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IMPLICATIONS AND IMPACT OF RURAL TECHNOLOGY INNOVATIONS THROUGH COMMUNITY SERVICE PROJECTS

DR.K.M.ASHIFA

Asst. Professor in Social Work, Schools of Health Science,
Istanbul Gelisim University, Turkey,

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Key word : Rural Technology, Sustainable development , Innovations, Community service

Abstract

Science and technology are important factors in rural areas; they are related to growth because they have long documented lifestyle change, health conditioning, income generation and better productivity in the lives of people (Kapur, 2019). Science and technology, poverty alleviation, and economic problems are the most critical issues for rural citizens. In this project, the higher education institutions have joined together at the same time. This research is the result of efforts made by graduate engineering students to encourage scientific and technological advancements through community service projects for sustainable rural villages in Tamil Nadu.

Key word :, Rural Technology, Sustainable development , Innovations, Community service

Introduction

"Countries social and environmental viability depends on sustainable rural growth. Given that global poverty is predominantly rural, poverty eradication is significant. Poverty representation goes beyond the division between urban and rural areas and has sub-national and geographic aspects" (UN, 2009) . This is why it is vital and important to coordinate rural development initiatives as appropriate, which contribute "to sustainable livelihoods through global, international, national and local efforts. Rural development strategies should take account of rural areas' remoteness and potential and deliver targeted approaches" (*Ibid*). Technology is becoming imperative today in every area of healthcare, medical services, education , transport, tourism, manufacturing, market, administration,

banking or rural development. It has different definitions, such as machinery , equipment, instruments, skills , experience and information.

Service is an action that is not done by anyone or a group of individuals in support of the public or its institutions. This is the way to include students in community-based service events and to review the curriculum and/or quality of the service and to focus on service experiences. Anyone who serves will get something out of practice and use new insights or interpersonal observations to enhance their potential service and community. A learning factor that is combined with the service component should be built to optimize the benefits of community service. By studying and supporting others simultaneously, you are able to develop your culture and community, learn about life and build character, in order to affect the world in the future.

Service was part of a community service project: students spend time to meet their public needs; learning: students aspire to include skills in their programs or are taught. In addition, learning is interpersonal, analytical and reflective: linking service and learning. The phrase 'service learning' also shows that it plays an important role in service learning. Reflection is just your own thoughts and impressions on schedule. This can be done in many forms, including papers, forums and discussions. Students were trained by Community Service in community services projects, developed a sense of community among the students, began community development using their academic skills and enabled students to work with other students to create technological solutions to community service projects. The project extends many initiatives, such as authentic learning, self-esteem and socially conscious individuals, enhanced academic teaching, communication skills development, collective effectiveness and motivation for good learning and future civic involvement. It seeks to set up programs for community service. “This study has tried to inhibit the role of the rural development community service project. The community service initiative was intended specifically to incorporate students in the engineering program. The objective is to create community knowledge and service orientation among engineering professionals by using the innovative technologies necessary for the sustainable socio-economic and cultural development of rural poor villages”.

Review of Literature

“Science and technology have contributed most to development in India; technological factors play an important role, especially in rural development. In rural areas, there are numerous industries, such as agriculture , small industries, infrastructure, housing , schools, healthcare, schooling, offices, etc.” (Petry, Sebastiao, Martins, & Barros, 2019). “The Government has undertaken initiatives for

mainstream industry to facilitate its participation in the mix between science and technology research growth and its application for social well-being by a common man"(Devu U.D, Reddy, A.P & Reddy M E., 2009) . Technology is used at a large level for rural development, and the successful implementation of technology has resulted in expansion and growth in agriculture (Kapur, 2018). Poverty, illiteracy and unemployment are the main obstacles rural communities face. Rural masses will benefit from the development in technology in rural areas and build employment for themselves. Small industries in rural areas have been developed usually with machinery and technical equipment trained to provide jobs to rural workers to make productive use, when employment is sought, of the machinery and technical installations used in the manufacturing and manufacturing sectors. Advances in technology have improved rural living standards, roads and other facilities; people have been able to safely filter water and use clean drinking water. Medical centers and other health centres, which use specialized services and mainly serve poor communities, have been set up in rural areas. The use and advancement of technology in rural areas can therefore be described as improving the living conditions of rural communities and contributing to progress . Chiranjib Kumar Basu &Shyamal Majumdar (2009) revealed that "in developing countries, information and communication technology (ICTs) and technical and training (TVET) can be extremely relevant in the field of rural development and poverty alleviation" . Ozgen , Minsky Eren, & Barbara D. (2007) states that "policies and services to alleviate poverty are established with a primary emphasis on rural areas. Promoting rural entrepreneurship as an effective strategy of poverty alleviation and focusing specifically on the recognition of opportunities as a key element of the business process, and introducing a model that stresses intellectual, human, environmental and social-cultural resources and a mediating impact of national conditions".

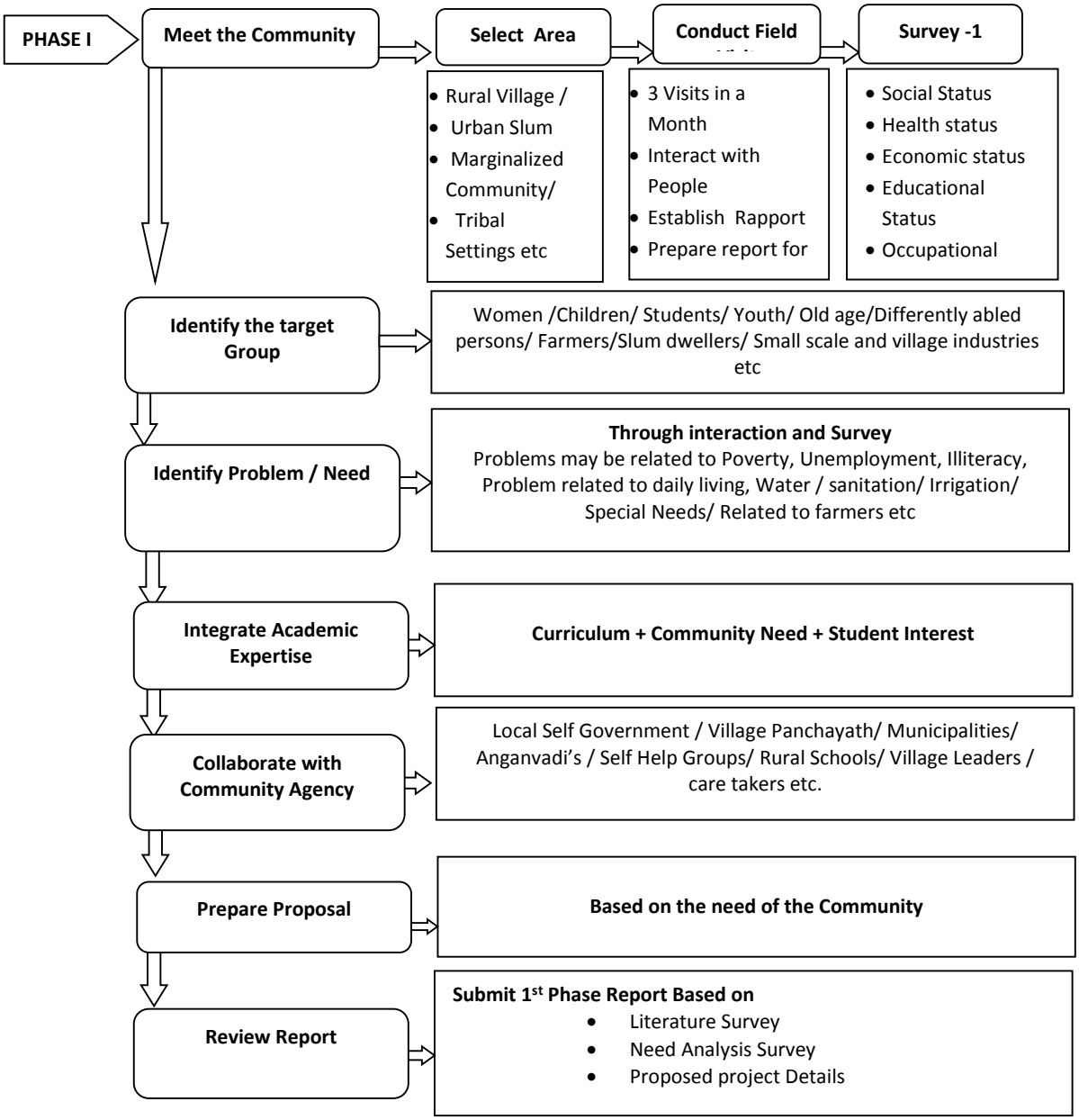
Methodology

The present investigation tried to develop a community service implementation model for the sustainability of rural villages, which is basically for the implementing community service projects of engineering graduates students. The community service model was developed with the support of the academicians, village leaders, engineering graduate students, social workers and practitioners of Non-Governmental organizations. In- depth interview is conducted and model was developed. The implementation training was given to the engineering graduates students of Kalasalingam Academy of Research and Education, Kirishankoil, Tamil Nadu. The detailed description of the implementation model is being discussed in this paper. The study also assessed the impact of community service project for development of rural villages and impact were assessed with questionnaire and survey .

RESULT AND DISCUSSION

Implementation model: Implementation model for graduate engineering students to support their community service efforts in particular. The slogan of the project was to encourage community awareness among the engineering students by putting together their academic skills and the special needs of the rural community. The projects will concentrate on the respective academic disciplines of the students. It was two different stages and cycles in one year

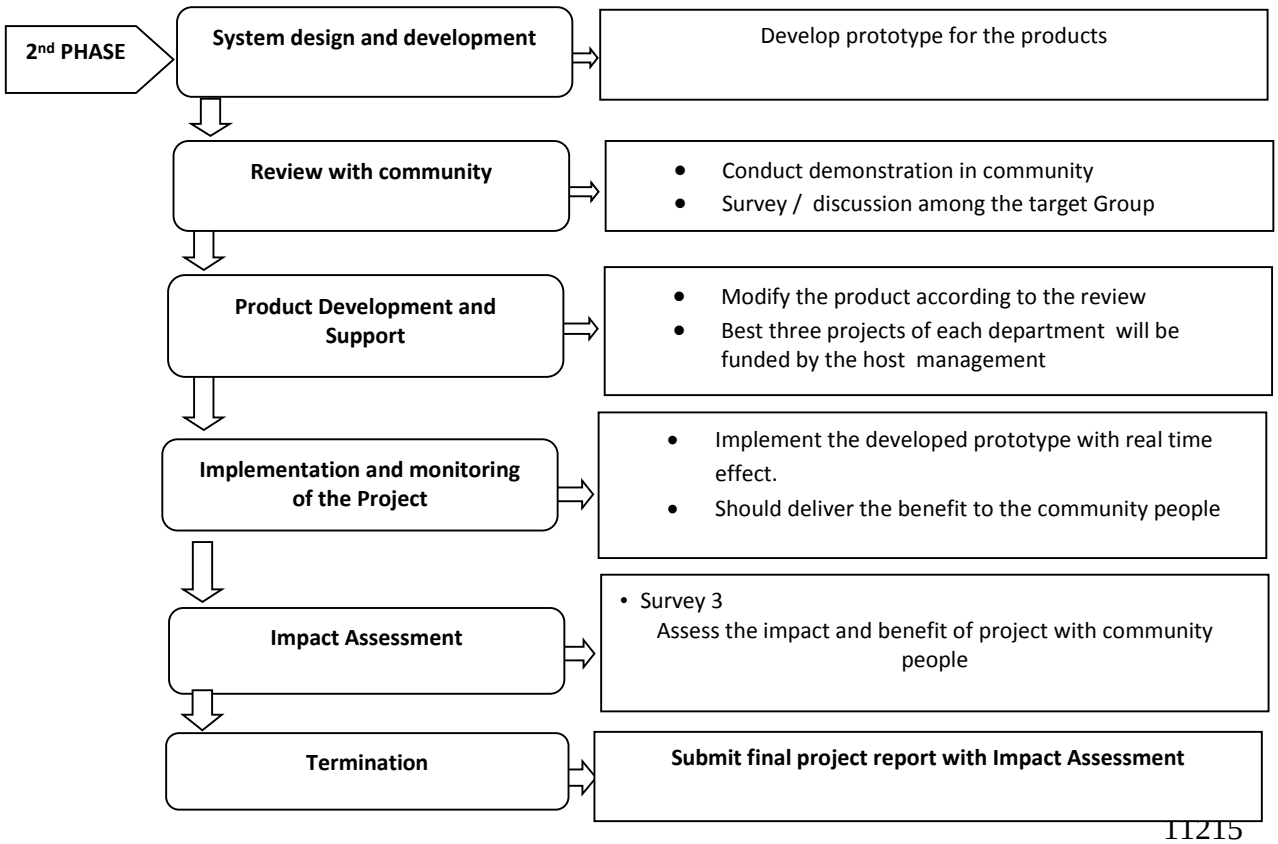
Figure 1: Implementation Model : Phase 1



The first phase of the project need assessment. It is explained in the figure 1 The students has to visit the nearby rural villages and identify the specific need of the community by conducting survey, interview and interaction with village leaders, local self-government and common peoples. The identified Problems may be related to Poverty, Unemployment, Illiteracy, Problem related to daily living, Water and sanitation, Irrigation and need Related to farmers and specific need of marginalization and downtrodden communities. Integration with academic expertise will be next step of the project. It has to link with community needs, curriculum and student interest. The first phase of the implementation model will end by preparing project proposal based on the assessed need of the community. Review report of the first phase will be the evaluation criteria of the community service project .

Community service project implementation process will start in the second phase (Figure 2). The based on the prepared proposal, students will develop proto type and they will make a review with community by making demonstration. The collected reviews of the target group and community agencies will incorporate and develop a structured product for the implementation. The students should make a collaboration with Local Self Government, Village Panchayath, Municipalities, Anganvadi's, Self Help Groups, Rural Schools, Village Leaders and care takers base on necessity of the project. After implementing, students should assess the impact and sustainability of the project and termination of the projects it essential to make the target group is self-relent and sustainable .

Figure 2 : Implementation Phase 2



Model Projects

Reuse of plastic bottles as construction material: The aim this project is to construct a bench using low cost material. In this project. it is planned to construct a bench for a primary school in sallipatti village using plastic bottles. The people in the village are not having sufficient fund for constructing bench using brick construction, since the cost of the brick is little higher. So we suggested and constructed a bench using plastic bottles which is available at low cost when compared to brick cost .

Photo 1: Sitting Bench with waste plastic bottles

Intelligent control system: The main purpose of this project is to support blind people without the need for human beings. It is well known that when they need to be helped, the blind people hold their hands with them. Often there are no promises, even when using this rock, that blind people are safe and safe to enter their destinations. There may be an obstacle in their way, but the person with the aid of the stick will not reach. People may also be hurt if the obstacles are wide enough or harmful. Therefore, a concept was created to help the blind man and to provide a simple path with Hat, a hand glove and a shoe .

Dustbin for clean India: "Most people don't believe that waste has been dropped into public places in dustbin's. We must also take responsibility in solving this issue as an initiative. There must be something enticing as a trigger for people to use the dustbin .. We have developed this revolutionary smart dustbin that operates on public waste. Whenever you throw a certain weight of trash, your e-wallet will be 0,25 liters. This machine cleans our atmosphere and allows people to use dustbin. As we aim for "Clean India," this framework will help us do so well in advance .

Development of a flow tap for traditional usage: Government agencies have inspired people to be mindful of the use of water. And

after vessels are filled with water, the majority use water. In addition, this room is found annually and creates people to stop using this room because of the negative climate. In our Community Service Project

focus are considerations like: preventing wasting drinking water, maintaining a safe atmosphere, having one hand buttocks and generating a tap at low costs.

Groundwater treatment in Kariapatti: Water is the people's basic need. Yet still, drinking water is the ultimate human need. The project desalinated the water that comes from groundwater, with the highest hardness from kariapatti using this solar distillation method to provide the people who live there with drinking water .

Photo 2: Treatment Mechanism for Ground water

Impact Assessment : The study aimed to asses the impact of community service projects in rural Villages in Tamil Nadu. A survey conduced among 365 villagers form three rural villages of Srivelliputhur municipality. The analysis of the age of the respondents shows that 48 percent of the respondents are in the age group upto 25 years. While taking into consideration the education of the respondents, 43 percent of the respondents are having Higher Secondary Certificate. 42 percent of the women are having an income of below Rs 5000/- and 55 percent of the women are married. The joint family system invites more of income since the income gets divided. Nearly 57 percent of the women are in joint family and this draws lot of issues for the women in family with regards to income. 78 percent of the respondents were form the below poverty line. The impact of community service project is assessed by using the components of usefulness of the project , Interaction of students, acceptance of the project , durability of the project, quality of the project, essentiality of further development of the project. Based on the overall score of the impact of the project, 72 percent of the of the respondents were agreed the that community service projects of the engineering graduate

students are very useful, 68 percent agreed the quality and durability of the project. Students interaction also considered to be high and relevant for the implementation of the project. 48 percent of the respondents were worried about the further implementation of the project.

CONCLUSION

"Technologies under a paradigm framework originating in the developing world are currently being created that is not suitable to developed countries" (Herrera, 1981). The growth of a culture, a system and a country is seen as important for education. "Education functions include social reform, enhancing the social status and standards of living of individuals, promoting rural and cultural participation, raising rural communities' essential capacity to recognise their needs, guaranteeing their own rights and taking more responsibility for decisions that impact their lives, providing qualified rural people and connecting rural and urban sectors. Rural education functions include: Functions of education" (Chandra, 2014). Community service initiatives aimed to improve the community feelings of the engineering students and create new technologies for the growth of rural villages by integrating young budding minds with academic expertise. The proposed model for implementing the community programs would help students combine academic qualifications and know-how to create new concepts that are focused on the real needs of the community.

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