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Community-Based Approaches for Sustainable Outcomes: A Case Study of Participatory Rural Appraisal in Dakatia Village, Khulna

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***Nushrat Nureen**

Abstract

The study aimed at deeply engaging the local community, to identify and address their alarming issues. This research showed the results of a meticulous participatory planning initiative conducted in Dakatia Village, Khulna, employing the robust framework of Participatory Rural Appraisal (PRA). Utilizing an extensive array of PRA tools, such as social mapping, resource mapping, transect walks, network diagrams, and problem tree analyses, the initiative provided profound insights into the complex socio-economic and environmental issues confronting the residents. The study revealed several critical issues of the village: severe waterlogging worsened by inadequate drainage systems, inefficient waste management practices, poor road infrastructure leading to accessibility problems, high unemployment rates, and a noticeable lack of effective NGO engagement in addressing these issues. In response, a developed and proposed a series of solutions designed to address these specific challenges comprehensively. These solutions included the construction of drainage systems tailored to the village's topography, the implementation of sustainable community-based waste management programs, and significant improvements to road connectivity to enhance access to essential services and economic opportunities. Moreover, the project placed a strong emphasis on capacity building through skill development programs aimed at enhancing employability and economic self-sufficiency among the villagers. Enhanced involvement of local and international NGOs was also proposed to provide the necessary support and resources, thereby strengthening the community's ability to sustain these initiatives. The participatory approach of PRA strengthening a sense of ownership and commitment among the village residents. This was crucial for the sustainability of the initiatives, as it ensured that the interventions were not only accepted but also actively maintained by the community. Furthermore, this project demonstrated the value of community involvement in planning and decision-making processes, which led to more informed and consensual solutions. The successful application of PRA methodologies in Dakatia Village highlighting the success of participatory planning in understanding and transforming rural settings in a sustainable and inclusive manner.

Keywords

Participatory Rural Appraisal (PRA); Socio-economic Challenges; Environmental Issues; Waterlogging; Waste Management; Road Accessibility; Unemployment; NGO Involvement

Introduction:

Participatory approaches have gained widespread acceptance within planning and development sector [1]. According to GIZ, participatory planning refers to including the community in the urban or rural planning process in order to promote community growth and it also resolves disagreement between opposing parties and harmonizes viewpoints in a productive manner with the intention of encouraging ownership by all participants. It is a social,

iterative procedure[2]. It mostly uses a bottom-up planning strategy. When people are involved in the formulation, organization, and implementation of any development, they own it, and as a result, it is efficiently used, maintained, and the development continues [2]. Additionally, the goal of participatory planning was to help the community solve its problems or promote any development that the community desired [3].

Participatory rural appraisal (PRA) is a very well-known approach of participatory planning that is mainly focused on implementing participatory planning in rural areas. It is a collection of strategies, techniques, and behavioral patterns designed to help the poor articulate and analyze the truths about their circumstances as well as to organize, control, and assess their own behavior [4]. A wide range of examples may be found in the literature where participatory approaches like PRA are now emerging as a fundamental strategy in rural development such as, in planning for resources, resource economics, and community development [5].

There is a lot of techniques available to conduct the PRA process in a particular rural area such as, social mapping, resource mapping, mobility mapping, transect walks, trend analysis, seasonal diagram, pair-wise ranking, cause and effect analysis and so on [4]. All these techniques can be divided into main three methods that are, space related, time related and relation related. By implementing these methods and techniques, it is possible to identify the actual problem and peoples' perception about their respective village and it is also possible to generate different solutions of the problems [5].

In this study, PRA has been conducted to implement participatory planning to some extent in a particular rural area in Khulna. There are some objectives of this study. Such as, To identify the existing issues faced by the local community through PRA, To assess the major problems of the community by using different PRA techniques and propose solutions of those problems Different types of methods have been applied to identify the major problems faced by the local community and to analyze those problems and different aspects of that rural area. Such as, social mapping has been done to identify the social characteristics of that area's community, resource mapping has been conducted to identify the major resources available, mobility and service opportunity mapping has been done to uphold the connectivity of that area to other areas and the distance between major services and that area, pair-wise ranking has been done to identify the major problems, transect walks have been conducted to visualize the area's major demographics, cause and effect diagrams have been conducted to critically analyze the major problems of that area and so on. Through applying all these methods, PRA has been implemented in that area effectively and efficiently as a part of participatory planning approach.

2. Material and Methods

2.1 Study area profile

In this study, Dakatia village has been chosen as the study area which is situated at Atra Gilatola Union in Phultala upazila of Khulna. The total area of Dakatia village is 653.33 acres and the population is 1500 approximately. Dumuria, Shiromoni, Arongghata are the surrounding areas of this village.

Dakatia village has been chosen because it satisfies all the criteria such as, the area must be out of any urban area, area must not include any slum or squatter settlement, the study area should be a village within a rural area. Beside this, the villagers of Dakatia are very co-operative and they are basically a Hindu community and most of them dependence on agro-based economy.

Table 01 Search terms used in definition of the search strategies in PubMed

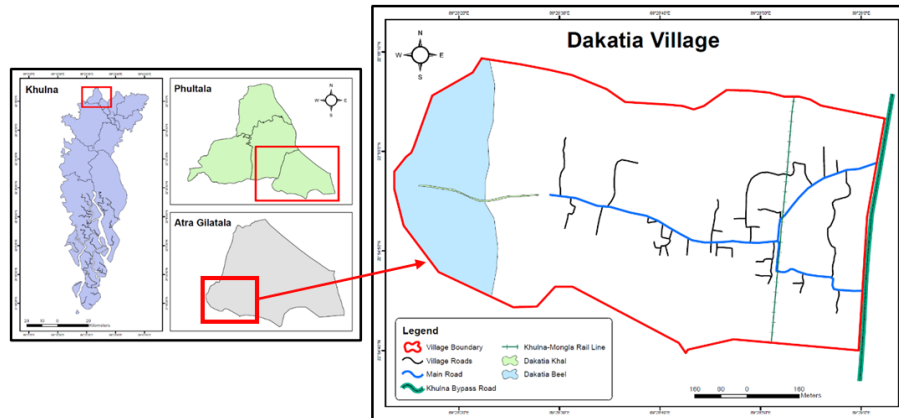


Figure 1 :Study Area Map

The strongest asset of Dakatia village is “Dakatia Beel” which is situated beside the village and connected through a canal. It is situated in the country's southwest and has a gross size of 28686 acres [11]. It must be mentioned that, ‘Dakatia Beel’ is the second largest Beel of Bangladesh [10]. The village is situated just beside the Bypass Road which ensure good connectivity. Khulna - Mongla railway has passed through the midst of Dakatia village. A canal is constructed that connects the village and the beel that is ‘Dakatia Khal’.

2.2 PRA tools and techniques

PRA offers a "basket of methods" from which the project's best strategies can be selected. The core of any PRA is semi-structured interviews. While intimate topics are best handled in private conversations, topics of greater public interest are better discussed in focus groups and public forums. There are many types of approaches of PRA based on the main three methods of it that are, space, time and relation. [6]

2.2.1 Social map

A village's homes, as well as other social infrastructure and facilities including temples, shops, rice mills, schools, pharmacies, roads, paths, and water pumps are sketched or drawn as part of the PRA technique known as social mapping. [7]

2.2.2 Resource Map

Along with the social map, it is a popular PRA technique. The resource map is a tool that aids in learning about a town and its resource base, including fields and lands uses, water locations, soil types, and hills. Instead of creating an accurate map, the main goal is to gather information about how locals view the available resources [8].

2.2.3 Transect Walk

A transect walk is a tool for describing and illustrating the distribution of resources, features, landscape, and primary land uses along a specific transect according to World Bank [9].

2.2.4 Mobility Map

Mobility map is a method that is used for exploring the movement pattern of any individual, group, or community. It helps to understand the mobility pattern (where they are going and for what) of local people[10].

2.2.5 Pair-wise ranking

For problem identification, pair-wise ranking method is very effective and efficient. It is being done by conducting focused group discussion with the local community people. After the data has been collected, the challenges and possibilities are prioritized based on the perceptions of the community.

2.2.6 Network diagram

Network diagram is commonly used to establish different types of relationship between stakeholders of a particular project or area. A network diagram consists of a number of nodes and the connecting lines between them. A network diagram is a visual representation of the connections among people (or other objects) in a network and is typically the result of social network analysis.

2.2.7 Fish-bone diagram

A Fishbone Diagram is a tool for identifying, sorting, and displaying the sources of a problem or a quality attribute. It graphically depicts the relationship between a specific outcome and all of the factors that influence it.

2.2.8 Seasonal Calendar

A seasonal calendar is a PRA technique that identifies seasonal patterns in activity and trends within a society. The distribution of rainfall, the availability of food, agricultural output, income and expenditures, health issues, labor demand, and many other variables that fluctuate over time can all be found using this method. A seasonal calendar is also known as a seasonal analysis, a seasonal activity profile, and a seasonal diagram. This PRA tool shows how the locals view seasonal fluctuations in a variety of goods. The seasonal calendar can also be used to gather data on how people divide their time and labor among various village activities.

2.2.9 SWOT analysis

SWOT analysis, in which "strength" refers to the internal favorable component, "weakness" is the internal negative aspect, "opportunity" is the internal positive factor, and "threat" is the external negative factor, has emerged as a crucial tool for strategic planning. It is a method of strategic planning for determining the best place for any company or building and formulating the plans.

2.2.10 Problem tree analysis

Problem tree analysis helps stakeholders to establish a realistic overview and awareness of the problem by identifying the fundamental causes and their most important effects, according to Department of International Development (DFID). The main output of the exercise is a tree-shaped diagram in which the trunk represents the focal problem, the roots represent its causes and the branches its effects. Such a problem tree diagram creates a logical hierarchy of causes and effects and visualizes the links between them. It creates a summary picture of the existing negative situation.

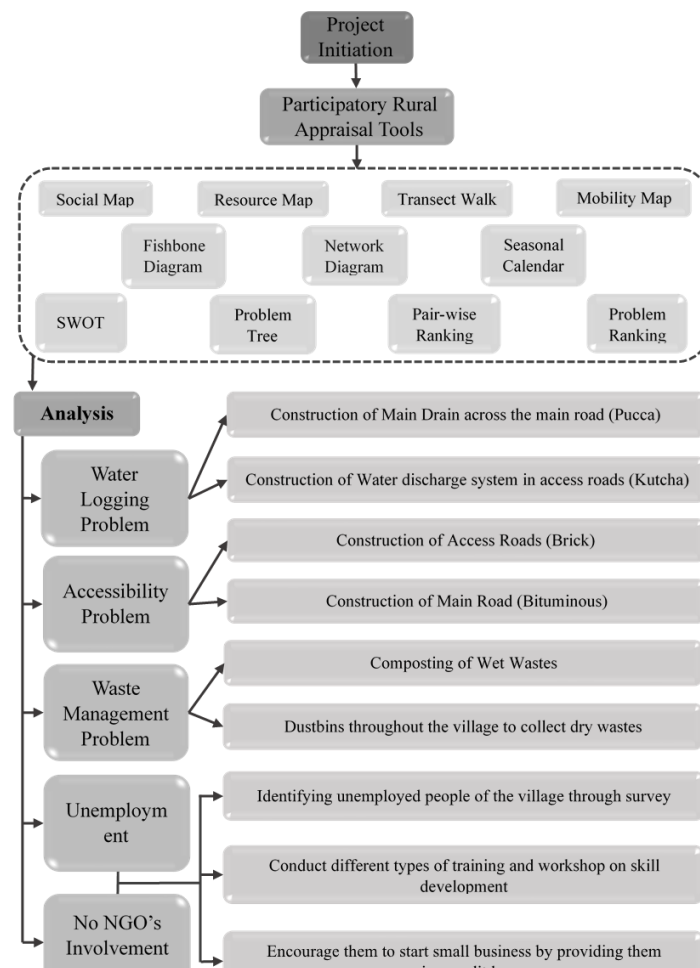


Figure 2: Methodological Framework

3.Result and Discussion:

3.1 Water logging and drainage

To address the persistent waterlogging in Dakatia Village, two sets of solutions have been proposed. The villagers suggest the implementation of effective rainwater discharge systems, the establishment of proper drainage facilities, and the construction of a drainage network along access roads. Authors propose a more detailed plan, which includes the reconstruction of approximately 1.53 km of the main drainage network, upgrading it to a durable, 'pucca' (permanent) structure. This main drain would reconnect with the Shiromoni drainage system, restoring a previously lost link. Additionally, the plan calls for the construction of a water discharge system on access roads, which would also connect to this main drain. Enhancing the flow conditions of the existing natural drainage and removing silt from the Dakatia khal are also recommended to further minimize waterlogging. The proposed changes are highlighted on a drainage network map.

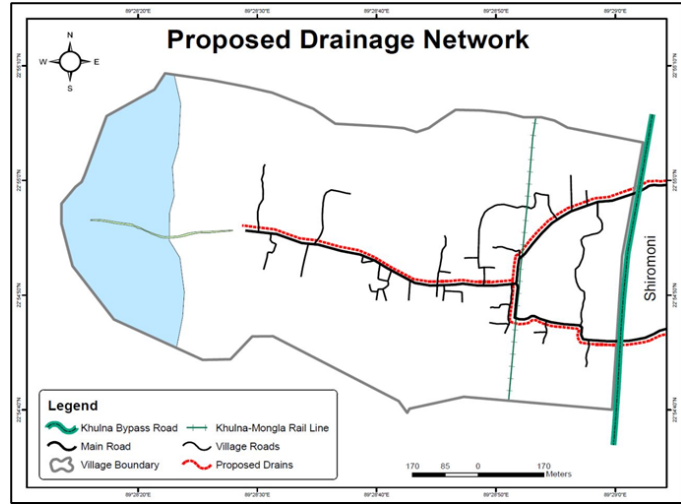


Figure 3: Proposed Drainage Network

3.2 Water Discharge System

A cost-effective and self-maintainable water discharge system has been proposed to address waterlogging issues affecting the access roads in Dakatia village. The system is designed to efficiently collect and channel water from rain and other household sources into newly constructed linear kutchra drains located beside the access roads. These drains will facilitate the flow of water from adjacent households and roadways directly into Dakatia's main drainage system. The construction of this system will also engage local labor, offering employment opportunities to eligible villagers who will be responsible for excavating the linear drains. This initiative not only aims to improve infrastructure but also promotes local workforce participation.

3.3 Accessibility

The villagers and the author have proposed various solutions to enhance the accessibility of the village. The villagers suggest constructing a comprehensive road network throughout the village and resolving the longstanding political disputes between the Member of Parliament and the Upazilla Chairman, which have hindered road construction projects for years. The author recommends reconstructing the main road, approximately 1.53 kilometers in length, using bituminous materials for surfacing. Additionally, the author proposes earthwork operations, such as cutting and filling, to ensure vehicle accessibility from the village market to the Bill area. Further recommendations include the construction of well-structured brick roads throughout the village and the reconstruction of currently inaccessible roads near residential areas.

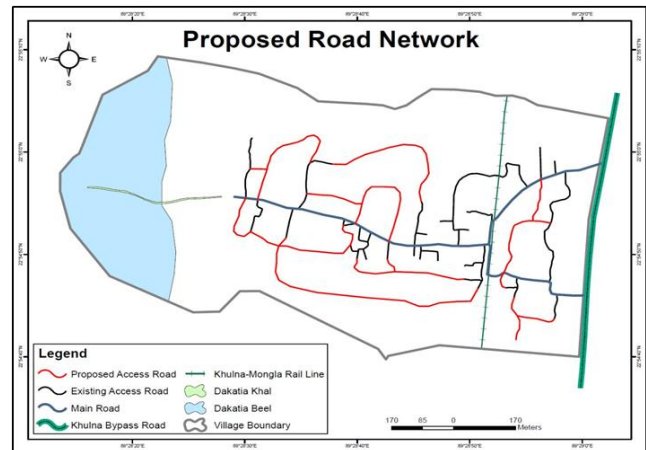


Figure 4: Proposed Road Area

3.4 Waste Management

There is villagers' opinion have been collected of this problem to understand their perception about this problem and to conduct participatory rural appraisal approach in the solution phase. Such as, i.Build dumping sector for waste.ii.Awareness and campaign for the general public. iii.Cattel dung composting.



Figure 5 Framework of waste collection

3.5 Unemployment

To address the unemployment issue effectively, both the villagers and the authors propose actionable solutions centered on sustainable development and skill enhancement. The villagers recommend fostering small businesses

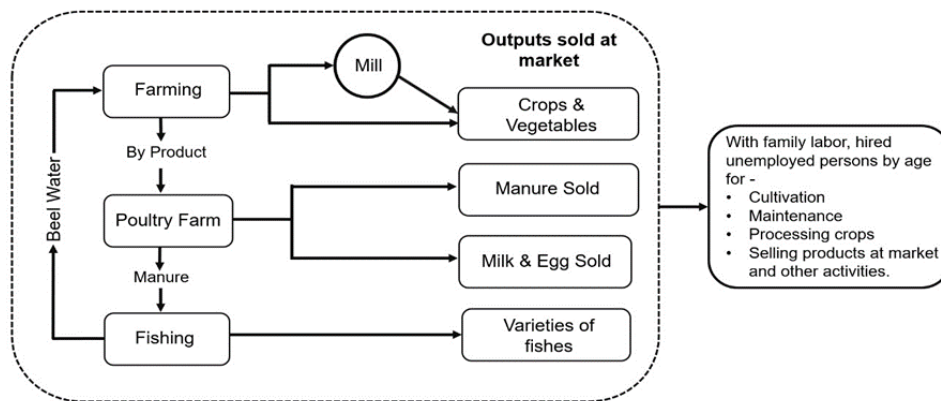


Figure 06 Framework Of Farming System

to generate employment opportunities and enhancing educational awareness. Complementarily, the authors advocate for a localized strategic approach. This strategy would begin with establishing a voluntary youth organization to compile a comprehensive database of unemployed individuals through part-time staff. A subsequent survey would identify unemployed youth, aligning job opportunities with their educational background and market demands. Further, the strategy includes providing specialized training in ICT, fish culture, sewing, tailoring, and poultry farming. Finally, to promote self-employment, tailored loans would be facilitated, empowering individuals to start their ventures. This integrated approach ensures practical support and skill development, aiming to reduce unemployment effectively.

3.6 NGO involvement

Villagers' insights and the participatory rural appraisal approach have shaped the proposed solutions for addressing local economic challenges. The villagers suggest offering installment payments at reduced interest rates and promoting small businesses through microcredits provided by NGOs at low interest. Additionally, they recommend investment in the expansion of locally produced resources like shrimp and vegetables, which could be exported to generate revenue. NGOs are also encouraged to directly create job opportunities in the villages. In response to these suggestions, the authors propose several strategic measures: NGOs will assess the borrower's capacity, typical income, and the intended use of loans to ensure only effective investments are financed. Further, individuals intending to start small businesses will receive training through various welfare programs. To prevent financial overcommitment, NGOs should coordinate to avoid overlapping loans and thus help prevent the poverty trap. Moreover, instead of providing financial loans, NGOs might consider employing individuals in waste management roles, offering stable employment and addressing environmental concerns simultaneously. These coordinated efforts aim to foster sustainable economic growth and improve the quality of life in rural areas.

4. Conclusion

The primary objective of the "Participatory Planning Studio" session was to deepen the understanding of participatory planning tools and their application in accurately representing community-based problems or the current status of communities from diverse perspectives. The Participatory Rural Appraisal (PRA) methodology, a renowned approach within participatory planning, focuses predominantly on rural areas, aiming to engage community members actively in expressing their conditions and demands. The study was conducted in an underdeveloped area lacking essential services and facilities crucial for community welfare. Through interactions with local residents, significant gaps in services and facilities were identified, highlighting the community's needs. This PRA study was executed in Dakatia Village, Khulna, employing various methods to identify and analyze the major challenges faced by the locals, including waterlogging, access to basic services, waste management, unemployment, and NGO involvement. To represent the issues and general state of the community effectively, planning tools such as fishbone diagrams, problem trees, social maps, resource maps, SWOT analyses, mobility maps, and network diagrams were utilized. The findings from this project are invaluable to the planning and development authorities, offering a strategic blueprint for future actions aimed at enhancing the living standards in Dakatia Village by addressing its prevalent issues. This approach not only helps in identifying the challenges but also fosters a collaborative environment for sustainable community development.

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