



SCIENCE & TECHNOLOGY RESOURCE CENTRE

GONDWANA UNIVERSITY GADCHIROLI

**ANNUAL
REPORT**

**2017-18
2018-19**

STRC

A centre of excellence for sustainable value creation
conceived & funded by

Rajiv Gandhi Science & Technology Commission (RGSTC), Mumbai, Government of Maharashtra

FOREWORD

Dear Reader,

These two years have been progressively forth coming for us at Science & Technology Resource Centre (STRC)! We've been tirelessly fortifying our unstinting efforts towards up-liftment of the tribal communities. Over the past few years, STRC has grown as an organization as its mandate has been put through scrutiny, revised and refined multiple times over as we move ahead towards a state which ensures optimal results.

Year 2018 has assumed special significance as STRC has acquired sufficient momentum in terms of projects received and work done. The journey from 2014 to 2016 has been marked with challenges, and upheavals yet hope was never far behind. Over the last couple of years I'm proud of the fact that STRC's concept is now firmly anchored and is gaining traction based on my staff's commitment to service. Thus far STRC's various initiatives and programs have been appreciated for its uniqueness. Our slew of undertakings is also recognized by our partners for its depth, scope and extent. Over a few year time frames, our interventions have touched the lives of over 1000 families in direct or indirect way across 4 tehsils, with increased quality of life choices.

Medicinal plant cultivation (MPC) has been the pivotal program launched by STRC with the realisation that it has potential to become a credible and alternative source of livelihoods. During the last few years of its operations under 'Agriculture' and 'Bamboo based livelihood' programs, STRC plans topilot many innovative ideas and technologies, hitherto unheard of in these remote tribal blocks.

Since we live in an increasingly digitised and information laden world, the true value of local content and processed information is obvious to anyone. Towards this end we submitted a full-fledged research proposal for documentation of 'indigenous medicinal knowledge in forest fringe communities in Gadchiroli district' to National Academy of Sciences in India (NASI) I note the award of that project with pleasure. I am also pleased to acknowledge that we have successfully secured prestigious 'DST' project.

Import of 'livelihood diversity' cannot be underrated. This is why STRC counts 'aquaculture', 'bamboo', and 'innovation' amongst its core pillars. Over the last couple of months STRC team managed to secure external funding from federal agencies and increased our visibility amongst scientific community. Women empowerment and community well-being are at the heart of STRC's program with an aim to continue to contribute to village up-liftment with various community and livelihood initiatives. These women and the community at large have assumed the role of progressive leaders and 'local change agents' in their march towards development.

To conclude, I would like to thank those who have contributed and guided STRC over this productive journey of transformation. We look forward to your continued support over the years to continue making a sustainable difference to the marginalised.

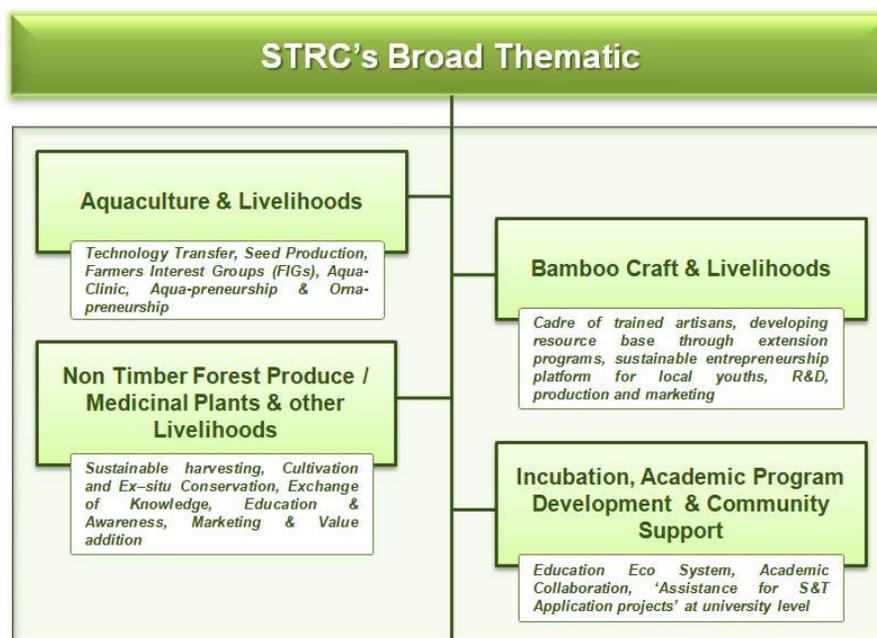
**Chief Program Officer
STRC-GUG**

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1. Reflections

In the last 12 months, STRC has been able to bring a team of young professionals on board with expertise in Agriculture, Aquaculture, Horticulture, Environment Engineering, Forestry, Information Technology etc. With the team on board and keeping the STRC mandate in mind, the following four broad thematic or domains have been developed aligned with STRC's vision:



Thematic Block Diagram

Activities under Current Thematic:

A) Livelihoods through Aquaculture:

- Collaborative two year pilot initiative with MAFSU as technical partner on sustainable technology transfer in fish farming in 10 sites, 03 blocks and 08 Fish Cooperative Societies- Project completed (2016-18)
- Joint proposal with MAFSU/ CoF, Nagpur on development of organised fish seed production (Eco-hatcheries) through Farmers' Interests Groups (FIGs) in five talukas of Gadchiroli (2019-2022)
- Establishment of ornamental fish rearing unit, specific to Women Self Help Groups
- Aquaculture Policy Draft: making it workable amongst stakeholders
- Institutional Collaborations: National Fishery Development Board, CIFA etc.

Highlights:

- Revenue generation by 6 SHG's from Kurkheda and Armori taluka's from Aquaculture based livelihood project.
- Four (04) one day workshops on a wide variety of topics, including 'entrepreneurship development', 'aquaculture policy' 'S&T component in aquaculture' 'Fisheries workshop' and a Producer buyer meet were jointly organized by Agro-vision

foundation and STRC. A buyer-seller meet to bring large producers from Nagpur/ Chandrapur and local fishermen communities on one platform to discuss business opportunities was organized during March 2018.

B) Bamboo Craft & Livelihoods:

- IDC- IIT Bombay (02 projects): a) Training of Trainers & b) One year diploma in Bamboo Craft (2019-20)
- Developing a core pool of master trainers: Skill Trainings, Production Workshops/ Elementary production initiatives on 'Utility Craft'
- Model Bamboo Craft Village: To enhance and enrich bamboo resource base (raw materials), Developing Local Artisans Group, Common Facility Center (CFCs), Mass Production & Market access
- R & D: Designers, Design Interns, Range of Product Prototypes, Market Platforms, Exhibitions/ Exposures
- Institutional Collaborations: IDC- IITB, MSBDB, Forest Department- Gadchiroli

Highlights:

- Ten master craftsmen/women were trained to become Master Trainers and put through rigorous academic program at IIT-IDC Bombay.
- Two bamboo programs were put together; an elementary one and other one is more advanced in association with MAVIM and Bamboo Development board, respectively.

C) Non Timber Forest Produce/ Medicinal Plants/ Other Livelihoods:

- Herbal Plant Propagation Project-Funded by Dept. of Science & Technology, Govt. of India
- Indigenous Medicinal Knowledge-Funded by National Academy of Sciences India (NASI) & STRC
- NTFP Marketing: Linking primary collectors to processing units/ large buyers/ pharma companies by strengthening existing structures/ formal groups on ground like Collector's Group/ Community Managed Resource Centres (CMRCs) to streamline NTFP collection. Primary Processing Units at community level as part of the CMRCs
- Integrated approach in Medicinal Plant Cultivation/ Sustainable Harvesting and Horticulture crops
- Development of Nurseries (Medicinal Plants/ Horticulture crops) and Demonstration Plots
- Other viable initiatives like small scale Backyard Poultry, Community initiative in post-cocoon Sericulture: Feasibility studies done, proposals are being reviewed
- Institutional Collaborations: Agriculture Department, District Sericulture Dept., Dept. of Poultry MAFSU, KVK, MAVIM & MSRLM etc.

Highlights:

A Demonstration Plot was developed at Kaneri village of Gadchiroli, with an aim to demonstrate ideal Package of Practice (PoP) and post-harvest processes to local farmers.

- A one day workshop on Cultivation of Commercially Important Medicinal Plants and its best practice was conducted at Gondwana University Gadchiroli during April 2017 in collaboration with Agrovision, Nagpur

D) Incubation, Academic Program Development, Community Support:

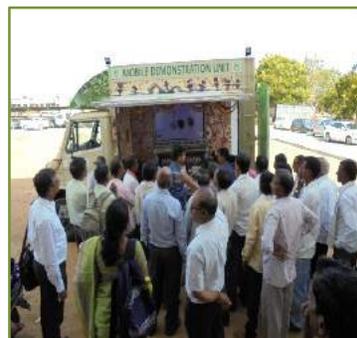
- ‘Assistance for S&T Application projects’ at university level (RGSTC Scheme to be implemented)
- Creating space/ ecosystem for incubation and research
- Certificate Course Modules for Artisans/ Supervisors to be developed with GUG faculty and outside experts; to also introduce diploma/degree courses at GUG at a later date.
- Communication for Development (c4d): Interactive platforms for Scientific Knowledge Group, Community Interface, Academicians & Institutions
- Institutional Collaborations: Foraging partnerships with Wildlife Conservation Trust in Science Education Space, IIFM Bhopal in NRM etc.

A major New Activity: Integrated Dhanora Block Development Plan (I-DBD)

- a) Integrated need based site specific livelihood interventions in 02 Clusters of 05 village each will be implemented in a phased manner (02 villages from each cluster in the 1st phase)
- b) The ‘Family/ House hold’ as the unit of intervention, phase-wise implementation. A total of 250 Families have been short-listed, out of which at least 50% would have multiple intervention.
 - Bio Resource Centre
 - Model Villages
 - Medicinal Plant Cultivation, Horticulture, Aquaculture, Poultry, Bamboo Craft, Low Cost Solar Cooker

MDU’s role as a multipurpose overarching tool for education and awareness:

Van based AV interactive platform cutting across all projects – IEC, Awareness generation, Technology Transfer, Best Practices and so on. MDU benefitted 1000 odd families across the district. Mobile Demonstration Unit (MDU) under the ‘Vanoshodhi Abhiyaan’, initiated its efforts in 13 villages of Armori Block where 20 field sessions were conducted. Through the effort, STRC and its mandate could reach to local communities, especially marginal farmers, with regard to promotion of Medicinal Plant Cultivation as an additional / secondary livelihood option.



2. An Introduction to STRC

Science & Technology Resource Centre (STRC), an autonomous institute at Gondwana University Gadchiroli, conceived and supported by Rajiv Gandhi Science & Technology Commission (RGSTC), Mumbai, GoM, is positioned as a centre of excellence for sustainable value creation, entrusted with generating livelihood opportunities by deploying appropriate S & T, particularly for the backward and marginalized tribal communities of Gadchiroli region.

The agency is shepherded by operations team led by Chief Program Officer whose implementation in turn is overseen Governing Body (GB). The GB is chaired by Shri. C.D. Mayee and it is based in Nagpur. Amongst others the guiding principle of its constitution is as following: To design, develop and deploy applicable technologies and usher in economic value in the lives of its beneficiaries.

Rajiv Gandhi Science and Technology Commission (RGSTC) is a GoM undertaking. It came into existence by legislative enactment. RGSTC, back in 2012, convened a meeting of development experts, opinion shapers, and retired scientists in order to brainstorm and produce a workable solution. The topic under consideration was development of 'backward regions' in the Maharashtra and ways of mitigating worst consequences of deprivation. Under able leadership of *Padmavibhushan Shri Kakodkar*, it was felt that a unique agency needs to be crafted to consolidate gains and unify all development related efforts in the Gadchiroli district. So was STRC born! As a centre of excellence STRC not only intends to be a nodal agency in terms of livelihood generation but also hopes to become a knowledge hub in the district.

Vision for STRC for the coming years:

- To develop STRC as a centre of excellence with state of the art facilities for applicable S & T, research & development and an information hub for the region
- To design and develop natural resource based livelihood upgrade and sustainable revenue generating models with access to market place, and encouraging and enabling local youths with various entrepreneurship platforms
- To forge successful collaboration with local, state and national level institute and agencies to implement various livelihood programs

STRC Mandate

Is to embed high degree of scientific rigor into our program and elevate the 'development discourse' to a level where new found gains may result from our slew of efforts. In order to achieve those goals, STRC envisages to:

1. Record, recognize and augment local skills and traditional knowledge and to explore avenues for enhanced livelihood in the region;
2. Ensure sustainable and productive use of the forest and other natural resources of the region;
3. Be a regional knowledge resources for various state programs;
4. Ensure all round development that is representative and inclusive through training and research;
5. Ensure opportunities and markets for the communities.

In addition, STRC contributes by designing/catalyzing products, services and practices along with upgrading human resource that deliver all round local area development. Some of our projects: underway/in pipeline are as follows:

1. NTFP: Scientific propagation and cultivation practices for medicinal plants (DST/STRC), documentation of indigenous medicinal knowledge (NASI/STRC), MDU and marketing
2. Sustainable livelihoods: through intervention of scientific fisheries technology (MAFSU/STRC)
3. Bamboo craft and livelihood: (IIT-B/STRC)Capacity building exercises for master craftsmen/ training programs for SC/ST community (MAVIM/STRC).

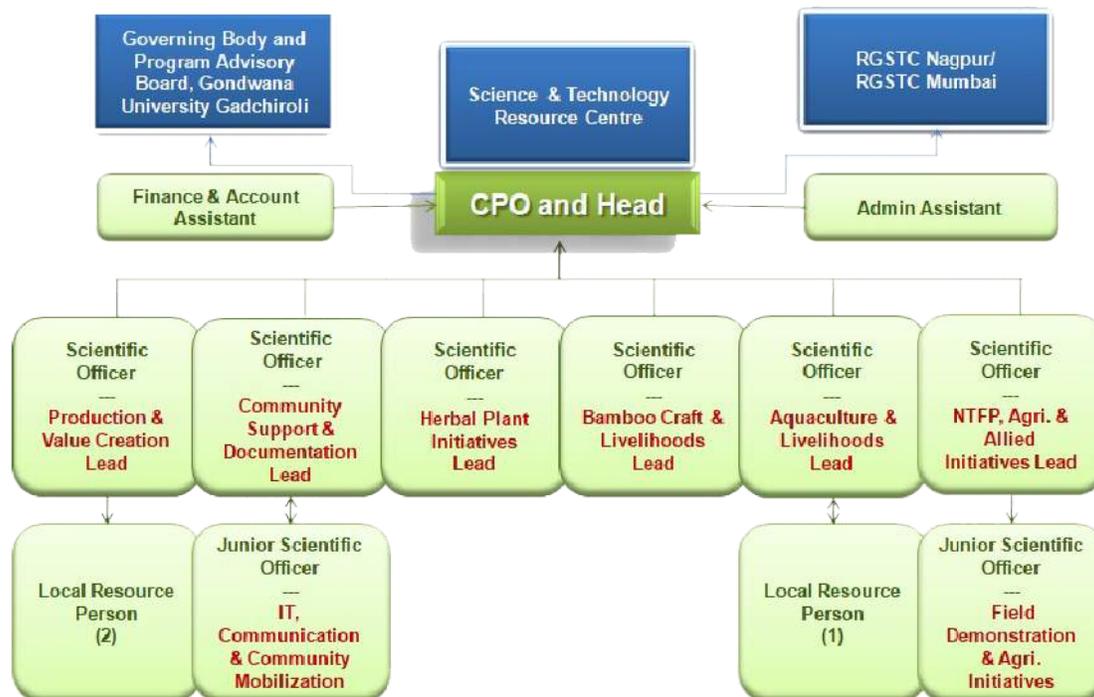
Moreover, STRC achieves what it has set out to achieve by disaggregating its founding vision into small but achievable steps.

STRC is firmly of the view that one of the most preferred ways of making change is to:

1. Translate an idea into project mode;
2. Convert a proposal into a collaborative effort (where complementarities exist);
3. Transform efforts into compelling case studies;
4. Decode complex development jargon into comprehensible initiatives.

The role of each staff, their designations and its place in the grand scheme of things is visualized as follows

Organization Organogram



* Specific Staff [07] under projects externally funded by Department of Science & Technology (DST) & National Academy of Science (NASI).

3. Thematic Updates

Theme I: Aquaculture and livelihoods

Aquaculture comprises diverse systems in fish farming in inland water bodies. Various types of aquaculture form an important component within agricultural and farming systems development. The technologies such as fish seed rearing and grow-out culture of high yielding fish varieties have potential to provide assured income and livelihood to the farmers in the village and tribal communities of Gadchiroli.

In Gadchiroli district like agriculture, aquaculture has also various dimensions and scales of operation. Seasonal tanks are perhaps one of the potential resources for promoting aquaculture development in district. The success of fish culture in these seasonal tanks will depend exclusively on the timely availability of quality fingerlings.

Keeping in mind, College of Fishery, Nagpur has done a project on '*Sustainable livelihood of tribal population of Gadchiroli district through intervention of scientific fisheries technology*'. The scientific fisheries technologies such as fish fingerling production, grow-out culture of carps and Pangassius fish were transferred to the tribal Women Self Help Groups in the District. The ten water bodies at various places in the district were selected to demonstrate these fisheries technologies. The results of the effort have shown remarkable increase in aquaculture activities. The members of these tribal Women SHGs were trained on fish seed identification, stocking management, feed and water quality management and also on preparation of value added fish products for additional income. The fish culture at most of these village ponds was successful and few of the beneficiaries have expanded their fish production by excavation of new ponds.

Table 1. Sites selected for demonstration of fish culture.

Sites below 2000 m ² area (Kurkheda Block)	Murumgaon, Tah. Dhanora	Shitalamata Women SHG
	Tavetola, Tah. Dhanora	Gondwana Women SHG
	Tavetola, Tah. Dhanora	Jai Birsa Munda Women SHG
	Yerkadi, Tah. Kurkheda	Laxmi Women SHG
	Khedegaon, Tah. Kurkheda	Jai Santoshi Women SHG
	Khedegaon, Tah. Kurkheda	Jai Santoshi Women SHG
Sites approx. 4000 m ² area	Devipur, Tah. Armori	Nav Adarsh Fish. Co. Society
	Gurunuli, Tah. Kurkheda	
	Perimili, Tah. Aheri	Durga Women SHG
	Aldandi, Tah. Aheri	Jai Persapen Women SHG

Table 2. Seed stocking, fingerling production and revenue generated by SHG's

Sr. No	Site (Kurkheda Block)	Seed Stocked In lakh (Spawn)	Fingerling Production	Fish fingerling sale (nos.)	Revenue Generated by SHG (Rs)
1	Khedegaon I	1.50	30,000	15000	9000/-
2	Khedegaon II	1.50	30,000	15000	9000/-
3	Yerkadi	1.50	30,000	15000	9000/-
4	Murumgaon	3.00	60,000	30000	18,000/-
5	Tavetola I	3.00	60,000	30000	18,000/-
6	Tavetola II	3.00	60,000	30000	18,000/-

The noteworthy development in the fish seed rearing activity taken up by the self-help groups is that as advised the members monitored the growth of fish seed diligently and could achieve production of 60,000 fish fingerlings after 02 months of rearing. The self-help groups at these three sites have managed to sell 50% of fingerlings i.e. 30,000 fingerlings and earned on an average Rs.18000/- per site. The remaining 30,000 fingerlings have been reared by them for further grow-out culture. Similarly, 02 sites have earned Rs.9000/- after the sale of 15,000 fingerlings from each site within two months (**Table 2**). The remaining seed is kept for rearing in SHG's own ponds.



Stocking of fish seed in the lake and Training and live demonstration to SHGs

Knowledge Building workshops and Training

▪ Buyer seller meet

Science and Technology Resource Centre (STRC), Gadchiroli organised the buyer meet on 13th March 2018 at RSETI meeting hall, Bank of India premises, Gadchiroli. The topic in the meeting was discussed problems faced by the fish retailer in marketing fish in gadchiroli district. The facilitator of the program is Shri S. S. Belsare and Dr. P. A. Telvekar, Assistant Professor, College of Fishery, Nagpur and guests Mr. Prashant Vaidya – Fishery development Officer Gadchiroli, Gadchiroli; Mr. Rajendra Gaur- Fish merchant, Nagpur; Beneficiaries (SHGs); local fish retailers and progressive fishermen.

The objective of the meeting was bringing all stakeholders on a common platform; Dr. Prashant Telvekar, Assistant Professor, College of Fishery, Nagpur talked about the issues in the marketing channel establish practical market linkages between producers and buyers along with developing business chains etc.;

Shri. S. S. Belsare, Assistant Professor, College of Fishery, Nagpur focused onto create a sustainable long-term capacity for farmers, with the support of local fishery department and other organizations to assess local and district markets for their products/produce through increased knowledge and networks. Ashis Gharai, Chief Program Officer, STRC, Gadchiroli talked on to build an alliance of organizations, which will lobby and advocate for better schemes to enhance the livelihood of the fish producers of the Gadchiroli district.

▪ **One day Workshop on**

STRC organised one day workshop in collaboration with Agro-vision Foundation on 29th August 2018. The workshop was very successful with almost a hundred attendees and four institutions, progressive fish farmers, entrepreneur represented. We received a lot of positive feedback about the workshop particularly good management practices and scope of Aquaculture in the Gadchiroli district. The workshop was inaugurated by the Dr. N. V. Kalyankar, Hon'ble Vice-chancellor and technical session was delivered by the Dr. Prashant Telvekar and Shri. Shyam Shelke, Assistant Professor, College of Fishery, Nagpur.



Images: Keynote address by the Shri. N. V. Kalyankar, Hon'ble Vice Chancellor, Gondwana University, Gadchiroli to the gathered audience; audience (progressive fish farmers in large nos); Dr. Prashant Telvekar answering questions posed by farmers; a farmer responding to the questions.

▪ **One day Workshop on “Entrepreneurship Development through Aquaculture”**

The Science and technology Resource Centre, Gondwana University, Gadchiroli organised one day workshop on “*Entrepreneurship Development through Aquaculture*” on the occasion of the World Fisheries Day on 22nd November 2018. The workshop was funded by the National Fisheries Development Board, Hyderabad. The program was inaugurated by a special guest Shri. Damodar Nane, Additional Collector, Gadchiroli and all the district head from various organisations in Gadchiroli were present.



Left image: Keynote address by the Shri. Dhamodar Nane, Additional Collector, Gadchiroli to the gathered audience; Right image: progressive fish farmers

More than 120 farmers attended the program from the 5 taluka Armori, Wasda, Gadchiroli, Chamorshi and Mulchera. In the workshop theory classes included topics such as Importance of fisheries, Fish seed production, Modern fishing practices, Introduction to fish processing,

Cage culture in small reservoir, Entrepreneurship in Aquaculture, Scope and demand of aquaculture, Awareness on NFDB assistance & schemes of state fisheries department.



Left image: Shri. Mukesh Bhendarkar, Scientist, NIASM, Baramati answering questions posed by Farmers; Right image: a farmer responding to the questions

- **One Day Workshop on 15th March 2019 was organized on developing a Policy Guideline for an Integrated Approach towards Aquaculture based Sustainable Livelihoods in Gadchiroli District.**

Key points taking into consideration were of developing Aquaculture based livelihood programs in the district. STRC-GUG proposed to formulate clearly defined achievable policies and programs to bring economic, social, and environmental sustainability in the aquaculture sector development. This workshop was proposed to evolve policy framework(s) for STRC for next few years taking expert inputs from the stakeholders among state agencies, non-governmental organizations (NGOs), and the private sector. Dr. P. M. Dolas, Coordinator for STRC and In Charge RGSTC, Nagpur office chaired the event. The event was attended by the guest expert from college of fisheries, Nagpur; fisheries Department official, local rural development organization and few progressive farmers in Gadchiroli.



Left image: Shri. Nandkishore Ingole OSF, Tata Trust delivering the seminar on “Developing Policy Guideline for an Integrated Approach in Aquaculture”; Right image: Panel members in workshop.

- **STRC-GUG, Gadchiroli and MAFSU, Nagpur Joint Project**

There is ongoing joint project of STRC, Gondwana University, Gadchiroli and College of Fishery Nagpur on *Development of organized fish seed production, culture and marketing to ensure sustainable livelihood opportunities in aquaculture in Gadchiroli district.* In this project the “Fish Farmers’ Interest Group” (FIG) including project/direct beneficiaries as well as other progressive farmers in the tribal region in Gadchiroli will be formed. Such FIG would be economically viable, democratic and self-governing. The FIG members would be in close contact with each other for procurement of inputs (Fish seed, feed etc.) and would also share

knowledge and information on fish culture management, preservation, processing and marketing of fish and fishery products. The concept of FIG is in tune with the present needs of the fisheries sector in Gadchiroli district and collaborative fish farming is always better than doing fish culture in isolation. The FIG would have more bargaining power in markets than individual farmers and can more aggressively market their product, even in far flung large markets.

The primary activity of the project was started to understand the basic methods of fish farming in Gadchiroli district and need of support the continued development of sustainable production. The activity continued with monthly more than 6 visits we planned to interact with local fishermen, progressive fish farmers, fishermen communities, SHGs, fish market and tribal. The purpose the visit learned about the process and problem of fish farming and aware about that how fishing practices are being managed. We have interacted more than 500 fishermen in three blocks Armori, Wadsa and Kurkheda.



Hence, STRC has planned following connecting activity in the financial year 2019-20 are as follows:

- i. Ornamental Fish Culture pilot as a business proposition for WSHGs.
- ii. Fish fingerling Procurement for progressive fish farmers.
- iii. Establishment of Small fish feed mill.
- iv. Collaborative efforts with State/ National resource agencies.

Theme II: Bamboo craft making and livelihoods

Key goal of STRC's Bamboo initiatives' is to identify, nurture and organize the local and traditional skills to enhance the livelihoods in the region. The intent is to support and establish sustainable and productive use of forest and other natural resources in Gadchiroli. Bamboo being one of the abundantly available forests produces, it is important to take action to preserve and use this precious resource wisely.

Hence STRC has initiated undertaking towards understanding the scope of Bamboo craft, bamboo resources and target communities in Gadchiroli region to design and develop interventions. In so doing we need to create a complete database in numerical, digital and informative basis on current scenario of bamboo craft in the region. Also the idea is to organize the master trainers trained from IDC-IITB for executing all bamboo craft project activities. Create a pool of 100 master trainers and young entrepreneurs in the region. We plan to achieve these objectives by closely coordinating with forest department Gadchiroli and Bamboo Development Board.

Salient features & Achievements of yearly work:

▪ **Training of Trainers at IDC-IIT Bombay:**

1. Transformation of the “artisans” to “entrepreneurs” by introduction of new designs and technology, providing training for the up-gradation of skills to the community members, building their entrepreneur skills, creating awareness about the market potential, introduction to tools, jigs to increase the quantity and quality of production, will be an effective intervention;
2. Generating supervisory level workforce to ensure quality in production and training
3. 10 artisans from Gadchiroli were trained at Industrial Design centre, IIT Bombay for a intensive training of 4 months termed as ‘Master Trainers’
4. The objective behind the training was to create a pool of such trained master trainers in Gadchiroli region to contribute in developing Bamboo craft as a sustainable livelihood option

▪ **15 Days Bamboo craft training funded by MAVIM:**

The 15 day program was first of its kind, and was first in a series STRC intends to put together, during the 15 daysworkshop; candidates were trained on Professional Skill, Professional Knowledge and Employability Skill. In addition to this, a candidate was entrusted to undertake project work, co curricular activities and academic training to build up confidence. This training was supported by *Mahila Arthik Vikas Mahamandal(MAVIM)*.



Training is in process (Total 18 youths were trained)

▪ **Visit to the various villages in Gadchiroli, Dhanora, Kurkheda, Bhamragad and Mulchera blocks to get exposure about bamboo craft**

Gadchiroli has numerous people who are contributing in Bamboo craft in a much unorganized manner. The artisans and their families are working for their basic livelihood. As per the mandate of STRC under Bamboo initiatives various villages in Gadchiroli, Dhanora, Kurkheda, Bhamragad and Mulchera blocks were surveyed to know about Bamboo craft scenario and their understanding towards craft, potential market. Such 235 artisans have been documented on field. In the longer run building informal network of such artisans is planned. 120 Burud communities have also found in Gadchiroli district. Their formal database is collected and further documentation is in process. The two villages found and mobilized successfully to work with STRC in longer run to develop ‘Model Bamboo Village’ Darachi and Ghodejhari in Dhanora block are two villages who have shown the interest to work with STRC to built Model Bamboo Village (MBV). The MBV are developed with a holistic approach to develop bamboo scenario in the region.



- **Tied up with two villages for continuous supply of Bamboo as a raw material as per the requirement**

STRC requires continuous supply of Bamboo with its specific variety for various activities like craft trainings, production workshops. The villages like Darachi and Kondawahi have abundant available bamboo and as per the technical requirements for craft making. The villages have positively agreed for continuous supply of bamboo as per the requirement. formal agreement is in process.



- **90 days bamboo training program**

As the forest department has a mandate to ensure a cadre of youth to be trained in bamboo craft developed in this region who can take up small entrepreneurship with hand holding and technical support. A 90 days training was conducted at Shilpagram, a state of the art craft making facility under forest department. Maharashtra Bamboo development Board (MBDB) supported partially for the training. STRC was directly involved in final short listing of trainees batches. They were rigorously interviewed and checked for the capability of commitment, punctuality, and interest of work. A module based syllabus was developed along with power point presentations, documentaries. A reasonably comprehensive syllabus for 3 month training program was developed that included basic training, skill training, entrepreneurship model, bamboo techniques, technical skills and higher order skills. A special tool kit was given to each candidate for bamboo craft making exercises. Without restricting the training to a collaborative program, opportunities for R&D, production, marketing were also explored.



New assembly line of tools, machines and equipments as per the requirements of the craft will be on board at Shilpagram for STRC in collaboration with Forest Department Institutes like IICD Jaipur are in conversation, modalities are worked out. Designers for higher order

skills tied up and came to train the trainees from Mumbai. Representation of STRC's Bamboo craft at various exhibitions was explored. Sale of bamboo products worth 1.5 lakh in last 3 months have reached and few more orders are in process. A mini facility centre at STRC is coming up within a month which will be a temporary setup for production of bamboo craft. Mr. Ranjan Pandhare, Resource person, Bamboo craft & livelihoods attended 15 days intensive training at IDC IITB on Craft, Creativity and Post Modernism.

Theme III–Non-timer Forest Produce (NTFP), Medicinal Plant Cultivation and Off-farm activities

Highlights of MDU Project-

- **MDU session 2017-18:** MDU session was conducted in 23 villages of Armori Block of Gadchiroli district. STRC reached approximately 1500 peoples during these sessions. Out of 1500 people we shortlisted about 500 individuals and provided higher order training. The sessions were primarily designed to disseminate information, and conduct education and awareness session.
- **MDU session 2018-19:** In this financial year the program team re-doubled its efforts and organised qualitatively superior sessions. Our sessions were geared towards mass audience the team conducted result oriented and thematic based sessions. Till date we have carried out 'theme based sessions' and reached out to about 1000 members of communities.



MDU sessions held at different places in Dhanora Tehsil

- **Demo Plot:** STRC Developed Demonstration plot at Kaneri-pardi with motto to show case best agricultural practices and to motivate paddy farmers towards Medicinal plant cultivation. Demo Plot development has a special place in STRC's gamut of activities. This is our first foray into the field and we conducted this activity on an experimental basis.



- **NTFP's Marketing:**

Our key efforts towards commercializing NTFP/linking producers to mainstream market places are as follows:

A visit to Ayurvedic Arkashala was intended to explore new markets and to make efforts to bypass entire web of intermediaries by linking primary producers to the manufacturers.

▪ **Medicinal plant cultivation :**

Pilot initiative in Armori was undertaken to test and analyse the behaviour response of paddy farmers. STRC selected eight farmers out of pool of 50 paddy farmers and decided to sow, plant, replant and harvest in an experimental but scientifically sound fashion. The experiment however did not measure up to the expectations. In last financial year 2018-19 STRC successfully reached out to about 500 paddy farmers. The farmers were located across length and breadth of Dhanora and Armori tehsil.

Presently our integrated Dhanora Development Plan, a multidisciplinary effort rooted in aggregation of choices, aims to give a new shape and form to our medicinal plant cultivation endeavour.

An era of globalization, information technology brought out sea changes in the lives of rural masses. Earlier mass media like print, radio and television ruled the roost by striving to the core to impart technical knowledge to lakhs of populace. Still there is a void in the technological reach as it seemed to be costly affair. To impregnate the concept of seeing believes and to enrich the skills in the advanced farm technology, video plays a crucial role in the dissemination of innovation. As the video clipping would be more revealing and picturesque, technology may easily be learnt without losing its sheen, thereby providing comprehensive knowledge amongst the rural people. To augment the productivity video clipping support with technical backup, when floated in mobile, computers, pad or else any other information tools would create a lasting impact. Handy tools like mobile are at the disposal to get acquaintance with technology round the clock. Being true to its spirit STRC arranged two field visits exclusively for the purpose of video documentation. The team visited Chimur and Neri to capture best POP's of selected medicinal plants.



Video documentation in Chimur, Chandrapur

▪ **On field community interaction**



Field visits: project in action to Bhamragad, Armori and Sironcha

▪ **Workshops and Exhibitions Session**

In the last two years STRC attended more than 10 workshops and exhibitions in and out of Gadchiroli. These interactions honed the skills of the participants in terms of gaining knowledge. People new to an industry often use exhibitions as a platform to familiarize

themselves with other companies and their products. Exhibitions and conferences are highly cost effective sales and act as a marketing platform.

STRC also attended Vaidu conference in Nagbhir and Gadchiroli to understand knowledge of ancient medicine. The skills and practices of these primitive medicines are based on theories, beliefs and experiences related to different cultures, and are used in maintenance of health and in prevention, cure, treatment and diagnosis of various illnesses. It is also termed as alternative or complementary medicine.



Pics. of exhibitions

4. STRC way forward/ Action plan for FY 2019-20

Action plan for the FY 2019/20 are designed to coordinate a full range of activities that will consolidate and elevate our field activities to a strategic level. Since the last one year STRCs' activities and its approach towards field implementation have undergone a considerable modification. Instead of deploying its personnel in haphazard or random fashion the new action plan, accepted and approved by the STRC leadership, aims to arrive at division of labor, talent, time and paves way to optimal outcomes.

The action plan seeks to remove inefficiencies, and confusion; moreover it aims to replace competing initiative with “leaner” and more streamlined processes. The action plan also sets out specific, measurable and achievable goal under every pillar. Meaning the action plan entrusts individual responsibility and tasks to a specific member of program team. The thrust of this change is to fix accountability and confer operational autonomy to each and every member of program team so that he/she is able to achieve what the organization has set out to achieve.

Thus the way forward, in closing, is unique in a sense that it proposes to establish a separate section 8 company. The mandate of this proposed organization is to create revenue generating models and engender steady source of income. In so doing the action plan sets out which step add value and which don't. The theme based layout for FY 2019/20 is as follows:

1. Aquaculture and Livelihoods:

- Specific efforts in Dhanora (including awareness and extension programs)
- Development of integrated fish farming (Agri-Aqua Models)- under development
- Establishment of Aqua Clinics: for training and demonstration- under development

2. Bamboo Craft and Livelihoods:

- Creating engagement opportunities and sustaining the STRC cadre of Master Craftsmen/women (across Gadchiroli/ Chandrapur)
- Work with Experts/ Designers/ Interns/ Artisans to develop range of Product Prototypes in utility craft space with studies on market viability, branding, positioning etc.
- ‘Production Workshops’ with artisans to develop and polish existing skill sets
- Efforts to develop two Bamboo Model Villages through cultivation of major bamboo species and create a resource base
- Establishing formal collaboration with MSBDB and FD-Gadchiroli
- Continued engagement with IDC-IIT B for ongoing projects

3. NTFP/ Medicinal Plants & Other Livelihoods:

- Herbal Plant Propagation Project- Supported by DST (PI: Shri Ashis Gharai)
- Indigenous Medicinal Knowledge Project- Supported by NASI & RGSTC (PI: Dr. Vrunda Kate)
- Integrated Dhanora Development Plan (excluding activities in Aquaculture & Bamboo pan Gadchiroli)- NTFP Marketing, Med plant cultivation, Demo plots, Poultry, Sericulture, very low cost solar cooker etc.
- Agri based intervention model pilots (Gadchiroli block): Mr. Gandharv & Ms. Kajal

4. Incubation, Academic Program Development and Community Support:

- ‘Assistance for S & T Application projects’ at university level (planning in progress) Developing few certificate courses (of 3 to 4 months duration) in skill upgradation
- Developing an incubation and research eco-system (Faculties/ Students)
- Communication for Development (C4D)- Documentation for internal/ external communication- Project Progress, Newsletters, Annual Reports, Case Studies etc.
- Collaborations/ Liaisoning with Govt./ Non Govt. resource agencies Departments
- Development and upkeep of the STRC website, creating IT based platforms for showcase and promotion of STRC activities to a wider audience

5. STRC Semi-permanent construction

- ❖ Civil work near completion.
- ❖ Completion of work is expected by end of September 2019.



Layout of proposed Science and Technology Research Centre (STRC) at Gondwana University, Gadchiroli



Present construction status of STR at Gondwana University, Gadchiroli

6. Partnerships/Cooperation

There are many benefits of multi-agency collaborative partnership working for 'livelihood upgrade'. Every intervention matters and the value it adds contribute immensely to improving the learning and well-being outcomes of farmers and aboriginals.

The main benefits of collaborative multi-agency working, evident in STRC's everyday field work is as follows:

- leads to enhanced and improved outcomes farmers and aboriginals, through a range of joined-up services, advice and support being readily available and easily accessible;
- helps to build consensus, strengthen partnership voice, break down professional boundaries and parochial attitudes;
- helps to enhance scale of coverage and sustainability when pooled budgets, joint bids, joint projects and endeavours are put into action;
- can help to build a more cohesive community approach through united multi-agency practitioners taking greater ownership and responsibility for addressing local needs jointly, thus avoiding duplication or overlap of provision; and, finally,
- promotes mutual support, encouragement and the exchange of ideas between staff, helping the sharing of expertise, knowledge and resources for training and good practice, leading to more manageable workloads

In light of above benefits STRC is proud of the fact it works collaboratively, and in a spirit of partnerships with Mahila Aarthik Vikas Mahamandal, Maharashtra State Rural Livelihood Mission (MSRLM), State Forest and Agriculture Department, and Department of Sericulture (DoS). STRC has entered into a formal agreement with FD, GAD. At this moment in time STRC wants to upgrade our association, and deepen and broaden our engagement by way of modified MoU. Also STRC wishes to formalise our association with MAVIM.

Annexure: STRC Financials

a. Audited Statement

शोधन शिर्ष	2016-2017 चे प्रत्यक्ष (रु.लक्षात)	2017-2018 चे मुळ अंदाज (रु.लक्षात)	दि.31 ऑक्टो. 2017 पर्यंतचे प्रत्यक्ष (रु.लक्षात)	2017-2018 चे सुधारीत अंदाज (रु.लक्षात)	2018-2019 चे मुळ अंदाज (रु. लक्षात)
i) STRC Core Expenses					
1) Salary (Excluding MDU Project)	19.08	75.00	13.50	24.00	40.00
2) TA & DA	3.10	10.00	0.22	4.00	5.00
3) Advertisement Expenses	0.72	0.00	0.10	1.00	1.50
4) Office / Stationery Expenses	0.21	0.00	0.00	1.00	0.75
5) Printing Expenses	0.00	0.00	0.00	0.50	0.50
6) Hiring Vehicle	1.15	0.00	0.00	3.00	4.00
7) Fuel Expenses	0.00	0.00	0.00	2.50	2.50
8) Meeting Expenses	2.25	0.00	0.00	0.00	0.00
1) GB & PAB Meetings	0.00	0.00	0.00	2.00	1.50
2) Other Meetings / Workshop Expenses	0.00	0.00	0.00	2.50	2.00
9) Imprest/Petty Cash	0.40	0.00	0.29	0.70	1.00
10) Hospitality	0.00	0.00	0.00	0.50	0.25
11) Guest house Hiring	0.00	5.00	0.00	0.17	0.00
12) Honorarium	0.00	0.00	0.00	0.50	0.50
13) Other Expenses	23.05	0.00	6.88	8.00	0.00
14) Upaskar Upakaran Purchasing	6.14	0.00	0.79	1.00	0.00
15) Upaskar Upakaran Repairing & Maintenance	0.02	0.00	0.00	0.00	0.00
16) Misc / Contingencies @ 5% (of Point # h)	0.00	34.60	0.00	1.10	2.93
Total (1A)	56.12	124.60	21.78	52.47	62.43
B) STRC Funds from DST					
a) Recurring Expenses					
1) Salaries	0.00	0.00	0.00	4.62	4.62
2) Consumables	0.00	0.00	0.00	1.50	3.00
3) Contingencies	0.00	0.00	0.00	0.50	2.00
4) Travel	0.00	0.00	0.00	0.50	2.00
5) Other heads	0.00	0.00	0.00	1.00	2.50
6) Overhead Expenses	0.00	0.00	0.00	1.00	2.50
Total	0.00	0.00	0.00	9.12	16.62
b) Non-Recurring Expenses	0.00	0.00	0.00	15.54	7.66
Total	0.00	0.00	0.00	15.54	7.66
Total (1B)	0.00	0.00	0.00	24.66	24.28
Total Expenses (1A + 1B)	77.95	416.26	21.78	77.13	86.71

Rationale of Fund Requisition for year 2019-20

Last Fund Received form RGSTC: INR 2.5 Cr (23.03.2018)

Current balance: INR 250.00 lakh as on 31st March 2019 (including 200.48 lakh for STRC construction-Civil work only)

Table 1: STRC Budget Overview (Amount in lakhs)

A	B	C	D	E	F
Total balance as on 1st Apr 2018	Fund Received from RGSTC during FY 2018-19	Expenditure Incurred (during 1st April 2018 to 31 March 2019)	Balance as on 31st Mar 2019	Total proposed fund requisition for FY 2019-20	Actual fund requisition for FY 2019-20 (E-D)
307.42	0.00	57.42	250.00	564.96	314.96

Please note: Details of Fund Requisition in Table No. 2 below

Table 2: Proposed budget/fund requisition for FY 2019-20)(Amount in lakh)

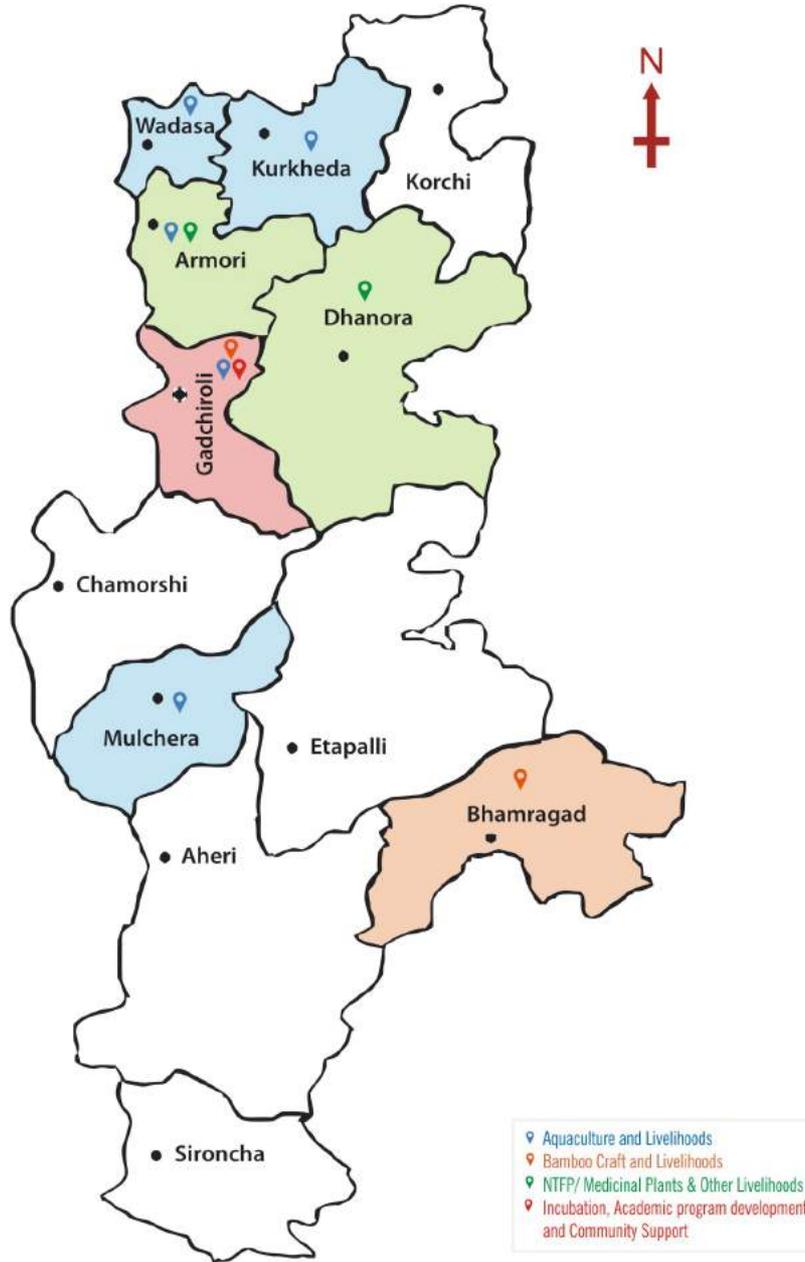
Sr. No.	Budget Title	Amount	Remarks
(A)	Program Budget (proposed)		
A1)	Theme 1: Aquaculture and Livelihoods		
i	STRC and MAFSU joint project (2nd Instalment)	19.81	As 1st instalment of the proposed project with total outlay of INR 58.01 lac assuming project to begin in April 2019
ii	Capacity Building (Value addition in aquaculture)	5.00	Training, Workshop and Guest Expert interaction and Field visits
iii	Establishment of Aqua-Laboratory	20.00	Primary facilities of the laboratory of Aquaculture and Fish processing for value addition capacity building programs
iv	STRC involvement in multi-partner and multi-donor projects	10.00	Fund is chiefly utilised in creating meaningful opportunities
v	Fish Seed	5.00	Proposed in Dhanora development plan for the fish farmers to distribute a fish fingerlings @ 15000 fingerling per FCSs
vi	Pond Construction (50,000/per farmer)	3.00	Promote 6 individual fish farming in Dhanora Block
vi	Ornamental fish culture (1,00,000)/per SHGs)	5.00	Proposed in Dhanora development to promote Ornamental fish farming the 5 SHGs group
	Sub Total	67.81	

A2) Theme 2: Bamboo Craft and Livelihoods		
i	Production Workshops (8 nos.)	6.00 To promote production of Bamboo products on large scale it is planned to conduct 10 days workshops for local artisans lead by trained artisans. Such 8 workshops will be planned in a year.
ii	Raw Material	2.00 Total raw material required for all bamboo activities in a year including chemicals, bamboo, Master Trainer/Artisans Fees , tools kits and packaging
ii	Capacity building programs- including conferences, higher order skill training programs, awareness campaigns and workshops	38.00 Outreach activities (use of MDU van for the purpose) coupled with intensive training programs are meant to redouble our efforts in making bamboo a credible source of livelihood.
iii	Bamboo Plantation (creating opportunities for easier access to raw materials)	2.00 techniques- saplings- POP- Sustainable Harvesting in selected 02 villages
iv	Common Facility Centre (CFC)- 02 nos.	14.00 To bring together group of trained artisans under one roof for production along with all facilities and further training.
v	Seed money/ Entrepreneurship	10.00 Support to artisans for entrepreneurship ventures
vi	Craft museum/Retail outlet	5.00 It is panned to exhibit and create platform to provide market for products in Gadchiroli.
vii	Exposure visits, exhibitions, (participation in promotional activities	5.00 To expose set of beneficiaries to new environments / through exchange of visits encourage cross-fertilisation of ideas
Sub Total		82.00
A3) Theme 3: NTFP, Medicinal Plant, Agriculture allied		
i	Workshop/ Exposure Visit/ Engagement with Vaidus	4.00 Workshop, Trainings, Exposure visits, Exhibition, participation
ii	Demo plot (1+1+1) Development at Dhanora, Chamorshi and Armori (Med/ Horticulture plants, Drip Irrigation, Nursery Development)	13.50 Development of the new demo plots at Chamorshi and Armori.
iii	Asset Development (Agri. tools)	2.00 Purchase of the Agriculture tool/machine/instrument for the demo plot and Individual farmer.
iv	<i>Income Generating Small Scale Initiative;</i> <i>a) Commercially important med plants cultivation</i> <i>b) Horticulture spp.</i> <i>c) Poultry</i> <i>e)Sericulture</i>	23.48 These activities all activities will implement in Dhanora development plan and also in 11 block of Gadchiroli district with individual beneficiaries

v	NASI- STRC Indigenous Medicinal Knowledge (IMK) project	08.52	Out of the total project outlay of 32.04 lac (15.0 lac- NASI & 17.04 lac- RGSTC) part financial support from R.G.S.T.C (amount may be released in 02 instalments)
vi	NTFP Marketing (in collaboration with MAVIM)	10.00	Key components include: a) Surveys-Interns/ external experts b) Asset Creation (Primary Processing Units) c) business model development d) exposure visits e) Use of MDU for awareness e) Workshops/training program (external expert engagements)
Sub Total		61.50	
A4) Theme 4: Incubation, Academic Program Development and Community Support			
i	Collaborative initiatives with resource institutions (Non Academic)/	10.00	Proposed joint projects with Govt. counterparts, Agencies, NGOs
ii	Collaborative initiative with resource institutions (academic)	5.00	Proposed joint projects with Universities, including capacity development projects for STRC Staff
iii	Certificate courses in NTFP, Bamboo, Aquaculture and other livelihood initiative	10.00	STRC proposes to introduce 03 to 04 months certificate courses as part of capacitating local human resource/ youths
iv	RGSTC “Assistance for S & T Application projects based at university level”: (Template under development)	5.00	Six/twelve month projects of interest to STRC for student groups/Junior faculty (sourced from GUG)with funding in the range of Rs. 50-100k to be introduced
Total		30.00	
A5)(A) Community Radio		15.00	
Total (A5)		15.00	
Sub-total (A1+A2+A3+A4+A5)		256.31	
(B) STRC Functional Expenses			
i	STRC Building: A total budget of 2.48 Cr. (1.43 Cr. for civil structure+ 1.05 Cr. For associated infrastructure) has been estimated for STRC Semi permanent infrastructure to be spent across two financial years (2018-19 & 2019-20).	105.00	For associated infrastructure of Model Production Unit, Library, landscape development, electricity and furniture etc.
ii	Staff Salaries	50.00	
iii	TA & DA (official travel for STRC staff / visiting faculties)	4.00	

iv	Mobile Demonstration Unit - Van Movement Under All projects	4.50	Running cost, upkeep, Maintenance and upgrade.
v	Advertisements/ Tendering expenses	2.00	
vi	Meetings (GB/ PAB and others)	3.00	
vii	Hiring vehicle (STRC field vehicle)	4.00	
viii	Fuel Expense (STRC field vehicle)	2.50	
ix	STRC Thematic Documentation: Brochures, Reports, Audio-visuals, Editing Printing etc.	10.00	Periodic publications
x	Office Expenses & Stationary	1.50	
xi	Upskar Upakaran Purchase	1.50	
xii	Upskar Upakaran Repairing and maintenance	0.75	
xiii	Honorarium	0.50	@ 2000/- per visit, External Experts/ Subject Matter Specialists
xiv	Hospitality Expenses	0.24	@2000/- p.m. (Tea & snacks for STRC Official Visitors)
xv	Petty cash	1.80	@ 2000/- p.m.
xvi	Guest Accommodation	0.25	Accommodation arrangement of official visitors
xvii	STRC webpage Development and maintenance	0.25	
xviii	Misc./Contingencies (@ 5% of B part excluding item i)	4.34	
	Total	291.61	
(c)	IMK Project (part funding for remaining fund out of approved project budget of 32.04 lakh) RGSTC contribution	17.04	
	Total	17.04	
	Grand Total (A1+A2+A3+A4+A5+A5(A)+A5(B)+A5(C))	564.96	
	Balance	250.00	
	Grant total (Fund Requirement)	314.96	

Gadchiroli District Map



A centre of excellence for sustainable value creation
conceived & funded by

Rajiv Gandhi Science & Technology Commission (RGSTC), Mumbai, Government of Maharashtra