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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.

TECHNOLOGY | ENTERPRISE | DEVELOPMENT

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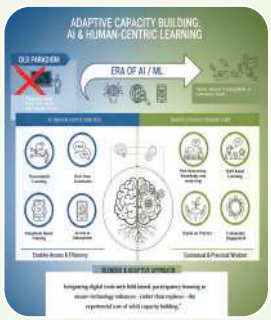

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From the CPO's Desk

Changing Perspectives of Training and Capacity Building in the Era of Artificial Intelligence

Shri Swapnil Girade
Chief Program Officer and Head, STRC

The rapid advancement of Artificial Intelligence (AI), Machine Learning (ML), and digital technologies is fundamentally reshaping how knowledge is accessed, shared, and applied. Training and capacity-building models that once relied heavily on classroom instruction and standardized curricula are now being challenged by adaptive learning systems, digital tools, and data-driven decision-making. However, in this transition, it is critical that the core purpose of training-empowering people with practical, contextual, and usable knowledge-is not diluted.

For institutions like the Science and Technology Resource Centre (STRC), Gondwana University, working closely with rural and tribal communities, the shift towards technology-enabled capacity building must be approached thoughtfully. Adult learners bring lived experience, traditional knowledge, and problem-oriented learning needs. They learn best when training is relevant to their daily work, respectful of their knowledge systems, and immediately applicable. Technology should therefore act as an enabler, not a replacement, of human-centric learning processes.

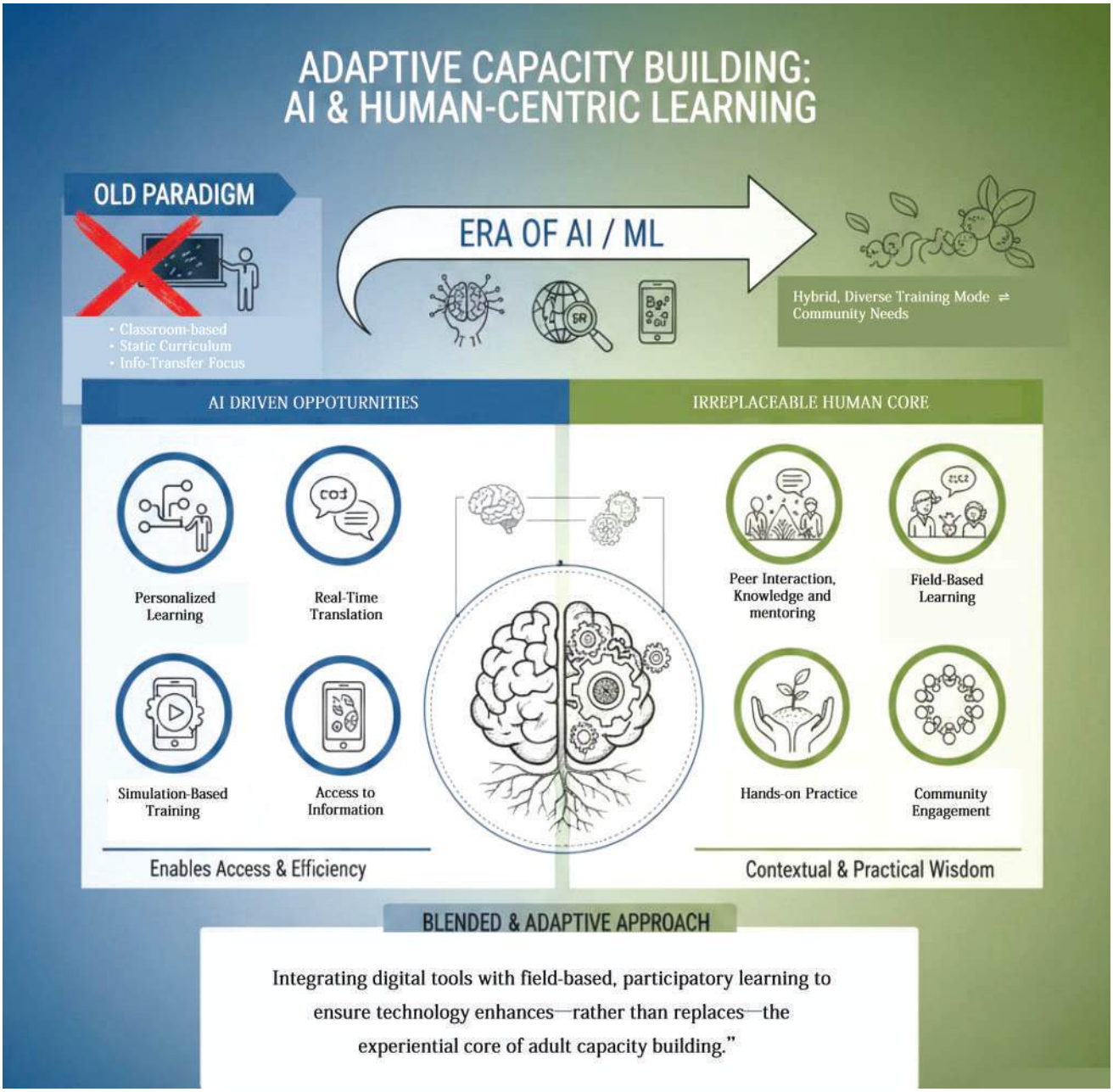
AI-driven tools offer significant opportunities: personalized learning pathways, real-time language translation, digital documentation of indigenous knowledge, simulation-based skill training, and improved outreach through mobile platforms. When used appropriately, these tools can reduce learning barriers, improve access, and enhance the efficiency of training programmes—particularly in remote and resource-constrained regions.

At the same time, capacity building cannot be reduced to digital content delivery alone. Core elements such as field-based learning, peer interaction, mentoring, hands-on practice, and community engagement remain irreplaceable—especially in areas like natural resource management, traditional livelihoods, health practices, and grassroots entrepreneurship. The risk lies not in adopting new technologies, but in adopting them without contextual adaptation.The way forward lies in a blended and adaptive approach. Training programmes must integrate digital tools with participatory methods, combine data-driven insights with experiential learning, and align modern technologies with local realities. Trainers themselves need continuous upskilling—not only in using AI-based tools, but in facilitating learning in hybrid, diverse, and intergenerational environments.

In the era of AI and ML, the role of institutions like STRC becomes even more critical—not as

technology promoters alone, but as translators between innovation and community needs. The future of capacity building lies in leveraging emerging technologies while preserving the human, cultural, and experiential core of adult learning. This balanced approach will ensure that technological progress leads to genuine empowerment, not exclusion.

Similarly, in bamboo-based livelihood and enterprise development programmes, digital design tools, online product catalogues, and data-driven market insights are being gradually integrated with hands-on skill training. While AI-enabled platforms can support design optimization, quality control, and market forecasting, the core training continues to focus on craftsmanship, material understanding, tool handling, and local production systems-areas where experiential learning is indispensable.



Article

Prawn Paddy Integrated Farming:
A Vision for Sustainable Rural Development

Ms. Rutuja More
Scientific Officer,
Aquaculture & Livelihoods, STRC

India possesses vast inland aquatic resources, including about 2.03 million hectares of reservoirs, 2.38 million hectares of ponds and tanks and 0.798 million hectares of beels and oxbow lakes. Of this potential, nearly 0.9 million hectares are already being utilised for fish culture across the country. Among the important freshwater species, Macrobrachium rosenbergii, commonly known as the Giant Prawn (GP), holds significant importance.

In India, the culture of this prawn is widely practised in rice fields, effectively integrating aquaculture with paddy cultivation and enhancing the productive use of inland water resources. Being an indigenous species, GP is naturally distributed across all major river systems along both the east and west coasts of India. With minimal additional effort, this species can be successfully integrated into existing farming systems, as it is compatible with major carp species. The availability of standard breeding and culture techniques will help in expanding the culture operations

Synergy between Aquaculture and Agriculture: Ecological Gains

The system also provides important ecological benefits. Prawns feed on insects, weeds, and organic debris in the field, helping to reduce pest incidence and the need for chemical pesticides. Their movement improves soil aeration, while organic residues enhance soil fertility. As the same water supports both paddy and prawns, overall water-use efficiency improves, making the practice environmentally sustainable and well-suited to fragile ecosystems.

Economic Resilience of Integrated Prawn Paddy Farming:

Prawn cum paddy farming provides significant economic benefits to farmers by generating dual income from a single field. In addition to the primary paddy harvest, farmers can collect prawns during and after the rice-growing season, creating an important supplementary source of revenue. This integrated approach reduces production risk as farm income is not reliant on a single crop. Even when paddy yields are affected by climatic stress or seasonal variability, prawn harvests help buffer losses and ensure more stable and resilient farm earnings.

Sustainable Livelihood Opportunities:

Prawn cum paddy farming can positively impact the social community by strengthening livelihood

security and reducing economic stress among rural and tribal households. Farming creates opportunities for women's Self-Help group's small and marginal farmers. Activities such as seed rearing, feed preparation, harvesting, processing, and local marketing can generate employment at the village level. Freshwater prawns also have good local market demand, strengthening the rural economy and reducing dependence on external supply chains. Attractive market prices and demand in both export and domestic markets are other positive points for taking up GP culture. Improved access to protein-rich food also enhances household nutrition, making the system socially inclusive and community-empowering

Future of Prawn cum Paddy Farming in Gadchiroli:

Gadchiroli district has strong natural suitability for prawn cum paddy integrated farming due to its high rainfall, seasonal waterlogging in paddy fields and widespread availability of freshwater bodies. Many paddy fields remain inundated for long durations during the monsoon, creating ideal conditions for freshwater prawn culture alongside rice. This system allows farmers to utilise the same land and water resources more efficiently without disturbing traditional paddy cultivation practices.

In the long term, prawn cum paddy farming can represent a climate-resilient and nature-based livelihood option. It can support income diversification, food and nutrition security, and ecosystem conservation. With focused institutional support and community participation, this integrated farming system can emerge as a sustainable and replicable model for the Gadchiroli district.

Cover Story

Grassroots Technologies for Rural Development: STRC-NIF India Initiative Launched in Gadchiroli

Gadchiroli | December, 2025

Science and Technology Resource Centre (STRC), Gondwana University, Gadchiroli, has launched a village-level technology initiative to promote low-cost grassroots technologies for farmers, youth, and women in the district, with support from the National Innovation Foundation–India (NIF–India).

Based on local needs assessment, STRC facilitated the approval and transfer of seven applied technologies from NIF–India for field-level dissemination. The initiative focuses on creating opportunities for technology-based employment and self-employment, particularly in tribal and rural areas.

As part of the rollout, demonstrations and hands-on training were conducted for the Multi-Food Processing Unit and Multi Tree Climber technologies. The Multi Tree Climber was demonstrated at Kondawahi village (Dhanora Block) in the presence of the innovator, Mr. Shrivardhan from Coimbatore, with participation from local farmers engaged in palm and toddy tapping while Multi-Food Processing Unit demonstrations conducted at STRC premise showcased value-added products such as juice, jam, jelly, ketchup, soap, and gel using locally available fruits.

In the coming months, additional technologies—including cotton wick-making, multi-commodity grinding, leaf plate and bowl making, maize shelling, and bamboo strip and rod making—will be introduced for community demonstration and training.

Through this initiative, STRC aims to strengthen rural livelihoods, promote women-led micro-enterprises, reduce time and cost in agricultural processing, enable local production of quality goods, and support village-level industrial development in Gadchiroli district.

What's Making News

STRC Conducts ToT Workshop on Environmental Education for School Teachers

Gadchiroli | December 3, 2025

STRC organized a one-day Training of Teachers (ToT) workshop on 3 December 2025 under STRC's Environmental Education Programme for School Children. The workshop aimed to strengthen teachers' capacities to integrate environmental themes with classroom instruction.

The training focused on aligning five pre-identified environmental themes with experiential learning methods and relevant school curriculum concepts, with emphasis on improving classroom engagement and concept delivery. Teachers who were unable to attend earlier training sessions were also included in this programme. The workshop was facilitated by Dr. Asmita Redij, Researcher and Educational Advisor to STRC. Organisational coordination was undertaken by Ms. Manjusha, Junior Scientific Officer, and Ms. Zeenat Sayyed, Field Assistant, STRC.

Considering the predominantly tribal and rural background of students, the theme "Pond and River Ecosystems" was selected for detailed discussion. The sessions included structured activities and discussions on pond ecology, rainwater harvesting practices, and biodiversity associated with local water bodies, enabling teachers to contextualise environmental concepts using familiar surroundings. The workshop contributed to strengthening school-level environmental education by equipping teachers with context-specific pedagogical tools and practical approaches suitable for rural and tribal learning environments.

Linking STEM Education with Community Needs: CPO & Head STRC Shares Perspectives on Community Centric STEM Engagement at National Workshop- Gadchiroli

Gadchiroli | December 12, 2025

Shri Swapnil Girade, Chief Programme Officer and Head, Science and Technology Resource Centre (STRC), Gondwana University, Gadchiroli, addressed the prize distribution ceremony of a three-day national capacity-building workshop titled "Empowering STEM Students for Community Engagement and Career Exploration through Samvaad."

The workshop was organised by the Society for People Action in Rural Service and Health (SPARSH), Gadchiroli, with support from the National Council for Science & Technology Communication (NCSTC), Department of Science & Technology (DST), Government of India, and was hosted at

Gondwana Sainiki Vidyalaya, Gadchiroli. The programme focused on enabling STEM students to connect academic learning with community-based challenges and to explore socially relevant and emerging career pathways.

In his address, Shri Girade outlined the mandate and operational approach of STRC within Gondwana University, highlighting selected field-based science and technology interventions related to livelihood generation, technology deployment, and community-centric innovation. He emphasised the importance of applying scientific knowledge to real-world contexts and encouraged students to pursue career paths that integrate technical competence with social responsibility. The interaction provided students with practical perspectives on applied science, community engagement, and technology-led development, reinforcing the relevance of STEM education in addressing local and societal needs.

Integrating Women into Bamboo Craft Value Chains: STRC Initiative

Gadchiroli | December 3, 2025

STRC in collaboration with Arogya Prabodhini, organised a two-day skill development training programme on bamboo jewellery making for women's. The programme was conducted at Kondhala (Wadsa Block) and Kitali (Armori Block) under the leadership of Dr. Suryaprakash Gabhane.

The training provided hands-on exposure to the complete bamboo jewellery production process, including raw material selection and preparation, component fabrication, finishing, and final product development. Technical guidance was provided by STRCs Master Trainers- Ms. Shweta Bawane and Ms. Bhagyashri Mashakhetri and the programme was supervised Shri Chetan Nagarkar and Shri Yogesh Rakhunde. (Junior Scientific Officers, STRC) A total of approximately 25 women participated across both training locations.

Women who successfully completed the training will be engaged as product-specific suppliers under STRC's Gondwana Craft initiative, based on market demand. This linkage is intended to facilitate regular production engagement and income generation through organised craft value chains. The training programme contributed to strengthening skill-based livelihood opportunities for single women while supporting the promotion of bamboo-based handicrafts through structured institutional support.

STRC Participation

STRC Showcases Grassroots Innovations and Local Crafts at Gadchiroli Mohotsav–2025

Gadchiroli | 26-27 December, 2025

Science and Technology Resource Centre (STRC), Gondwana University, Gadchiroli participated in Gadchiroli Mohatsav–2025, presenting grassroots technologies and locally developed products aimed at strengthening rural and tribal livelihoods. STRC showcased products developed under the Gondwana Craft initiative, along with grassroot innovative technologies supported by the National Innovation Foundation–India (NIF–India). The exhibition stall featured bamboo handicrafts, pottery, Rock Dhokra, Gond paintings, and locally sourced value-added food products, which received encouraging public response.

In addition, STRC showcased live demonstrations of livelihood-support technologies such as the Multi Tree Climber, maize sheller, and bamboo strip-making machine, highlighting their local relevance for employment generation and cost reduction in local agri practices. The participation reflected STRC's focus on practical, low-cost, and community-centric innovations that promote entrepreneurship among farmers, youth, and women. It also demonstrated the integration of traditional knowledge with modern science and technology for sustainable livelihood development.

Through its presence at Gadchiroli Mohatsav–2025, STRC gained a wider platform to disseminate its rural development initiatives and further strengthened Gondwana University's efforts toward inclusive, innovation-led local economic development opportunities.

STRC Participates in IISF–2025, Chandigarh under RGSTC-Led Maharashtra Pavilion

Chandigarh | 6-9 December, 2025

Under the umbrella of the Rajiv Gandhi Science and Technology Commission (RGSTC), Mumbai, Government of Maharashtra, the Science and Technology Resource Centre (STRC), Gondwana University, Gadchiroli participated in the India International Science Festival (IISF–2025) at Chandigarh as part of an RGSTCs one of the flagships projects based on the CILLAGE approach.

Each year, under the leadership of RGSTC, selected institutions from Maharashtra are facilitated to participate in IISF to present science and technology–based programmes, applied research outputs, and field-validated innovations. STRC has been participating in this initiative on a regular basis, representing Gondwana University through rural and tribal context–specific science and technology interventions.

At IISF–2025, the RGSTC-led Maharashtra Pavilion also received the **Jury Mention Award**, recognizing the technical quality, implementation relevance, and national contribution of initiatives showcased under the RGSTC framework, including projects presented with STRC's participation. The science festival provided a structured platform for STRC team members to interact with national research organisations, scientists, policymakers, and implementation agencies, enabling focused exchange on technology dissemination models, applied research frameworks, and institutional collaboration mechanisms relevant to underserved regions.

STRC's participation was led by Shri Swapnil Girade, Chief Program Officer and Head–STRC, along with Junior Scientific Officers Shri Chetan Nagarkar and Ms. Manjusha, who represented the centre at the RGSTC pavilion. Participation under the RGSTC flagship initiative strengthened the national visibility of Gondwana University's science and technology interventions and contributed to building pathways for future research collaboration and field-level technology deployment.

Gondwana University Participates in National Educational Workshop–2025 at Surat, Gujrat

Surat | 25-28 December , 2025

Gondwana University, Gadchiroli actively participated in the National Educational Workshop–2025, a national-level academic event held from 25 to 28 December 2025 at Surat, Gujarat. The workshop was jointly organized by Sardar Vallabhbhai National Institute of Technology (SVNIT), Surat and Veer Narmad South Gujarat University, with support from Shiksha Sanskriti Utthan Nyas, New Delhi.

The workshop focused on the theme “Contribution of Education in a Developed India”, with sessions covering value-based education, skill-oriented and technical education, Indian Knowledge Systems, research and innovation, promotion of Indian languages, and implementation of the National Education Policy (NEP)–2020.

Gondwana University collectively represented by its Best Practices including EKAL, Science and Technology Resource Centre (STRC), TRICEF, CIIIT, the “University in Your Village” programme, and the Gosekhurd Project. A 12-member delegation comprising faculty members, academicians, scientific officers, and support staff participated in the event.

The university showcased its technologies, community-based educational and research initiatives, informational materials, experiential models, and multimedia presentations through exhibition stalls, highlighting its work in rural and tribal regions on a national platform.

The participation was undertaken under the guidance of Hon'ble Vice-Chancellor Dr. Prashant Bokare and the leadership of Hon'ble Pro Vice-Chancellor Dr. Shriram Kawale. The engagement strengthened the university's national visibility and created opportunities for future academic and research collaborations aligned with socially relevant and Indian knowledge-based initiatives.

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).

www.strc.org.in | strc.gug@gmail.com | +91 7588762147

STRC, Gondwana University, MIDC Road, Complex, Gadchiroli - 442605