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St. JOSEPH'S COLLEGE OF ENGINEERING
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OMR, CHENNAI - 119

DEPARTMENT OF INFORMATION TECHNOLOGY

AD1006 - Unnat Bharat Abhiyan (UBA)

Focusing Area: Education of Girl Child & Their Empowerment

Location: Agaram Village, Kancheepuram District

REPORT

Submitted by

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JUSTIFICATION FOR SUSTAINABLE DEVELOPMENT GOALS (SDG)

SDG 4: Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all

By creating a mobile STEM lab and mentorship program for rural girls, the project offers experiential, hands-on learning that enhances engagement, creativity, and problem-solving skills. This promotes inclusive, gender-sensitive education and ensures that girls in Agaram Village receive equitable access to digital and scientific literacy.

4.5 By 2030, eliminate gender disparities in education and ensure equal access to all levels of education and vocational training for the vulnerable, including persons with disabilities, indigenous peoples and children in vulnerable situations.

4.a Build and upgrade education facilities that are child, disability and gender sensitive and provide safe, non-violent, inclusive and effective learning environments for all.

STEM Lab for Girls – Gender Gap in STEM Education in Rural Schools: Solution through STEM Lab for Girls in Agaram Village, Kancheepuram District

Introduction

Agaram village, situated near Walajabad in Kancheepuram Taluka, Tamil Nadu, faces a significant educational gap when it comes to gender inclusivity, especially in STEM (Science, Technology, Engineering, and Mathematics). Rural schools often lack the necessary tools, inspiration, and support mechanisms to foster interest and participation among girls in these fields. Cultural expectations and societal norms continue to limit the access and exposure of female students to quality STEM education. Girls are often subtly or directly discouraged from engaging in science, technology, or mathematics due to prevailing gender stereotypes. This proposal titled "STEM Lab for Girls – Mobile Science and Coding Kits with Female Mentor Sessions" envisions addressing this disparity by empowering rural schoolgirls in Agaram village through the establishment of a mobile STEM lab combined with an engaging mentorship initiative. The project intends to catalyse interest and curiosity through interactive, hands-on learning while also fostering confidence through consistent mentorship by women professionals from the STEM industry.

Socio-Economic Context and Cultural Context

Most households in Agaram are characterized by agricultural and labor-based livelihoods with limited educational resources and awareness of STEM careers. Girls are usually tasked with household responsibilities, reducing their chances of engaging in academic and extracurricular learning. Additionally, the absence of women role models in STEM adds to the perception that these fields are not meant for girls.

Educational Infrastructure and Access

The village schools have minimal laboratory facilities and lack any structured computer education program. Textbook-based theoretical instruction dominates the learning environment, which does not resonate with practical understanding. There is little emphasis on creative problem-solving or inquiry-driven learning, particularly for girl students. Girls are less likely to participate actively in science fairs, math clubs, or digital literacy

programs due to both infrastructural and social limitations.

Environmental and Policy Relevance

The initiative is in line with the United Nations Sustainable Development Goals, especially Goal 4 (Quality Education) and Goal 5 (Gender Equality), and supports the vision of India's National Education Policy 2020. Promoting STEM education and digital literacy among girls in rural areas will help reduce inequality and improve national productivity.

Proposed Solution

The proposed solution involves deploying a mobile STEM lab – a vehicle or portable classroom equipped with science kits, coding tablets, robotics tools, and learning modules – to visit Agaram village schools on a rotational schedule. Alongside, sessions will be led by trained women professionals and educators who will act as mentors, demonstrating experiments and leading coding challenges to make STEM fun, relatable, and accessible.

Expected Impact

This initiative will improve the engagement of girls with STEM education, enhance their self-confidence, and nurture their aspirations to pursue careers in science, technology, and innovation. By promoting inclusive educational practices, the project will positively influence gender dynamics in the community and set a precedent for similar initiatives in neighbouring villages.

Implementation Strategy

To effectively implement this project, a structured approach will be adopted. The first phase will involve conducting a community needs assessment to understand the specific challenges and opportunities faced by tribal women in Agaram. This will be followed by the development of a tailored training program that includes workshops, hands-on sessions, and mentorship opportunities.

Partnerships with local experts, NGOs, and government agencies will be essential to provide technical support, resources, and market access. Regular monitoring and evaluation will ensure that the project remains aligned with its goals and objectives, allowing for necessary adjustments along the way.

Conclusion

To build an equitable future, interventions in grassroots education systems must prioritize inclusivity and inspiration. STEM Lab for Girls aims to address long-standing gender-based disparities in education by creating a nurturing and exploratory environment for girls in Agaram village. The outcome will not only be increased STEM participation but also the emergence of young, confident problem-solvers and innovators from rural backgrounds.

The primary objective of this project is to bridge the gender gap in STEM education by making STEM learning accessible, engaging, and inclusive for girls in Agaram village. The initiative will serve as a model to demonstrate how strategic educational interventions can inspire rural girls and promote gender equity. The detailed objectives include.This initiative is designed to address pressing socio-economic challenges while promoting environmental sustainability. The following objectives outline the primary goals of the project:

1. Enhancing STEM Literacy and Skills

Objective: Improve understanding and engagement in science, technology, engineering, and mathematics through hands-on learning experiences.

Details:

- Provide mobile labs equipped with science experiment kits, electronics, and beginner-friendly coding platforms.
- Introduce basic STEM concepts using real-life problem-solving approaches.
- Facilitate learning through visual aids, interactive demos, and collaborative group tasks.

2. Promoting Digital Literacy and Coding Skills

Objective: Equip girls with foundational programming knowledge and computer literacy.

Details:

- Use age-appropriate coding tools like Scratch, Arduino, and MIT App Inventor.
- Conduct structured workshops to build logic, creativity, and problem-solving abilities.
- Promote computational thinking via challenges, games, and group projects.

3. Mentorship and Role Modeling

Objective: Inspire and support rural girls through regular interaction with female STEM professionals.

Details:

- Organize monthly mentor sessions led by women working in tech, healthcare, research, and academia.
- Encourage open Q&A sessions, storytelling, and career guidance.
- Establish mentor-mentee connections to build confidence and aspiration.

4. Building Confidence and Breaking Gender Stereotypes

Objective: Empower girls to overcome socio-cultural barriers and develop leadership potential.

Details:

- Include confidence-building activities like science fairs, presentations, and team-based competitions.
- Celebrate girls' achievements in STEM to encourage peer motivation.
- Promote narratives that challenge traditional gender roles in education.

5. Enhancing Gender Equality

Objective: Involve parents, teachers, and the community in supporting STEM learning for girls.

Details:

- Host parent-educator awareness programs about the importance of STEM education for girls.
- Provide teachers with orientation on how to use mobile lab resources.
- Encourage community participation in events to build a collective support system.

6. Promoting Sustainable Education Models

Objective: Create a replicable, low-cost STEM learning model for underserved communities.

Details:

- Utilize solar-powered mobile units for labs.
- Design kits with recyclable and low-cost components.
- Create open-source educational content for continued learning.

7. Monitoring and Evaluation

Objective: Establish a robust monitoring and evaluation framework to assess the effectiveness and impact of the project.

Details:

- Baseline Surveys: Conducting baseline surveys to gather data on the socio-economic

conditions of participants before the project begins will provide a reference point for measuring progress.

- Regular Assessments: Periodic assessments will be carried out to evaluate the effectiveness of training programs, income generation, and community engagement initiatives. Feedback from participants will be collected to make necessary adjustments.
- Impact Reports: At the end of the project, comprehensive impact reports will be produced to share successes, challenges, and lessons learned, which can inform future initiatives aimed at empowering tribal women and promoting sustainable practices.

Conclusion

In summary, the project **"STEM Lab for Girls – Mobile Science and Coding Kits with Female Mentor Sessions"** is designed to address the educational and gender disparities faced by rural girls in **Agaram village**, Kancheepuram District, by promoting equitable access to STEM learning. Through hands-on education, mentorship from female role models, and the introduction of innovative mobile learning kits, the project aims to spark curiosity, build confidence, and cultivate essential skills among young girls. By achieving these objectives, the initiative not only empowers girls to pursue careers in science and technology but also promotes gender equality and social inclusion in rural education. Furthermore, the model offers a scalable and sustainable approach to bridging the gender gap in STEM across underserved communities. This project stands as a catalyst for transformation, inspiring the next generation of female innovators and changemakers through access, opportunity, and encouragement.

2. Methodology to be Adopted

The success of the project **"STEM Lab for Girls – Mobile Science and Coding Kits with Female Mentor Sessions"** in Agaram village hinges on a well-structured methodology that encompasses community engagement, curriculum development, capacity building, mentorship, and sustainability planning. This section outlines a comprehensive methodology that will be implemented in phases to ensure inclusive participation, effective learning outcomes, and long-term impact.

1. Community Engagement and Needs Assessment

Objective: To build a strong foundation by understanding the specific educational challenges and aspirations of rural girls in Agaram village and ensuring community support for the project.

Activities:

- **Stakeholder Mapping**: Identify key stakeholders, including school principals, teachers, parents, local women leaders, NGOs, and educational officers, to foster support and collaboration.
- **Community Meetings**: Conduct introductory sessions with students, parents, and school staff to explain the project objectives, expected outcomes, and the importance of STEM education for girls.
- **Needs Assessment Survey**: Carry out structured surveys and interviews with school authorities and students to assess the current level of STEM exposure, access to digital tools, and gaps in science learning.

- **Focus Group Discussions**: Facilitate focus group discussions with girl students to understand their interests, aspirations, and perceived barriers to STEM learning. These insights will inform the design of the learning modules and mentorship structure.

2. Curriculum Development and Training Design

Objective: To develop an inclusive, interactive, and contextually relevant STEM curriculum supported by custom-designed mobile science and coding kits.

Activities:

- **Curriculum Development**: Based on the assessment findings, create a modular curriculum with the following components:
    - Introduction to scientific thinking and environmental awareness.
    - Basic coding using platforms like Scratch and Blockly.
    - Practical electronics and robotics using simple circuit boards and sensors.
    - DIY science experiments aligned with the school syllabus.
    - Problem-solving challenges to foster critical thinking.

- **Expert Involvement**: Collaborate with educators, science communicators, and curriculum experts to design content suitable for rural learners with limited exposure to STEM.
- **Kit Design**: Assemble easy-to-use, reusable STEM kits that include:
    - Safe science tools (beakers, magnifiers, measuring cylinders).
    - Plug-and-play electronics modules (microcontrollers, LEDs, sensors).
    - Visual aids and instruction manuals in Tamil.
    - A low-cost tablet or preloaded videos for visual learning.

3. Training and Capacity Building

Objective: To build the capacity of students, teachers, and volunteers through structured workshops, hands-on sessions, and peer-to-peer learning environments.

Activities:

- **Training Workshops**: Conduct regular STEM learning sessions in school premises or community centers focusing on:
    - Simple experiments to explain scientific concepts.
    - Coding sessions through mobile/tablet interfaces.
    - Interactive group projects and science games.
- **Teacher Orientation**: Train science teachers and volunteers on how to facilitate kit-based learning, foster inquiry, and support gender-inclusive classrooms.
- **Community Learning Circles**: Set up learning circles or clubs where girls can continue practicing STEM activities, conduct peer demonstrations, and help others in their group.
- **Student Leadership Development**:

4. Mentorship and Exposure Opportunities

Objective: To inspire girls through guidance from successful female role models in STEM fields and create a strong support network for career exploration.

Activities:

- **Mentor Recruitment**: Partner with local universities, women engineers, healthcare

professionals, and scientists to build a diverse panel of female mentors.

- **Mentor Sessions**: Organize monthly mentor interactions (virtual or in-person) that include:
    - Inspirational talks and career stories.
    - Demonstrations of real-world science or tech applications.
    - Q&A sessions to address doubts and share career pathways.
- **Buddy System**: Assign mentors or trained volunteers to small student groups for consistent interaction, motivation, and follow-up.
- **STEM Career Awareness**: Provide exposure to various career options through interactive presentations, video documentaries, and field trips (if possible) to science museums or technology centers.

5. Monitoring and Evaluation

Objective: To assess the impact of the program on girls' learning outcomes, confidence, and interest in STEM, and to ensure accountability and program enhancement.

Activities:

- **Baseline Data Collection**: Collect data on current science performance, digital literacy, school attendance, and interest levels in STEM subjects before implementation.
- **Regular Monitoring**: Maintain weekly progress sheets and activity logs to track participation, learning achievements, and attendance during sessions.
- **Impact Assessment**: Conduct mid-project and final evaluations including:
    - Pre- and post-assessments on science/coding knowledge.
    - Student feedback surveys and learning reflections.
    - Interviews with teachers and parents to observe behavioral and academic changes.
- **Documentation and Reporting**: Prepare detailed documentation of activities, best practices, and success stories for reporting to stakeholders and showcasing impact.

6. Sustainability and Follow-Up Support

Objective: To ensure long-term impact and continued access to STEM learning for rural girls beyond the project duration.

Activities:

- **Formation of STEM Clubs**: Encourage the formation of girls-only STEM clubs in schools where trained students can lead weekly sessions using the kits.
- **Teacher Support**: Establish a mentor network of trained teachers and volunteers who will continue the sessions post-project and maintain the lab kits.
- **Refresher Training**: Develop an open-access repository of video tutorials, worksheets, and projects that students and teachers can access digitally or via pen drives.
- **Resource Hub**: Engage with local government and policymakers to advocate for supportive policies that promote women's entrepreneurship and environmental sustainability. This may include seeking access to grants, subsidies, or technical support for sustainable business practices.
- **Parental Engagement**: Involve parents in occasional showcase events to build their support for their daughters' learning journeys.
- **Policy Advocacy**: Engage with local education departments to seek support for scaling the project model in nearby villages and include STEM Lab practices in school enrichment programs.

- **Collaboration with NGOs and CSR Units**: Build long-term partnerships with educational NGOs and corporate CSR wings for material support, funding, and volunteer engagement.

Conclusion

In conclusion, the methodology to be adopted for the project **"STEM Lab for Girls – Mobile Science and Coding Kits with Female Mentor Sessions"** is designed to be participatory, inclusive, and sustainable. By engaging the community from the outset, developing context-specific learning materials, providing hands-on training, and ensuring consistent mentorship and monitoring, the project aims to empower rural girls in **Agaram village** with the knowledge, confidence, and skills to pursue STEM education. By integrating low-cost technology, female mentorship, and school-community collaboration, the initiative aligns with broader goals of gender equality, digital inclusion, and educational equity, paving the way for long-term impact and replication in other rural communities.

3. Name of Principal Investigator (25 word)
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5. Mobile No. of Principal Investigator
94877 90087

Total cost of the Product / Technology	
Categories of Fund	**Amount**
Mobile STEM Kit Components (Science + Coding)	Rs.35,000
Training and Honorarium for Female Mentors	Rs.20,000
Transportation and Outreach (Rural Access)	Rs.10,000
Digital Devices / Tablets (shared use)	Rs.15,000
Running Cost Printed Learning Materials & Stationery	Rs.5,000
Workshop Setup (Tents, Furniture, etc.)	Rs.10,000
Miscellaneous / Contingency	Rs.5,000
Total Proposed Amount	**Rs.100,000**

6. Funds Raised

Our organization is in the process of raising funds through CSR collaborations, educational grants, and local partnerships. So far, we have received partial support from individual donors and are actively seeking additional funding to fully implement the STEM Lab initiative in Agaram Village.

7. Describe your role at various stage of the Project

As the project coordinator, my role encompasses several key stages:

1. **Planning**: I will identify the educational needs of rural girls in Agaram Village and collaborate with local schools and stakeholders to design the project framework.
2. **Implementation**: I will organize and schedule mobile STEM lab sessions, coordinating female mentor visits and ensure proper use of science and coding kits.
3. **Monitoring**: I will Track student engagement and mentor involvement, collecting regular feedback to improve session quality.
4. **Evaluation**: I will assess the knowledge improvement and confidence levels among participating girls.
5. **Sustainability**: I will build local partnerships and promote community ownership, exploring opportunities for scaling the initiative and ensuring long-term impact.

8. Process of Execution of the Project

The execution of the project "Empowering Tribal Women Through Biodegradable Product Development" will follow a structured approach, encompassing planning, implementation, monitoring, and sustainability phases. This process is designed to ensure effective engagement with the community, skill development, and long-term impact.

1. Initial Planning and Community Engagement

The project begins with thorough planning, including stakeholder identification and community engagement. Initial meetings will be held to introduce the project, gather insights, and foster a sense of ownership among the tribal women and local leaders. A needs assessment survey will be conducted to collect quantitative and qualitative data on the socio-economic conditions of the community. This assessment will guide the development of a tailored training curriculum that addresses the specific needs and

aspirations of the participants.

2. Curriculum Development

Based on the findings from the needs assessment, a comprehensive training curriculum will be developed. This curriculum will focus on practical skills for biodegradable product development using local materials such as banana fibers, paddy straw, and sugarcane extracts. The curriculum will include modules on sustainable practices, product design, and business management. Input from local experts and trainers will be integrated to ensure the content is relevant and effective.

3. Training Implementation

The training phase will involve a series of workshops designed to provide hands-on experience. Participants will learn techniques for extracting and processing fibers, creating biodegradable products, and managing small businesses. Each workshop will be interactive, encouraging participants to practice the skills they acquire. To enhance learning, mentorship programs will be established, pairing participants with experienced mentors who can provide guidance and support throughout the training process.

4. Market Integration and Business Development

As participants develop their skills, the project will facilitate their integration into local and regional markets. Market research will be conducted to identify potential buyers and pricing strategies for biodegradable products. Business planning workshops will guide participants in creating individual business plans, covering essential topics such as marketing, branding, and financial management. The project will also organize opportunities for participants to showcase their products at local fairs and exhibitions, helping them establish a customer base.

5. Monitoring and Evaluation

To ensure the project is on track and making the desired impact, a robust monitoring and evaluation framework will be established. Baseline data will be collected prior to implementation, allowing for the assessment of changes in participants' socio-economic status and skills. Regular monitoring will involve feedback sessions with participants and stakeholders, enabling timely adjustments to training and support services.

6. Sustainability Planning

Sustainability is a key focus throughout the project execution. To promote long-term success, participants will be encouraged to form cooperatives or self-help groups that foster collaboration in production and marketing. Ongoing training sessions will be organized to address advanced topics and adapt to market changes. Networking opportunities with other

entrepreneurs and support organizations will further strengthen the participants' capacity to sustain their businesses.

7. Final Reporting and Documentation

Upon completion of the project, comprehensive reports will be prepared to document outcomes, success stories, and lessons learned. This documentation will serve as a valuable resource for future initiatives and provide insights into effective practices for empowering tribal women and promoting sustainable development.

9. Impact on village/ Beneficiaries

The project aims to bridge the gender gap in STEM education by delivering hands-on learning experiences and mentorship to rural girls in Agaram Village through mobile science labs and coding kits. The execution will follow a structured, community-centered approach encompassing planning, implementation, monitoring, and sustainability.

1. Initial Planning and Community Engagement

The first phase involves identifying the specific needs of girls in Agaram Village through consultations with local schools, parents, and community leaders. A needs assessment survey will be conducted to gather data on current STEM exposure, digital literacy, and learning challenges. Based on this, the project scope and objectives will be finalized. Meetings will be held with local authorities and stakeholders to introduce the initiative, encourage local involvement, and ensure alignment with community expectations.

2. Curriculum and Kit Development

Based on the survey data, a tailored STEM curriculum will be developed focusing on key concepts in science, mathematics, and introductory coding. The curriculum will be designed to be age-appropriate, engaging, and hands-on. Simultaneously, mobile kits will be assembled, including low-cost science experiment tools, Arduino/micro:bit-based coding components, and tablets for learning software. Content will be developed in both English and Tamil to ensure inclusivity.

3. Implementation of STEM Lab Sessions

STEM sessions will be conducted weekly using a mobile lab van equipped with all kits and teaching resources. The sessions will be facilitated by trained female mentors who will serve as role models for the girls. These sessions will include interactive experiments, guided coding activities, and group projects to encourage peer learning.

Local teachers will also be engaged in the sessions to build continuity in regular classroom

teaching.

4. Mentorship and Life Skills Integration

Beyond technical training, the project will introduce life skills modules and mentorship circles. Female STEM professionals and university students will be invited to share their experiences and inspire the girls. The mentorship component will address topics such as confidence-building, leadership, and career awareness in STEM fields. Monthly mentor sessions will be organized both in-person and via video conferencing.

5. Final Documentation and Knowledge Sharing

Upon completion, the outcomes, impact metrics, and stories of change will be compiled into a detailed report. The documentation will include case studies, video testimonials, and an implementation toolkit that can be replicated in other villages. The findings will be shared at educational forums and with policy-makers to promote scaling of the initiative.

10. Duration of Implementation of Project: 6 months

The implementation of the project **"STEM Lab for Girls – Mobile Science and Coding Kits with Female Mentor Sessions in Agaram Village, Kancheepuram District"** is planned for a total duration of **6 months**. This timeline will include all key phases such as planning, community engagement, curriculum and kit development, training and mentorship sessions, monitoring, and final reporting. The structured timeline ensures adequate time for effective execution, meaningful engagement, and measurable impact on the participants.

11. How to maintain future sustainability of installed technology in the village 500 words left

Ensuring the future sustainability of the mobile STEM lab and digital learning infrastructure in Agaram village is essential for long-term impact. A robust sustainability plan that includes community participation, teacher involvement, continuous training, equipment maintenance, and institutional support will ensure that the technology remains functional and impactful even after the project's initial phase. The following key strategies will help in maintaining and enhancing the sustainability of the initiative:

1. Community Ownership and Engagement

Building a sense of ownership among local stakeholders is crucial to long-term success.

- **Inclusive Participation**: Involve school teachers, parents, and local leaders in decision-making related to the use and scheduling of the mobile lab and STEM resources. This promotes accountability and shared responsibility.

- **Student STEM Clubs**: Encourage the formation of girls-led STEM clubs to continue learning through peer-to-peer engagement and to manage the kits responsibly.

2. Capacity Building and Training

Sustainability depends on regular training and development of both students and teachers.

- **Teacher Training Programs**: Conduct refresher training for science teachers on how to facilitate hands-on experiments, coding activities, and mentorship integration using the STEM kits.

- **Peer Mentorship**: Establish a peer learning model where trained students can guide new learners, ensuring knowledge transfer across batches.

- **Digital Literacy Camps**: Periodic sessions will be conducted to keep students updated on new tools, platforms, and digital skills relevant to STEM.

3. Maintenance and Support Systems

Keeping the equipment functional is vital for the continuity of STEM sessions.

- **Regular Equipment Checks**: Schedule monthly check-ups for science and coding kits, tablets, and mobile lab infrastructure to ensure everything is in working condition.

- **User Manuals and Maintenance Logs**: Provide user-friendly guides and assign student or teacher leads to log equipment usage and maintenance issues.

4. Institutional Integration and Educational Alignment

Embedding the mobile STEM lab into existing school programs ensures it becomes a core part of the academic routine.

- **Timetable Integration**: Incorporate weekly STEM lab sessions into the school calendar to ensure consistent usage.

- **Curriculum Alignment**: Align STEM activities with Tamil Nadu State Board curriculum so that hands-on learning directly supports classroom concepts.

5. Resource Mobilization and Partnerships

Sustaining the initiative also requires continued support from external partners.

- **Funding through CSR and NGOs**: Seek long-term collaborations with educational foundations, tech companies, and government bodies for kit replacement, mentor support, and digital upgrades.

- **Alumni Engagement**: Engage former students as volunteers or peer mentors, building a sustainable cycle of mentorship and role modeling.

6. Monitoring and Feedback Systems

Tracking progress and adapting the initiative as needed ensures ongoing relevance and improvement.

- **Impact Indicators**: Collaborate with local government officials to advocate for policies that support women's entrepreneurship and sustainable practices. Define measurable indicators such as participation rate, concept retention, skill improvement, and interest in STEM careers.
- **Feedback Channels**: Collect structured feedback from students, teachers, and parents to make iterative improvements in sessions, tools, and teaching approaches.

Conclusion

Maintaining the future sustainability of the mobile STEM Lab in Agaram village requires a collaborative and flexible approach. By empowering local educators, encouraging student leadership, ensuring technical upkeep, and building strategic partnerships, the project can continue to benefit rural girls well beyond the initial implementation period. Through these strategies, the initiative will nurture a self-sustaining, inclusive STEM learning ecosystem that contributes to educational equity and inspires the next generation of women innovators from rural India.

12. Impact of this work on learning of Students

The project "STEM Lab for Girls – Mobile Science and Coding Kits with Female Mentor Sessions" will greatly enhance student learning by offering experiential, hands-on education in science and technology. Rural girls will gain practical exposure to coding, electronics, and scientific experiments, making complex concepts more accessible and engaging. Interaction with female mentors will inspire confidence and broaden their understanding of STEM careers. This initiative fosters curiosity, creativity, and critical thinking, encouraging students to apply classroom learning to real-world problems. Ultimately, it empowers students to envision a future in STEM and contributes to a more equitable and innovative learning environment.

13. Impact of this work on learning of Teacher

The project "STEM Lab for Girls – Mobile Science and Coding Kits with Female Mentor

Sessions" will significantly enrich teachers' professional development by introducing innovative, hands-on STEM teaching methodologies. Teachers will gain practical experience in facilitating coding activities, scientific experiments, and integrating technology into their lessons. The collaboration with female mentors will provide deeper insight into gender-sensitive approaches and career guidance in STEM. This exposure will help teachers create inclusive, inquiry-based learning environments. It will also enhance their ability to motivate students, promote problem-solving skills, and align classroom teaching with real-world applications in science and technology.

14. Role of PI after compilation of the project duration

After the completion of the project, the Principal Investigator (PI) will ensure continuity and maximize long-term impact. The PI will document key learnings, evaluate program outcomes, and develop a toolkit for replication in other villages. The PI will also continue engaging stakeholders such as school authorities, NGOs, and potential sponsors to extend support for the STEM Lab's sustainability. In addition, the PI will guide teachers in maintaining lab usage and updating content as needed. Through regular community interaction and policy advocacy, the PI will work to scale the initiative and reinforce its vision of promoting girls in STEM education.

15. Duration of monitoring by PI Post Completion of the project

The Principal Investigator (PI) will monitor the project for **6 months** after its formal completion. During this period, the PI will oversee the continued use of the mobile STEM kits, mentor sessions, and student participation in STEM activities. Regular visits to the village will be scheduled to observe teaching practices, gather feedback from students and teachers, and assess the project's integration into school routines. The PI will also track the functionality of the equipment and any technical or training needs. This ongoing support will ensure that the project's benefits are sustained and that improvements can be implemented when necessary.