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STRC NEWSLETTER

Science & Technology Resource Centre
Gondwana University, Gadchiroli

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

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From the CPO's Desk

Tradition, Technology, and Transformation:
Tribal Practices in Central India

Shri Swapnil Girade
Chief Program Officer and Head, STRC

Tribal communities in Central India, particularly in Gadchiroli, Chandrapur, and adjoining regions, have nurtured a living repository of indigenous technologies and cultural practices. These practices—intertwined with agriculture, forest resource management, housing, lifestyle, and craft traditions—reflect centuries of adaptation, experimentation, and wisdom. While many such practices are inherently sustainable, resource-efficient, and climate-resilient, some have become ecologically unsustainable in today's socio-economic context. To move forward, there is a need to preserve the best practices while introducing improved, eco-friendly alternatives that secure both livelihoods and ecosystems.

Non-Timber Forest Produce and Honey Harvesting

Non-Timber Forest Produce (NTFP) forms the backbone of livelihoods for tribal households. Yet, methods such as burning forest floors for mahua collection or destructive honey harvesting threaten biodiversity and long-term sustainability. Interventions like non-destructive honey collection, sustainable NTFP harvesting (eg. Mahua Harvester, Honey Harvesting Kit, High Capacity Air Blowers, etc.) and improved primary processing at source can protect ecosystems while securing steady incomes for communities.

Housing and Lifestyle Practices

Traditional tribal housing offers lessons in climate-responsive, resource-efficient architecture. Bamboo-reinforced soil walls, thatch or tile roofing, and cow dung flooring showcase ecological living at its best—combining insulation, hygiene, and natural pest control. The semi-rural evolution of tribal housing still retains these core strengths, offering low-cost, eco-friendly models that can inspire climate-adaptive rural housing at scale.

Bamboo in Everyday Life

Bamboo plays a central role in tribal livelihoods, from household utility items to agricultural implements and craft traditions. With scientific interventions such as treatment for durability, modern designs, and artisan training, bamboo practices can evolve into enterprises that drive local economies and link artisans to sustainable national and global value chains.

Fishing Tools and Technologies

Fishing practices illustrate the ingenuity of tribal knowledge. Bamboo traps designed for species-

specific catches and seasonal fishing cycles embody ecological balance. Collective fishing strategies reinforces cultural ties and knowledge transfer. With minor scientific upgrades—durable materials, hygienic handling, and safety improvements—these practices can transition into small-scale enterprises while retaining sustainability.

Indigenous Agricultural Practices

Traditional cropping decisions reflect accumulated wisdom and resilience that can be enhanced through soil moisture conservation, community-based water management, and organic pest control. Such practices can strengthen food security while preparing communities to adapt to shifting climatic conditions.

A Step Towards Technology Integration and Transformation

Science and Technology Resource Centre (STRC), Gondwana University, Gadchiroli, in collaboration with the National Innovation Foundation (NIF), has initiated a focused program to identify, validate, and pilot tribal technologies in agriculture, NTFP, bamboo, housing, and lifestyle practices. This initiative is not only preserving indigenous knowledge, but also translating it into scalable, modern solutions that align with circular economy principles.

The journey ahead is not about replacing tribal knowledge but amplifying its relevance with scientific rigor. STRC envisions Gadchiroli and Chandrapur as hubs where indigenous knowledge and modern science converge to co-create ecologically sound, economically viable, and culturally rooted solutions. Through sustained collaborations with national institutions, grassroot innovations can be transformed into mainstream technologies—contributing to sustainable livelihoods, resilient communities, and a greener future for India.


Bamboo Composite Poultry Shed Developed for Integrated Fish Farming


Portable Carp Hatchery


Low-cost Solar Dryer


Solar Hydrodistillation Unit


Bamboo Craft Tools


Mahua Harvester


Bamboo Wheel Chair

Grassroot Technologies, Developed by STRC and Technology Transfer through Collaborated Institutes

Article

After the Bloom:
The Regenerative Story of
Bamboo Flowering
in the Gondwana Region

Shri Yogesh Rakhunde
Bamboo Craft and Livelihoods, STRC

Nature's Rare Spectacle

Bamboo flowering is one of nature's greatest mysteries. Unlike most plants, many bamboo species flower only once in their lifetime—sometimes after 40, 60, or even 100 years—and then die. When this mass flowering happens, known as gregarious flowering, entire bamboo forests in the Gondwana region, including Chandrapur and Gadchiroli, can wither in just a season.

Impact on Crafts and Livelihoods

For generations, bamboo has been the backbone of the Gondwana craft economy. From baskets and mats to furniture, toys, and decorative items, artisans rely on a steady supply of mature bamboo.

But when flowering occurs:

- Raw material shortages disrupt craft production.
- Rising prices make it harder for artisans to compete in markets.
- Livelihood insecurity leaves families who depend on bamboo crafts vulnerable.

Without bamboo, traditional craftsmanship faces uncertainty, and the cultural identity tied to it is also at risk.

Seeds of Renewal

Yet, flowering is not just an end - it is also a beginning. When bamboo flowers, it produces thousands of seeds that can be collected and germinated. If managed wisely, this natural cycle can spark a renewal through plantation drives and community-led conservation efforts.

Plantation Drives for a Sustainable Future

The Gondwana region can turn challenge into opportunity by:

- Collecting seeds and setting up nurseries to protect local bamboo varieties.
- Launching community plantation drives, where artisans, farmers, and schools participate together.

- Promoting fast-growing and resilient bamboo varieties using scientific propagation.
- Integrating bamboo into agroforestry models, giving farmers dual benefits from land use.

These steps can secure a long-term supply of bamboo and ensure that crafts remain a reliable source of income.

Craft Economy Beyond Flowering

With careful planning, bamboo flowering does not need to create crisis—it can instead strengthen resilience. By linking plantation efforts with training, design innovation, and digital marketplaces, Gondwana artisans can look forward to a stable and sustainable future.

A Vision Forward

The story of bamboo flowering is a reminder of the deep connection between nature and livelihoods. If the Gondwana region embraces replantation and market innovation, bamboo can continue to be the "green gold"—supporting artisans, enriching traditions, and creating pathways from local forests to global markets.

Did You Know?

- Bamboo species flower in cycles ranging from 30 to 120 years.
- After flowering, most species die, leaving space for regeneration.
- A single clump can produce thousands of seeds during the event.
- Bamboo absorbs five times more carbon dioxide than most trees, making plantations a natural climate solution.

Call to Action

The flowering season gives us a rare chance to act. By joining hands in bamboo plantation drives, supporting artisan cooperatives, or even choosing eco-friendly bamboo products, you can help secure the future of Gondwana crafts. Together, we can ensure that every bloom leads not to decline, but to renewal and prosperity.

Dendrocalamus Strictus

Bambusa Tulda

Bambusa Bambos

Cover Story

Developing Living Herbal Classroom through Medicinal Plant Module at Schools under STRC's Environment Education Program

Gadchiroli District | September 2025

Under STRC's Environment Education Program for Schools, Module 3 on Medicinal Plants is currently being implemented across selected schools. So far, 7 out of 15 schools have been covered, and the remaining schools will be reached in the coming weeks.

As part of the module, students planted medicinal herbs such as Brahmi, Hadjod, Insulin, Aparajita, Gudmar, Vekhand and other medicinal plants under the guidance of teachers and experts. They also explored their traditional uses through interactive storytelling sessions. Teachers further encouraged students to, document traditional knowledge from grandparents, nurture the plants in groups, and share their learnings during school assemblies.

On average, 4–5 teachers facilitated 210–230 students in each school, creating an engaging and impactful learning environment.

Spotlight

Madhyamik Aashramshala Girola

Ashramshala Girola emerged as a model of enthusiastic participation. Teachers and students worked together in plantation, storytelling, and knowledge-sharing activities, transforming their school garden into a true "living classroom."

What's Making News

STRC Participation in Project Advisory Committee Meeting at RGSTC, Mumbai, Government of Maharashtra

Mumbai | 29th September 2025

Science and Technology Resource Centre (STRC), Gondwana University, Gadchiroli, had participated in the Project Advisory Committee meeting of Rajiv Gandhi Science and Technology Commission, Mumbai, Govt. of Maharashtra. The meeting was part of the Bamboo Task Force initiative, a multi stakeholder initiative to advance research in bamboo and strengthen bamboo based economy through technology integration. During the meeting STRC, Gondwana University, presented its proposal on strengthening bamboo based business ecosystem through optimum resource utilization and technology integration. STRC will be adopting cluster based approach to achieve the project goals. Shri Swapnil Girade, Chief Program Officer and Head, and Shri Gandharv Pilare, Scientific Officer, represented STRC in the meeting. The Bamboo Task Force proposal is jointly funded by RGSTC, Mumbai and Tata Trusts and co-ordinated by BAIF, Pune. The participation in this important committee highlights STRC's active role in advancing bamboo-based research and efforts towards sustainable value creation, as STRC mandated to do so.

Gondwana Crafts Product reflects the rich cultural heritage and skilled craftsmanship of the region, Admired by MLA Dr. Milind Narote, Union and State Ministers

Gadchiroli | September 2025

Dr. Milind Narote, MLA of Gadchiroli as well as legislative assembly, presented a handcrafted product from the Gondwana Craft as a mark of respect to senior leaders during a recent program at Gadchiroli.

The gifts were presented to Hon'ble Nitin Gadkari, Union Minister for Road Transport and Highways; Hon'ble Chandrashekhar Bawankule, Minister of Revenue, Government of Maharashtra; and Hon'ble Ashish Jaiswal, Minister of State & Co-Guardian Minister of Gadchiroli.

The Gondwana Craft is dedicated to promoting local artforms, culture and rural entrepreneurship. By presenting this product, Dr. Narote highlighted the rich cultural heritage and skilled craftsmanship of Gadchiroli, while reinforcing his support for community-based livelihoods.

This gesture was widely recognized as a meaningful effort to showcase indigenous craftsmanship on larger platforms, fostering goodwill and drawing attention to the potential of rural artisans at both state and national levels.

STRC Participates in World Bamboo Day 2025 Panel Discussion

Chandrapur | 19th September 2025

STRC team, led by Shri Swapnil Girade, Chief Program Officer and Head, along with Shri Gandharv Pilare, Shri Chetan Nagarkar, and Shri Yogesh Rakhunde, attended the World Bamboo Day 2025 event hosted by the Bamboo Research and Training Centre (BRTC), Chichpalli, at the Chandrapur Forest Academy.

The event, themed “Bamboo for Sustainable Future: Innovation, Design, and Livelihoods”, brought together distinguished academicians, policymakers, architects, entrepreneurs, and environmentalists to deliberate on bamboo's role in sustainability, livelihood generation, and innovation in design.

The program was chaired by Mr. M. Ramanujam (IFS), Chief Conservator of Forests, Chandrapur, with Mr. Vinay Gowda (IAS), District Collector, Chandrapur, as the Chief Guest. A keynote address was delivered by Dr. Rebecca Reubens, Founder-'Rhizome', followed by a dynamic panel discussion featuring experts including Dr. Vidya Mankar, Dr. M. B. Diagavane, Dr. Dilip Peshwe, Ar. Pradyumna Sahastrabhojne, Ar. Ashish Nagpurkar, Dr. Monikuntala Das, Dr. Gajanan

Gotmare, Ms. Prachi Mahurkar, and Dr. Tarika Dagadkar.

The STRC team actively engaged in the sessions and discussions, gaining valuable insights into bamboo-based innovation and livelihood opportunities. The program proved to be a remarkable platform for knowledge sharing and collaboration in promoting bamboo as a sustainable resource of the future.

STRC Visit to Sadashiv Agro Farms, Rajoli and Gramudyog Sangh, Bhadrawati

Chandrapur | 19th September 2025

STRC team visited Sadashiv Agro Farms at Rajoli, Dist. Chandrapur, owned by Mr. Anand Jakkulwar. His integrated farm includes poultry, mushroom cultivation, vegetables, and horticultural crops, along with a thriving beekeeping enterprise. Mr. Jakkulwar is recognized as one of the leading honey entrepreneurs in Vidarbha, and perhaps across Maharashtra.

The STRC team was joined by Shri Saduram Madavi, from the PPC project, who sought guidance from Mr. Jakkulwar in preparation for the establishment of a honey processing unit. The visit offered deep insights into scientific beekeeping practices, honey processing, and integrated farming models. Mr. Jakkulwar assured his continued collaboration with STRC for technical assistance and knowledge sharing.

Additionally, the team visited Gramudyog Sangh, Bhadrawati, a regional centre for pottery in Vidarbha. Discussions were held with local pottery artisans regarding possible training and skill development initiatives under STRC.

The visits were enriching and reaffirmed STRC's commitment to conserving traditional skills, promoting sustainable livelihoods, and supporting rural entrepreneurship through future training and collaborations.

STRC's Contribution in Successfully Catalyzing Gadchiroli District Tourism Transformation Festival 2025

Gadchiroli | 23rd September 2025

The Gadchiroli District Tourism Transformation Festival 2025 commenced on 23rd September 2025 at Niyojan Bhavan, with the presence of dignitaries from various departments and institutions in Gadchiroli.

As key stakeholder in this initiative, the Science and Technology Resource Centre (STRC) actively contributed to its success through participation in school program initiative and promoting Gadchiroli's cultural heritage through Gondwana Craft and Vaidya Chikitsalay.

Through these contributions, STRC strengthened Gadchiroli's cultural identity, promoted sustainable tourism, and supported the vision of transformation through local knowledge and traditions.

STRC's Steps Forward to Contribute in Implementing DEVA Project

Gadchiroli | 12th September 2025

As part of the DEVA – Driving Economic Values for Adivasis project, a joint initiative of the Maharashtra Information Technology Assistance Centre and Mendha (Lekha) Gramsabha, STRC has been entrusted with major responsibilities across two key components – Bamboo and Aquaculture.

During a review meeting at the Office of the Assistant Commissioner of Fisheries, Gadchiroli. Shri Swapnil Girade, Chief Program Officer and Head and Shri Suraj Gongale, Junior Scientific Officer (Fisheries) represented STRC at the meeting identifying STRC's roles and action points as follows.

Installation of Portable Carp Hatchery at Mendha (Lekha) with training component and piloting bamboo treatment at scale promoting value addition through Bamboo Charcoal Unit.

To advance these commitments on 18th September 2025, STRC joined the Assistant Commissioner

of Fisheries, Shri Samir Dongare, and his team for technical assessment of pond sites, while on 20 September, 2025 STRC team visited Mendha (Lekha) Gramsabha to assess bamboo resources. They also held discussions with Gram Sabha representatives regarding seasonal availability and the proposed site for establishing a bamboo facility.

Through these proactive steps, STRC continues to strengthen its role in creating sustainable livelihood opportunities for bamboo based communities.

Master of Social Work (MSW) Students' Academic Visit

Gadchiroli | 12th September 2025

Students from the Master of Social Work (MSW) program at Fule-Ambedkar College of Social Work, Gadchiroli, visited STRC to gain practical insights into the role of science and technology in social transformation and community development. During the visit, they were oriented on STRC's objectives, organizational functioning, and projects that support self-help groups, promote sustainable practices, enhance rural livelihoods, and foster socio-economic empowerment.

The visit highlighted the connection between social work theory and field practice, allowing students to observe participatory approaches, technology driven interventions, and community collaborations firsthand.

Queries regarding STRC's initiatives and impact were addressed, enriching their understanding of how social work, science, and technology converge to bring meaningful change. This experience reinforced classroom learning on community development, empowerment strategies, and sustainable practices, making the visit highly relevant and insightful for the MSW curriculum.

Our Latest Publications

Monthly Newsletters

Our 2024 Story
A Pictorial Representation

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

- Executive Editor -

Shri Swapnil Girade

Chief Program Officer and Head, STRC

- Graphics and Design -

Ms Priyanka Durge

Scientific Officer, Communication for Development through ICT, STRC

- Contribution -

Team STRC

Science & Technology Resource Centre
Gondwana University, Gadchiroli

Conceived and funded by Rajiv Gandhi Science and Technology Commission (RGSTC), Mumbai, Government of Maharashtra, Science & Technology Resource Centre (STRC) is an autonomous institute established in concurrence with Gondwana University, Gadchiroli in 2014. As a centre of excellence for sustainable value creation, STRC is leveraging local resources, relevant knowledge and appropriate technologies for human capacity development. STRC acts as a catalyst to science and technology based development of the under-served tribal communities of the Gadchiroli region and as a bridge between knowledge activities of the University and enhanced livelihoods in the neighborhood.

'Science & Technology Resource Centre Foundation Gadchiroli', registered under the Societies Registration Act, 1860 (XXI of 1860).

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