
Bamboo Poultry Shed
(Design Patent No-369636-001)



Bamboo Trophy
(Design Patent No-369632-001)



Bamboo Seed Spacer
(Design Patent No-369635-001)



Bamboo Earring
(Design Patent No-369633-001)

Communication for Development through ICT



Communication for Development through ICT

This vertical of STRC is mandated to effective utilization of information and communication technologies as a support function to establish two-way community interaction platforms and using ICT as a tool for knowledge enabled development of the underserved community in the far-flung area and designing informative and educative development communication resources catering to a wide variety of audiences.

Following are modes of STRC Development Communication

1. Mobile Demonstration Unit

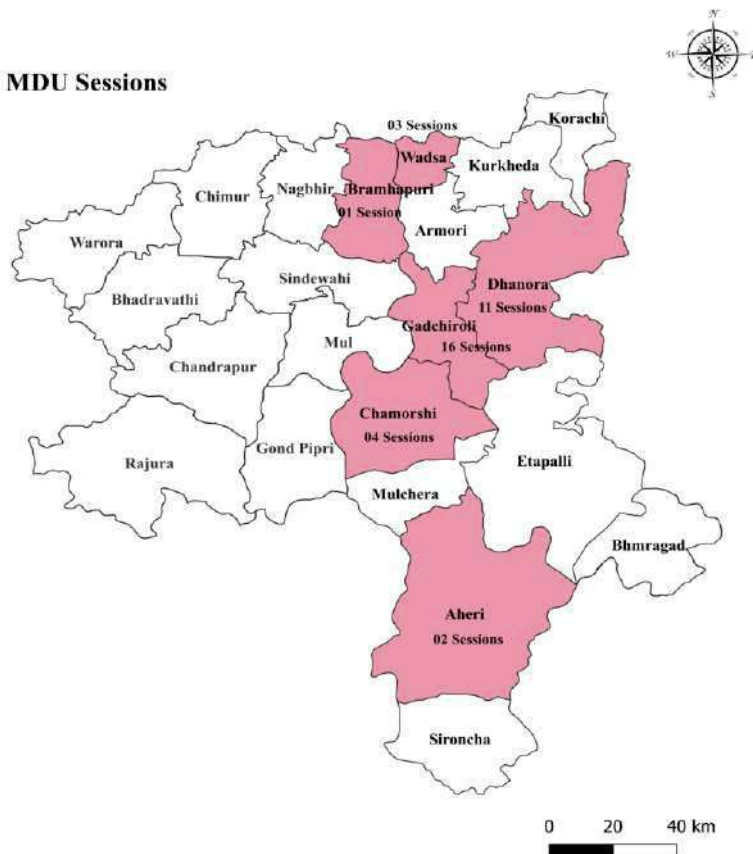
The Model Demonstration Unit is a pivotal tool of development communication that has been adopted by STRC for the past six years. This van-based audio-visual interactive platform is designed to effectively reach and engage with diverse audiences across multiple program verticals. The primary objective of the Model Demonstration Unit is to generate awareness, disseminate information, demonstrate appropriate low-cost technologies, facilitate their smooth transfer and adoption, and showcase best practices.

Over the years, the Model Demonstration Unit has made a significant impact, serving as a catalyst for positive change in numerous communities. It has reached 168 villages spanning 11 tehsils of Gadchiroli, effectively covering a wide geographical area. Through its mobile platform, the Model Demonstration Unit has conducted 197 sessions and 11 events, collectively addressing approximately 13,425 individuals.

The interactive nature of the Model Demonstration Unit enables it to engage with the local community members directly. It utilizes audio-visual tools, demonstrations, and interactive sessions to effectively communicate vital information on various developmental aspects including agri-tools and disseminate best practices in low-cost technologies. It highlights innovative and practical solutions that can be easily adopted by the local communities, contributing to their overall development and well-being. By showcasing successful case studies, the Model Demonstration Unit encourages the adoption of sustainable practices and empowers communities to replicate similar models for their own benefit.



Glimpses of MDU Sessions

MDU Sessions

Moving forward, the STRC will continue to leverage the potential of the Model Demonstration Unit by expanding its reach to more villages and tehsils. It can further diversify the content and topics covered in the sessions to cater to the specific needs and priorities of different communities. By continuously evolving and adapting to the changing landscape, the Model Demonstration Unit will remain an indispensable tool for development communication, facilitating the progress and empowerment of local communities in Gadchiroli.

2. Management Information System

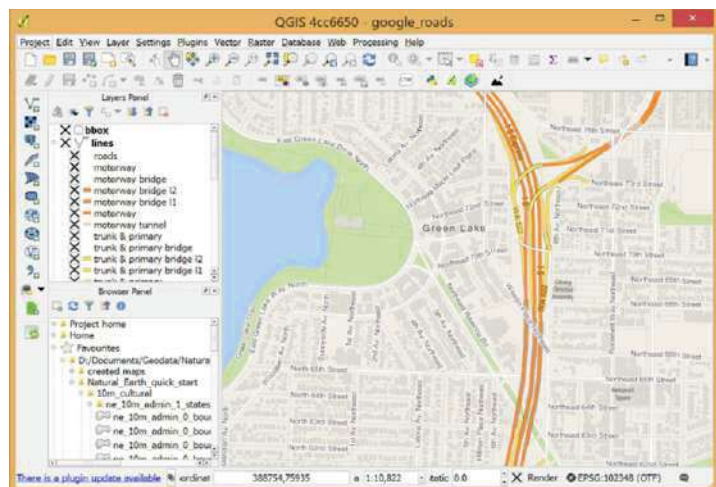
STRC has started putting efforts in the field of management information systems, specifically focusing on the scientific collection and compilation of dynamically updated databases using modern data management tools such as Q-field and Q-GIS.

Q-field is a powerful data collection tool that enables efficient and accurate gathering of information in the field. It allows STRC to collect data from various STRCs on field operations and input it directly into a database, ensuring the information is captured in a standardized format. This tool streamlines the data collection process and minimizes errors, resulting in high-quality and reliable data with geographic locations.

Q-GIS, on the other hand, is a robust geographical information system (GIS) software that facilitates the management, analysis, and visualization of spatial data. STRC has leveraged Q-GIS to incorporate geographic information into their databases, enabling them to analyze data in a spatial context. This spatial analysis capability enhances their understanding of the data and supports informed decision-making.

By employing these modern data management tools, STRC has been able to develop quick data retrieval systems. These systems enable efficient access to the collected data, allowing program team to retrieve specific information promptly. The quick data retrieval systems save time and effort, enabling the team at STRC to focus on data analysis and interpretation. To date we have able to streamline the data for 1458 beneficiaries under the different STRC programs

Additionally, STRC has developed data analysis systems (especially maps) for reporting and sharing purposes. These systems enable the extraction of meaningful insights from the collected data through statistical and analytical techniques. The analyzed data is then transformed into comprehensive reports that communicate key findings and trends. By sharing these reports, STRC strengthens their programs by disseminating valuable information to relevant stakeholders, fostering collaboration and informed decision-making.



Q-GIS Software system used to analyze the data spatially

STRC Publications



STRC Publications

STRC has made significant efforts in developing and publishing various publications aims to disseminate valuable information and insights to a wide audience. These publications play a crucial role in sharing knowledge, raising awareness, and showcasing the work and achievements of STRC. Some of the major publications produced by STRC includes

- 1. STRC newsletter:** The STRC newsletter serves as a regular publication that highlights the latest research findings, project updates, and noteworthy achievements of the organization. It provides a platform to communicate important news, events, and initiatives undertaken by STRC. The newsletter keeps stakeholders, including researchers, practitioners, policymakers, and the general public, informed about the ongoing activities and contributions of STRC.
- 2. Detailed project Report (2022-2025):** This Vision document for the next 3 years outlines STRC's strategic direction and goals for the upcoming period. It serves as a guiding document that articulates the organization's vision, mission, and objectives. The document outlines key priorities, target areas, and strategies that STRC plans to pursue in the next three years. It provides a roadmap to achieve the desired outcomes.
- 3. Vertical Brochures:** Vertical brochures are concise publications that target specific verticals. These brochures provide a focused overview of the activities under respective vertical, Brochures highlight the impact of STRC's interventions and showcase low-cost technologies, best practices, and innovative approaches.
- 4. Case studies and field stories:** Case studies and field stories are compelling publications that narrate real-life experiences, success stories, and challenges faced by individuals or communities benefiting from STRC's programs. These publications bring the impact of STRC's work to life, providing insights into the transformative outcomes and the lives touched by their initiatives

STRC Representation at Regional and National Level

1. Indian Science Congress (Tribal Science Congress), November 2022
2. AGROVISION 2022, Nagpur, November 2022
3. STRC Audio- Visuals on Sustainable harvesting of medicinal plants showcased "9th World Ayurveda Congress, Goa" December 2022
4. Indian International Science Festival (IISF), Bhopal, January 2023
5. STRC was adjudged as the 'Best Livelihood Development Idea' at the Accelerated Technology Commercialization (ATC 2.0), DSSE, IIT-Bombay, March 2023
6. NABARD Sponsored 02 STRC Artisans at Mahalakshmi Saras Mela, Vashi, Mumbai, March 2023
7. 'Bamboo Construction for Rural Maharashtra: Present Status and Future Possibilities' Jointly organized by CTARA and MBDF, Mumbai, September 2022



Glimpses of the STRC Participation in Regional and National Events

Financial Management

UTILIZATION CERTIFICATE (Provisional)

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 till July 2025
6	Amount brought forward from the previous financial year	Rs. 78,74,359/-
7	Amount received from RGSTC during current financial year (Please give No. & dates of Sanction Orders showing the amounts paid)	Rs. 1.62,00,000/- Vide Letter No. RGSTC/File-2013/DPP122/CR-70/543, Dated 15 th Dec. 2023
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. 2,40,74,359/-
10	Total expenditure in current financial year.	Rs. 1,83,71,507/-
11	Unspent balance at the end of the financial year.	Rs. 57,02,852/-
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. 1,83,71,507/- (Rupees One Crore Eighty Three lakhs Seventy One thousand Five Hundred Seven 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. 57,02,852/- (Rupees Fifty-Seven Lakh Two Thousand Eight Hundred Fifty-Two only) remaining unutilized at the end of the financial year ending 31/03/2023 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 Center
Gondwana University, Gadchiroli


Finance & Accounts Officer
Gondwana University, Gadchiroli
(Accounts Officer/Director of Research)


Registrar
(Signature of the Head of Institution)

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


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


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

STATEMENT OF EXPENDITURE (Provisional)							
Statement showing grants received from Rajiv Gandhi Science and Technology Commission, Mumbai and the Expenditure incurred the period 01/04/2022 to 31/03/2023 and requirement of funds up to 31/03/2024 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 2022 to 2023	Other receipts interest earned if any, on the grant received	Total of Col. (2+3+4)	Expenditure incurred from 01/04/2022 to 31/03/2023	Balance (5-6)	Requirement of fund for financial year 2023-2024
1	2	3	4	5	6	7	8
1. Non-recurring							
a) Equipment	2,709,527	6,000,000	0	8,709,527	5,509,282	3,200,245	8,000,000
2. Recurring				0		0	
a) Manpower	70,000	9,000,000	0	9,070,000	8,713,061	356,939	9,200,000
b) Consumables	3,163,060	500,000	0	3,663,060	3,119,549	543,511	11,000,000
c) Travels	210,000	100,000	0	310,000	194,845	115,155	800,000
d) Contingencies	1,212,574	450,000	0	1,662,574	418,963	1,243,611	500,000
e) Overheads (if applicable)	0	0	0	0	0	0	
Other if any	509,198	150,000	0	659,198	415,807	243,391	500,000
TOTAL	7,874,359	16,200,000	0	24,074,359	18,371,507	5,702,852	30,000,000

Note: Figures mentioned in the column no. 06 & 07 are as per bank statement. This is a provisional Statement of Expenditure (SoE). Issuance of final Statement of Expenditure (SoE) is subject final audited statements.

Chief Program Officer & Head
Science & Technology Resource Center
Gondwana University, Gadchiroli

Finance & Accounts Officer
Gondwana University, Gadchiroli

Principal
Gondwana University, Gadchiroli

Seal

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Science & Technology Resource Center
Gondwana University, Gadchiroli

Finance Officer
Gondwana University, Gadchiroli

Registrar
Gondwana University, Gadchiroli

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Seal

External Funding and Business Opportunities

STRC has made significant efforts in securing external funding and generating business opportunities to support its initiatives and expand its impact. These efforts have resulted in significant accomplishments, including the sanctioning of two projects under the Manav Vikas Mission, collaborative proposals to NABARD, the submission of an Expression of Interest to Maha Metro Corporation Nagpur, and receiving SIDBI support for rural entrepreneurship development in the bamboo and NTFP (Non-Timber Forest Products) sector.

Obtaining sanction for two projects under the Manav Vikas Mission is a noteworthy achievement for STRC. These projects, with a total funding amount of INR 24, 94,000, demonstrate the recognition and trust placed in STRC's capabilities and proposals. The funding received through these projects allows STRC to further its research, technological development, and social development specifically with respect to fishery communities and bamboo based communities of the region.



The collaborative three proposals submitted to NABARD, amounting to INR 118.14 Lakh, reflect STRC's commitment to sustainable agriculture and rural development. These proposals specifically focus on important areas such as Organic Farmer Producer Organizations (OFPO) in Bamboo, Farmer Producer Organizations (FPO) in Vegetable Farming, and Scientific Fishery. These collaborative proposals highlight STRC's ability to forge partnerships and secure funding for projects that enhance livelihoods and promote sustainable practices in the agricultural sector.

Additionally, STRC has proactively pursued business opportunities beyond project funding. By submitting an Expression of Interest to Maha Metro Corporation Nagpur for an STRC Outlet at the Futala Lake Complex, STRC aims to promote regional art and craft (especially bamboo craft) in a more profound way.



SMALL INDUSTRIES DEVELOPMENT BANK OF INDIA

STRC also in a process to secure support from Small Industries Development Bank of India (SIDBI) for rural entrepreneurship development in the bamboo and NTFP sector. This support will enable us to promote and nurture rural entrepreneurs, driving economic growth, and fostering sustainable livelihoods in these sectors.



Science and Technology Resource Centre

Gondwana University, MIDC Road, Complex , Gadchiroli , Maharashtra –442605

www.strc.org , Contact No. 8080219036, Email: strc@unigug.ac.in