STRC STATUS REPORT

CURRENT AND FUTURE PERSPECTIVE

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ABBREVIATIONS

BRTC - Bamboo Research & Training Centre, Chichpalli

C4D - Communication for Development

CFC - Common Facility Centre

CIFA - Central Institute of Freshwater Aquaculture, Bhubaneswar

CMRC - Community Managed Resource Centre

FD - Forest Department

FRI - Forest Research Institute, Dehradun

FRLHT - Foundation for Revitalization of Local Health Traditions

ICT - Information & Communication Technology

IEC - Information, Education and Communication

IIFM - Indian Institute of Forest Management, Bhopal

IRMA - Institute of Rural Management, Anand

MANAGE - National Institute of Agricultural Extension Management, Hyderabad

MPU - Model Production Unit

MSBDB - Maharashtra State Bamboo Development Board, Nagpur

NABARD - National Bank for Agriculture and Rural Development

NBM - National Bamboo Mission

NFDB - National Fishery Development Board, Hyderabad

NIRD - National Institute of Rural Development, Hyderabad

NMPB - National Medicinal Plant Board

OFRU - Ornamental Fish Rearing Unit

PCH - Portable Carp Hatchery

PDKV - Dr. Panjabrao Deshmukh Krushi Vidyapeeth, Akola

PPC - Primary Processing Centre

RGSTC - Rajiv Gandhi Science & Technology Commission, Mumbai

STRC - Science & Technology Resource Centre, Gadchiroli

TISS - Tata Institute of Social Science, Mumbai

TRTI - Tribal Research & Training Institute, Pune

TKDL – Traditional Knowledge Digital Library

STRC STATUS REPORT

Science & Technology Resource Centre (STRC), at Gondwana University, Gadchiroli (GUG)

Purpose:

To present STRC progress and current status since inception four years ago and mapping projections for next 2-4 years for overall institutional growth

Preamble:

Science & Technology Resource Centre is envisaged to become a centre of excellence in sustainable value creation with the primary mandate to design and develop science and technology-based livelihood enhancement opportunities for the overall development of the local communities. STRC is to act as a catalyst in S & T development of the region and as a bridge between knowledge activities of the University and enhanced livelihoods in the neighborhood.

This report present various institutional, programmatic and overarching aspects of STRC's current status and mapping the future growth as we move ahead. Internal consultations among STRC staff have been useful and Valuable inputs from RGSTC seniors are sincerely appreciated.

Key takeaways are stated below.
I. **Current Programs and Future Prospects** (growth and sustainability of existing and proposed programs)
II. **Existing HR and Future Requirements** (competency and expertise of core group and proposing an advisory need-based scientific experts' group, etc.)
III. **Funding and Self-sustainability** (RGSTC parent funding, opportunities in future and how to generate funds)
IV. **Autonomy Status** (Section-8 registration, compliances etc.)
V. **Infrastructure Needs** (Training Space/ Classrooms and Development of R & D ecosystem)
VI. **Institutional Collaborations Framework** (for appropriate technologies, business templates, for design & entrepreneurship etc.)

*It is proposed to hold '**One – Day Brainstorming Session' at STRC-GUG during the last quarter of 2020** for which this document along with the STRC DPR would serve as a template. Experts and stakeholders from the state as well as outside are expected to be invited. The express purpose is to infuse STRC with visionary inputs.*

Elaborations on Key Takeaways:

I. **Current Programs and Future Prospects -** Growth and sustainability of existing and proposed programs
Science & Technology Resource Centre (STRC) currently has four active verticals around which our programs to implement various S & T based livelihood enhancement and knowledge enabled development interventions have been designed. Namely -
   a) *Vertical 1: Aquaculture & Livelihoods*
   b) *Vertical 2: Bamboo Craft & Livelihoods*
   c) *Vertical 3: NTFPs/ Med. Plant & Other Livelihoods*
   d) *Vertical 4: Applicable R & D and Academic Program Development*,
    and
   e) *Multi-modal initiatives (Items 9 – 12 below)*

Broad objectives are summarized below.

01. STRC as a low-cost, user-friendly rural **Technology Facilitator:**

The root lies in understanding and identifying technology needs in rural livelihoods. Many institutes in India do research in the field of appropriate rural technology. STRC is now in a position to expose

itself to such technologies which can be customized or tweaked to suit the local needs. **STRC is also constantly endeavoring to engage in *in situ* technology development.** STRC needs to play the role of a technology facilitator to ensure smooth transfer, hand-holding and adoption of such technologies in the context of Gadchiroli District.

Action Points:
a. We are revisiting implementation strategies through field surveys and impact assessment under each initiative
b. Specific actions are being taken to understand local technology needs
c. Seeking collaboration opportunities with PDKV, VNIT, IIT-B etc.
d. Working on various mechanism to bring in identified technologies for transfer and adoption

02. STRC as a **Community Enabler** through training, capacity building and handholding support for technology transfer and IEC mode:

Local youths to be capacitated to become technology facilitators and 'change agents' to help smooth dissemination of simple and low-cost technologies such as *harida* decorticator, bamboo harvester, manual weeders, solar drier, oil expellers, soil-testing kits, portable carp hatcheries etc. STRC is in a position to provide need-based training and handholding support and generate focused group awareness in this aspect.

Action Points:
a. For smooth dissemination of identified technologies, selected youths to be capacitated to play the role of Facilitators/disseminators
b. We are in discussion with Chandrapur Forest Academy (CFA) to provide us facilities and infrastructure to carry out training/ capacity building activities
c. For on-field introduction of such low-cost user-friendly technologies, focus group demonstrations using STRC's Mobile Demonstration Unit (MDU)
d. **Community Radio (CR):** A low-budget socio-technical activity in local tribal languages - Gondi, Madia - for effective communication. A CR platform would work as a means of knowledge exchange among communities and would provide a voice to the local community; Central Govt. schemes available

03. STRC as a hub to support **Applicable R & D and Incubation** for faculties, students, researchers and possibly NGOs:

Incubation centers play major role in converting ideas to develop businesses and deal with rural S & T needs. With its access to many prime institutes in India STRC can collaborate to become a hub for applicable R & D and incubation for local students and researchers in Vidharbha. Students and researchers can submit relevant ideas to STRC through **S & T applications scheme** and STRC can provide hand holding support and roadmaps to carry out further research and take ideas to the next level. An Aqua-One Centre as a 'One-Stop-Shop' to provide hands-on technology solutions in aquaculture and a Model Production Unit for bamboo product prototypes and related R & D at STRC level, whereas, Demonstration Plots for good agriculture and sustainable harvesting practices, Common Facility Centre for preliminary bamboo craft and installation of Portable Carp Hatcheries for fish seed production would act as field level R & D platforms.

Action Points:
a. Developing a R & D ecosystem is the prime goal and S & T Application scheme is one vital step in this direction;
b. Cultivating relevant research ideas and providing platforms to carry out such pilots will immerge as a support to core STRC functions;
c. Seeking collaboration opportunities with GUG, University Colleges, Reputed NGOs in the region.

04. STRC as a **Technical Nodal Centre/ Consultant Partner** for local government:

State/ local government has many interventions in Gadchiroli which have techno-social aspects in their implementation. STRC can co-create, design and evaluate technology-based programs for local government. STRC would act as the technical support centre while govt. counterparts and local NGOs implement those programs.

Action Points:
1. Periodic discussions with district level Govt. counterparts have led to understanding of various schemes and projects currently being implemented in Gadchiroli, need to assess STRC's role as a Technical Nodal Centre in relevant projects
2. An idea to bring on board, a Scientific Knowledge Group comprising of experts in Plant Science/ Taxonomy, NTFP, Rural Technology, Enterprise Development & Marketing, Senior Fishery Expert, an expert in large-scale techno-social project management would support this
3. Various departments under the district administration have gradual y understood the kind of role STRC can play, need to expedite processes to get STRC involved directly in such schemes, especially with KVK, District Agriculture and Fisheries Dept., MSRLM, Zilla Parishad, ATMA, MAVIM etc.
4. STRC can also garner some district level funds to play the said role

05. STRC as a **Data Centre/ Information Hub** for local scientific and economic development:

Data is everything and this has been a key activity suggested in the DPR. Even though huge data is available on internet, it is difficult to get specific data out of it. STRC can manage Gadchiroli region specific data and can generate primary level data and make information available for intervention design. Specific and validated data on resource availability, resource use pattern, economic potential of resource and data analysis for optimum usability in the region can also be provided for different user groups and field research, and simultaneously can work on making technology accessible for various interventions.

Action Points:
a. In this context, we are trying to develop a Data Centre along with a Digital Library to create a solid database for the region. IIT Bombay and the up-coming Data Centre at Gondwana University can play supporting role in this regard
b. Beneficiaries in this effort would be self-initiated/ collaborative projects, local governments and research agencies

06. STRC as an **Academic Program Development Centre** to create skilled/ competent and certified cadre or workforce of rural youths especially women in collaboration with Gondwana University, Gadchiroli:

Along with the one-year under-graduate diploma in bamboo enterprise and design, more such Diploma/ Certificate courses related to NRM and rural livelihoods can be conceptualized, customized to suit local needs in collaboration with Universities and institutes.

Action Points:
a. Under implementation:
   To institutionalize award of grants under S & T Application Scheme with support from GUG and rolling out one-year undergraduate diploma in Bamboo Enterprise and Design from this academic session through Gondwana University, Gadchiroli
b. To initiate talks with IRMA, IIFM, NIRD/ MANAGE and TISS to introduce certificate courses of 3 to 6 months duration in NRM, NTFP marketing, and enterprise development etc.

07. STRC as an **Entrepreneurial Support/ Facilitation Centre** to help develop small scale sustainable businesses in Bamboo Craft, NTFPs, Agri-allied and Aquaculture:

STRC can begin to play a role of business facilitator by providing entrepreneurial support to IDC and/ or STRC trained Bamboo Artisans to start with and gradually move to replicate similar efforts in community level NTFP marketing (through Primary Processing Centers) and Aquaculture (through Ornamental Fish Rearing Units, Fish Seed/ Feed Marketing etc.). STRC can train young entrepreneurs on the basics of legal aspects of firm, business cycle and related technical knowledge and support initial funding/ seed money.

Action Points:
a. Collaborating with **Social Alpha** to develop business templates for Bamboo Craft and NTFP Marketing.
b. MoU is in place to collaborate with MAVIM at local level to develop women entrepreneurs
c. STRC has taken steps in this direction to develop CFC for Bamboo at Kondawahi and PPC for NTFP at Dhanora

08. STRC as a **Scientific Collaborator** with local/ regional/ national resource agencies, institutes and universities:
STRC has opportunities to develop meaningful collaborations with research laboratories, ICAR institutes and Universities to collaborate on specific research needs on subjects that STRC deals with, including appropriate technologies for enhancement of rural livelihoods.

Action Points:
a. STRC would like to propose collaborations for general scientific research in local plant medicinal & aromatic plants resource, bio-technology, tissue culture, chemical analysis of plants, introduction of new species etc.
b. Specific institutional collaborations for project level research and funding to be sought with Agharkar Institute- Pune, TKDL- New Delhi, FRLHT- Bangalore, NFDB- Hyderabad, NMPB- New Delhi, CIFA- Bhubaneswar, TRTI- Pune, IIFM- Bhopal and FRI- Dehradun etc.

09. Role of Mobile Demonstration Unit (MDU) for Effective Outreach and IEC Activities:

STRC initiatives on natural resource dependent S & T based livelihood enhancement with resourceful engagement of communities and local government through the MDU - this has proven to be a very successful intervention. MDU platform is used for effective communication with and disseminating information among local communities to help them make viable and informed choices. MDU is being utilized as a mobile platform for demonstration and dissemination of low-cost rural technologies, creating awareness on best-practices and success stories elsewhere, ideas on business potential of available resource and its sustainable utilization and so on. MDU so far has covered about 7 thousand kilometers moving around 36 remote villages in 05 talukas of Gadchiroli conducting thematic focused group on-field sessions to mobilize communities and bring them on board.

Relevant content and thoughtfully designed field sessions would be taken to next level to help create more impact and to reach a wider audience.

10. Development of a Potential CILLAGE Concept:

CILLAGE ecosystem- In the knowledge era, with emphasis on capability and capacity building of rural youth in terms of holistic education, appropriate technology and enhanced livelihood, would need knowledge bridges to be built between cities and villages, and the creation of an ecosystem which has been conceptualized as a "CILLAGE" — a synergistic combination of city and village.

Kondawahi, a resource rich village in Dhanora taluka of Gadchiroli has shown promise to become a knowledge and rural tech hot-spot. To begin with, Kondawahi is being developed as a Model Bamboo Craft Village with an idea to channelize the interest and tap in to the potential of the village youths. STRC has developed a reasonably equipped **Common Facility Centre** for Bamboo Craft and ensured access to natural bamboo available in the vicinity. It has given opportunity to mobilize local artisans

(trained by STRC) to work under one roof. Looking at the overall resource potential (land/ forest/ water) of the village, STRC has also introduced **high value vegetable cultivation** through modern horticulture techniques and gradually trying to mobilize them to get in to small scale aquaculture, primary processing of forest produces and advance agriculture. Kondawahi has the potential to set precedent and become a replicable on-field model for STRC in future. This initiative has made STRC realize that CILLAGE concept is the way to go, and has the opportunity to develop and replicate this effort as a CILLAGE model.

11. Integrated Dhanora Development Plan (I-DDP) as a family centric multi-layered livelihood enhancement approach:

I-DDP with its unique family centered mandate to provide multiple income generating options to each family has begun to take shape. It especially targets resource poor/ marginal yet interested communities willing to put in own efforts. Currently in its Phase-I, we have planned to implement these following five interventions;

  i. Small Scale Backyard Poultry (20 HH)
  ii. High Value Vegetable Farming (25 HH)
  iii. Ornamental Fish Rearing Unit (OFRU) & Fish Seed Distribution (40 HH)
  iv. Establishment of CFC & Bamboo Plantation (10 Artisans/ 01 Village)
  v. Marketing of major NTFPs (01 CMRC- 10 SHGs)

(Sericulture and Medicinal Plant Cultivation has been kept out for the time-being considering the need of more in-depth viability analysis along with risks/assumptions and Very Low-Cost Solar Cooker will be taken forward after finalization of prototype. Publicity/ demonstration plan for the same is being prepared)

Successful implementation of these pilots in the first cycle is expected to motivate more and more families to come on board.

12. Thoughts on a New Vertical – 'Revenue Stream':

Along with the existing four verticals, STRC to developing a **Revenue Stream** to cater to the need for creating opportunities in Rural Entrepreneurship and Business Development for the local youths, especially for youth including women with basic education and aptitude. A cadre of skilled and certified youth with interest and aptitude towards entrepreneurship to be capacitated to understand the nuances of running small scale businesses; STRC can facilitate business development, provide seed funding support and in turn create a mechanism to gain share in profit. **Social Alpha** as a knowledge partner can play an important role in this aspect.

13. Future Scope of Externally Funded Projects:

Currently STRC is implementing two projects in herbal plants, being externally funded by Department of Science (DST), Govt of India and National Academy of Science India (NASI). Both these projects are in to their second phase and has a lot of potential to expand its scope well beyond the project period. Under the Indigenous Medicinal Knowledge (IMK) project funded by NASI, along with its major objective of documenting traditional knowledge, STRC has proposed to introduce extension activities such as prevention of malaria, providing due recognition to and registration of local *Vaidus* and instilling knowledge of plants available around and their use among school children through additional sessions and herbal gardens. This would provide a new dimension to the project. Under DST funded Herbal Plant Propagation project, though we have begun the project satisfactorily, there are a few challenges that are beyond our control, in particular, meeting the timelines. However, efforts are on to bring the project on track and as we move along, farmer mobilization for planting materials distribution and on-farm cultivation following prescribed PoP would be done. This project holds promise in terms of scientific phyto-chemical analysis of selected and other important species using lab testing and propagation at the existing poly-house.

II. **Existing HR and Future Requirements** (competency and expertise of core group and proposing an advisory need-based scientific experts' group, etc.)

During 2019, the staff designations, remuneration and structure was modified in line with current trends. It may be noted that the entire staff functions on annual contract basis. **STRC is led by a Chief Program Officer & Head.**

Present Core Staff:

Program Staff:
- Scientific Officer: 04
- Junior Scientific officer: 02
- Field Staff (Local Resource Persons): 04

Finance and Admin Functions:
- Finance & Accounts Assistant
- Admin & HR Assistant
- Office Assistant (temporary)
- Driver Cum Field Assistant for MDU Van

Externally Funded Project Staff:

DST: Project Supervisor, Field Assistant, Unskilled Labour and Watchman - two vacancies
NASI: Recruitment in progress

The existing core scientific program team of STRC is proposed to be strengthened with experienced professionals as under:

a. **Program Coordinator(s):** Techno-social project development & management in NRM or rural development with leadership and fundraising skills. *So far this position has remained vacant for want of suitable candidates.*
b. **Scientific Officer(s):** For Agri/ Rural business development and marketing, applicable R & D in rural technologies, with good implementation monitoring and scientific documentation skills.
c. **Junior Scientific Officer(s):** Primarily for execution of on-field implementation of Agri-allied/ Forest based/ off-farm livelihood initiatives, knowledge of IT enabled services & data efficiency
d. **Visiting experts:** Short term (1-6 months) subject experts as per felt need, remuneration negotiable.

Items a, b and c need to have annual/ bi-annual pay revision based on work performance.

Additionally, an **advisory non-permanent need-based scientific experts' group** to provide (remote and hands-on) support to STRC projects/ interventions. Expertise is sought in the fields of Plant Science/ Taxonomy, NTFP, Craft industries/ MSME, Advanced Aquaculture, Rural Technology, Enterprise Development & Marketing, ICT and Communication for Development (C4D) and so on, as also an expert in large-scale techno-social project management etc. This could always have members from the existing Program Advisory Board, which anyway needs to be reconstituted following due process.

III. **Funding and Self-sustainability** (Where we stand with RGSTC parent funding, what/ where are the opportunities in future and how to generate funds)

STRC till date has complete funding support of RGSTC- Mumbai. Out of the total sanctioned amount of INR 15.70 Cr., STRC has so far received INR 7.00 Cr., mostly for basic infrastructure and primary program development. Along with RGSTC funding, STRC has been able to garner

funding support from two major projects i.e.; DST funded Herbal Plant Propagation project amounting to INR 41.44 lakh (INR 24.65 lakh received) and NASI funded Indigenous Medicinal Knowledge (IMK) project amounting to INR 15.0 lakh (INR 7.50 lakh received). In addition to these, a few small grants of about INR 6.0 lakh has been mobilized from various sources.

Although the remaining parent funding support from RGSTC- Mumbai would help STRC strengthen its existing programs and infrastructure for a few years, we have already begun to focus on the program sustainability aspects, the key lies in designing of programs with due consideration to useful technology development, field applications, techno-economic viability, long-term sustainability, replicability and gradual mobilization of funds from various national/ state/ regional funding sources.

Large scale Govt. schemes/ programs being implemented in the region such as State Rural Livelihood Mission, Tribal Development Department, Ministry of AYUSH/ NMPB, National Bamboo Mission, Blue Revolution Scheme/ NFDB, Agriculture Department, skill development and capacity building support from TRTI etc. which presents good opportunities of fund mobilization for STRC. NABARD-Maharashtra has expressed interest to collaborate and provide funding support in a few livelihood enhancement interventions in Gadchiroli.

Tapping the CSR funds is another option, so is providing consultancy services as a Technical Nodal Centre for the local govt/ private agencies. We are trying to engage with various agencies in this regard.

Development and sustainable existence of community assets such as Common Facility Centres (CFC), Ornamental Fish Rearing Units (OFRU), Portable Carp Hatcheries (PCHs), Primary Processing Centres (PPCs) etc. will create opportunities for revenue generation. Simultaneously, developing and enhancing the scope of Model Production Unit (MPU) for bamboo craft and NTFP processing, Aqua One Centre (AOC) for scientific fishery related services, establishment of Nodal Training Centre and rolling out various diploma and certificate courses for creating cadre of skilled and certified youth is projected to garner revenues for STRC.

IV. **Autonomy Status** (Section-8 registration, compliances etc.)

After series of discussions and approval by GB-STRC, we are presently going ahead with a Section-8 registration under Indian Companies Act 2013 and have initiated required efforts in this regard. Soon modalities to be finalized for accord of approval, names for the board, approval to hire services of a C.A. and related issues.

V. **Infrastructure Needs** (Training Space/ Classrooms and Development of R & D ecosystem)

STRC has a documented commitment for 4.5 acres of land at GUG, of which only 1.23 acres is in its possession. STRC's new premise is a **planned semi-permanent structure on this part of land** that has become functional since February 2020, having:

- Office Space 900 Sq. ft. *(Can accommodate 25 staff including 05 visiting faculties/ experts)*
- Conference Hall/ Digital Classroom 600 Sq. ft. *(Can accommodate 40 persons)*
- Library & Data Centre 600 Sq. ft. *(Can accommodate 2000 books/ space for DC)*
- Space for Model Production Unit (MPU) 1200 Sq. ft. *(Can accommodate 15 machine assembly-line and 20 artisans)*
- R & D and Incubation space 800 Sq. ft. *(Can accommodate 3 incubation spaces)*
- Dormitory (for male and female, 12 Beds)
- Vehicles *(Owned – one, Hired – 02 including project vehicle)*
- Multi-purpose open space of about 5000 Sq. ft. *(for open seminars, science exhibitions for 100 participants) and development of herbal gardens*

For in-house community trainings, classrooms for certificate courses, to accommodate more staff, incubation space and of course, developing newer initiatives among other things in coming years, STRC must have additional/ exclusive space that is agreed to for such purposes.

VI. **Institutional Collaborations Framework** (for appropriate technologies, business templates, for design & entrepreneurship etc.)

Currently STRC is in collaboration with the following agencies/ institutes:

- **Forest Department, Gadchiroli:** Projects on Medicinal Plants and other Forest Resources (MoU valid through June 2020)
- **MAFSU - Nagpur:** Projects on Fresh Water Aquaculture & Poultry (MoU valid through 2021)
- **IIT - Bombay (Bamboo Studio/ IDC):** Projects on Capacity Building, Product Prototypes & One Year Diploma (MoU valid through 2020)
- **Social Alpha:** In talks regarding developing Business templates for rural entrepreneurships (RGSTC MoU)
- **MAVIM - Gadchiroli:** NTFP Marketing & establishment of PPC (MoU near finalization)

STRC has a lot of potential to develop meaningful collaborations in future such as with **Chandrapur Forest Academy (CFA)** for Training, Capacity Building & Other Resources. With **Dr. Panjabrao Deshmukh Krushi Vidyapeeth (PDKV)** for need based user-friendly low-cost Agriculture Technologies, and **VNIT- Nagpur** on off-firm rural technologies etc. This list is for local institutions.

Concluding Remarks:

The proposed '**One – Day Brainstorming Session' at STRC-GUG during the last quarter of 2020** for which this document along with the STRC DPR, would serve as a template. Experts and stakeholders from the state as well as outside are expected to be invited. The express purpose is to infuse STRC with visionary inputs. Inputs from this interaction would go into defining/ trimming the future course of action, may be a mid-course correction, with GB-STRC providing the final impetus.

***********end of report**********