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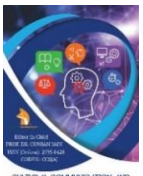

RESEARCH ARTICLE

CONNECTING KNOWLEDGE AND ACTION: A REVIEW OF THE APPLICATION, BENEFITS, AND CHALLENGES OF PRA TOOLS IN COMMUNITY DEVELOPMENT

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ABSTRACT

As tools for community development, Participatory Rural Appraisal (PRA) is considered one of the newer approaches. Advantages of PRA tools include the active involvement of communities, covering all perspectives, and providing locally sensitive data. With tools such as wealth ranking, participatory mapping, and key informant interviews, PRA allows communities to jointly identify problems, opportunities, and priorities. In spite of possible drawbacks like difficulties regarding cultural sensitivity and qualitative data complexity, PRA tools are irreplaceable. These tools enable communities to make informed decisions and claim their own development paths. The adaptability of the PRA and the insistence on local knowledge also make it an important methodology in initiating ecologically sound and participative development projects. The ongoing application and development of PRA tools help in the creation of resilient and self-reliant communities, proactively determining their fate.

KEYWORDS

PRA, Community Development, Wealth Rankings, Participatory Mapping

1. INTRODUCTION

Visualisation and diagramming are key components of the Participatory Rural Appraisal (PRA) family of techniques, which includes Venn diagrams, matrix ranking, and matrix scoring, and is used to support community development (Robinson, 2002). But more than any of its methods, PRA stands out for emphasising participation. According to PRA practitioners, a process can only be deemed fully participatory when all participants have complete control over needs assessment, goal-setting, planning, policy-making, implementation, and evaluation. PRA, which originated in the global south, is becoming more and more popular in developed nations. Its greatest contribution to facilitators working in the North is its dedication to participation. One of the most well-liked and successful methods for obtaining data in rural areas is Participatory Rural Appraisal (PRA).

This method was created in the early 1990s, when there was a significant paradigm shift from blueprint to the learning process and from a top-down to a bottom-up approach. It represents a move away from extractive survey questions and towards locals sharing their experiences. Village experiences, where communities efficiently manage their natural resources, serve as the foundation for PRA (Cavestro, 2003). Groups frequently participate in PRA because it can be enjoyable and stimulates people's creativity and analytical abilities. Its use has had a variety of effects on development, despite the fact that it has many detractors (Cooke and Kothari, 2001). However, because PRA has eluded attempts to define, prescribe, and confine it as a methodology or form of practice, these are occasionally disregarded.

Despite this, PRA has appeared to be more susceptible than any other methodology to what critics refer to as poor practice and practitioners call "abuse." Critics frequently use the popular perception of PRA as people playing with beans and making drawings to disparage its use. Although its most notable aspect may be the use of visualisation, this image also conjures up other aspects of the methodology. The fieldworkers' use of a participatory approach is known as participatory rural appraisal (PRA) or participatory learning and action (PLA). The PRA keeps changing so quickly that definitions must be updated multiple times before they can be considered final. Prof. Robert Chambers has defined and updated PRA multiple times. PRA has been defined as:

• "A family of approaches, methods, and behaviour to enable poor people to plan, monitor, and evaluate their actions, as well as to express and analyse the realities of their lives and conditions." (Chambers, 1992).

"An expanding family of methods, attitudes, behaviours, and approaches to empower and enable people to plan, act, monitor, evaluate, and reflect as well as to share, analyse, and improve their knowledge of life and conditions." (Chambers, 2004).

The purpose of PRA is to assist in enhancing the ability of the villagers to organise, decide, and act in order to better their own circumstances. It is founded on the idea that locals are capable and creative, and that they can conduct their own research, analysis, and planning. PRA is a method and approach for learning about rural life and conditions from, with, and by rural people (Chambers, 1992). PRA encompasses analysis, planning, and action, he added. Villagers and local authorities are actively involved in the PRA process. PRA is a method for establishing rapport and getting people to support, inform, and participate in their own development (Jain and Polman, 2003).

PRA is a tool for gathering various types of data. locating and enlisting targeted groups, encouraging their involvement, and creating avenues for them to take part in project design, execution, monitoring, and decision-making. It is a helpful methodology to concentrate attention on people, their livelihoods, and their interactions with socio-economic and ecological factors because of its participatory nature. One quick way to gather data is through participatory rural appraisal. It is an action research

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methodology that employs a range of methods. Both locals and visitors from various fields and disciplines are involved.

In order to plan and take action, outsiders help locals analyse information, develop critical self-awareness, take responsibility, and share their understanding of life and conditions. (Sadanandan et. al., 2007). PRA serves as both a data collection tool and an on-site, real-time analysis tool, making it a dual-purpose research tool. In the 1970s and 1980s, researchers from the United Kingdom, Canada, Germany, Norway, and Switzerland popularised PRA tools as a new research and engineering tool (Ling, 2011). Numerous books and articles have used and described hundreds of different PRA techniques and tools, and the number is still rising. These techniques can be categorized into four groups (Wikipedia, 2011): Group dynamics, e.g., learning contracts, role reversals, and feedback sessions; Sampling, e.g., transect walks, wealth ranking, and social mapping; Interviewing, e.g., focus group discussions, semi-structured interviews, and triangulation; and Visualization, e.g., Venn diagrams, matrix scoring, and timelines.

2. Methodology

The majority of the information used in this article was sourced from secondary sources, including reports from various organizations, such as the Department of Agriculture, printed research papers, and other relevant websites. Key reports were examined, and conclusions were drawn. Discussions were held with the Institute of Agriculture and Animal Sciences (IAAS) professor and students during the composition of this article.

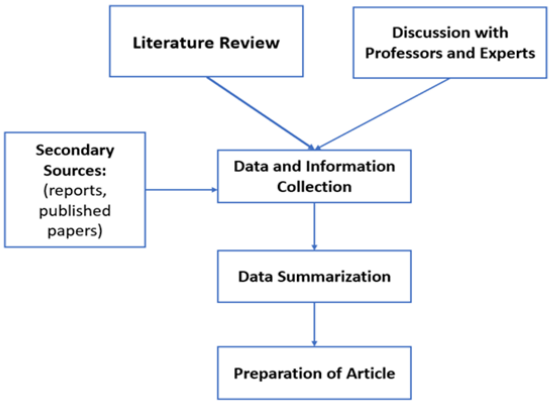

Figure 1: Methodology of research

3. Results And Discussions

Results were drawn from the desk study of secondary data and information from different sources and summarized as follows:

3.1 Group dynamics

3.1.1 Problem tree - objective tree

According to a study, the problem tree identifies the different resources that are in charge of the particular issue associated with a particular field (Sindhu Sadanandan, 2007). This will also show the different causes of the intervention, which will aid in identifying discipline-related problems. It is primarily recognised as a method for creating or evaluating project proposals. According to the target group or other project stakeholders, the Problem Tree assists the research team in compiling a list of issues and their resolutions (Sadanandan et al., 2007). It gives the problems' solutions a visual form (Sadanandan et al., 2007). Relationships between issues, including their causes and effects, are examined using the Problem Tree (Sadanandan et al., 2007). It is frequently used to analyse project proposals, organisational structures, and target groups (Sadanandan et al., 2007; de Zeeuw and Wilbers, 2004). Its most well-known application is in the design and analysis of project proposals (Sadanandan et al., 2007). The tool facilitates conversations about which issues must be addressed in order to resolve fundamental problems and how much participants can influence them. It also illustrates cause-and-effect relationships (Sadanandan et al., 2007; de Zeeuw and Wilbers, 2004). According to stakeholders, it assists researchers and practitioners in documenting issues and solutions (de Zeeuw and Wilbers, 2004). Farmers' opinions about the use of pesticides have been investigated using the Problem Tree (Bond et al., 2009). It showed that farmers thought pesticides improved crop protection, which in turn increased yield (Bond et al., 2009). Farmers reported that using high-power pesticides occasionally posed health risks and hurt the environment, primarily air pollution (Bond et al., 2009). Instead of altering the active ingredient, farmers tended to switch brands when pesticides failed (Bond et al., 2009). The Problem Tree was helpful in other pest management studies as well (Williamson et al., 2003).

3.1.2 Labor Schedules

It alludes to instruments or visual aids that support cooperative labour activity planning and management in communities. Discussing gender-related issues and analysing labour demand for various agricultural activities are beneficial (Cavestro, 2003). It is beneficial to comprehend in depth how labour is used in resource management (Cavestro, 2003). It is used to visualise the circumstances of individuals (men, women, and children living in a household), family households (fishing, farming, etc.), or the overall labour usage pattern at the village level (Cavestro, 2003). In order to plan the activities of service providers or to create a customised service delivery system that meets the needs of the people, the relationship between seasonal cropping patterns, labour engagements, and biophysical/socioeconomic features is analysed (Cavestro, 2003).

3.1.3 Direct matrix scoring

A technique used in decision-making processes, especially in project management or evaluation scenarios where each alternative must be evaluated based on a number of criteria, is direct matrix scoring. It is used to perform direct matrix scoring of various tick species. Herders were asked to identify the various tick species that were found on livestock (Catley and Aden, 1996).

3.1.4 Preference Ranking

A technique for ranking a group of options according to personal or group preferences is called preference ranking. This is to learn how farmers perceive the severity of the issues in the village. It entails a group or an individual ranking a set of issues, preferences, or priorities according to their standards or viewpoints (Sadanandan et al., 2007).

3.1.5 Focus Group Discussion

Under the direction of a facilitator, a small group of people discusses a particular topic in this qualitative research method. One advantage of using FGD as a research tool is that it encourages participants to share and compare information (Ling, 2011). Focus groups are often a good follow-up to household interviews, providing more information on specific topics and helping to determine whether patterns observed in households are also shared by the entire group. Focus group sessions are also ideal for identifying and evaluating potential solutions, as well as for conducting a more in-depth analysis of a specific circumstance or problem (de Zeeuw and Wilbers, 2004). A well-known method in qualitative research is the focus group discussion (FGD), particularly in the areas of masterplan studies, urban and regional planning, and government policymaking that involves public involvement (Ling, 2011). It was used for marketing research for a radio show from the 1950s to the 1980s (Morgan et al., 1998). In social marketing studies like health, FGD became a popular research technique used by applied social scientists (Ling, 2011). Participants in a lively group discussion (typically six to ten people) will carry out the researcher's exploration and discovery work (Morgan et al., 1998). Qualitative research on rural tourism makes use of it (Ling, 2011). It makes it easier for people to share their thoughts and experiences about small-scale, sustainable, market-oriented dairy farms in a social setting (Shamsuddin et al., 2007).

3.1.6 Pairwise Ranking

This method enables community members or stakeholders to make pairwise comparisons between different elements, facilitating the identification of preferences and collective prioritization of items. It can help the respondent in deciding on their most favourable activity. It helps villagers to set priorities (i.e., problems, needs, actions, etc.). The purpose of the PRA tool was to cross-check the outcomes of the PRA activities map and matrix scoring or any observational items (Ling, 2011). Qualitative research on rural tourism makes use of it (Ling, 2011). Pair-wise ranking can be used for complex issues to ascertain the preferences of the villagers (Cavestro, 2003).

3.1.7 Matrix Ranking

When it comes to crop or animal-based technologies, matrix ranking is a crucial PRA tool for evaluating and researching farmers' preferences for a given technology over others (Mahesh et al., 2017). The significance of

agricultural issues was determined by ranking (Cavestro, 2003). A matrix ranking method was used to study farmers' perceptions of dairy cattle breeds (Shamsuddin et al., 2007). In order to discuss preferences and take action, this was used to extract farmers' criteria of value for a class of items (Sahu et al., 1999). Additionally, it can serve as an Activities Map follow-up tool (Ling, 2011). Matrix scoring is a technique used to assess and contrast the relative importance of a few variables that the researcher had predetermined with specific cultural activities (which were selected from the activities map above) (Ling, 2011). Qualitative research on rural tourism makes use of it (Ling, 2011). The association between various tick species and livestock health issues was examined using matrix scoring (Catley and Aden, 1996).

3.1.8 Decision-making matrix

It is a tool for methodically assessing and contrasting options or alternatives according to predetermined standards. To better understand who makes decisions on what matters in the home and, consequently, how decision-making authority is allocated among the members of the household, a decision-making matrix can be developed (de Zeeuw and Wilbers, 2004).

3.1.9 Innovation Tree

It is a tool that is used to visually represent and explore ideas, innovations, and solutions within a community. It can readily strengthen farmer-to-farmer knowledge both inside and outside the community (Van Mele and Zakaria, 2002). It has aided in the analysis and visualisation of how innovations spread among members of a community over time (Van Mele and Zakaria, 2002). The Innovation Tree makes it possible to examine the various roles that different innovators play in introducing the technology to their peers, which is directly related to the development of farmer-to-farmer extension initiatives (Van Mele and Zakaria, 2002). People are more eager to go outside the community to promote the technology, rather than getting engaged in educational activities. In addition to helping outsiders and the community understand some of the social and psychological factors that affect the adoption and diffusion of an innovation within that community, it is found to be a very helpful tool for differentiating between innovators and early and late adopters (Van Mele and Zakaria, 2002).

3.1.10 Diagram exhibition

The research activity's diagrams, maps, charts, and photographs are put on display in a public area to promote information sharing, encourage dialogue, and serve as an extra cross-checking tool (Brown et al., 2022). The exhibition can inspire other villagers to take part in research activities.

3.1.11 Night halts

It is a tool used to gather information and insights about a community by spending nights in the community itself. It encourages a shift in the attitudes of the outsiders, facilitates all interactions between the villagers and the outsiders, and permits conversations in the morning and evening, when the villagers typically have more free time (Cavestro, 2003).

Table 1: PRA Tools, Objectives, and Benefits

PRA Tool	Objective	Benefits	Reference
Problem Tree	Identify causes and effects	Visualizes relationships, guides solutions	Sadanandan et al., 2007
Social Mapping	Map social structures	Reveals disparities, encourages discussion	Cavestro, 2003
Seasonal Calendar	Track seasonal patterns	Plan activities, identify opportunities	de Zeeuw and Wilbers, 2004
Innovation Tree	Explore and visualize innovations	Helps farmer-to-farmer knowledge sharing	Van Mele and Zakaria, 2002
Focus Group Discussion	Discuss specific topics with small groups	Provides qualitative insights and solutions	Ling, 2011
Key Informant Interview	Gather info from knowledgeable individuals	Cross-check data and gain local perspectives	Cavestro, 2003

Table 2: Challenges and Mitigation Strategies for PRA Tools

Challenge	Impact	Mitigation Strategy	Reference
Cultural sensitivity	Misinterpretation of local context	Use local facilitators, pre-test tools	Chambers, 2004
Power dynamics	Marginalized voices excluded	Ensure inclusivity, balance groups	Cooke and Kothari, 2001
Qualitative data complexity	Difficult comparability	Use triangulation, mixed methods	de Zeeuw and Wilbers, 2004
Time-consuming	Longer data collection	Prioritize key tools, plan field visits	Cavestro, 2003
Facilitation skills	Poorly conducted sessions	Train facilitators practice participatory methods	Sadanandan et al., 2007

3.2 Sampling

3.2.1 Transect walks and guided field walks

Finding the different objects found in the village, such as soil, crops, animals, issues, etc., requires a lengthy walk through the village. It is a planned stroll through the designated area (Sindhu Sadanandan, 2007). It is best to go on this walk with a group of locals who are familiar with the area. This will aid in the social map's verification. Additionally, it aids the facilitator in concentrating on a few important topics or problems (Sadanandan et al., 2007). Knowing the agroecological zones in rural areas is important, but so is getting detailed information from the participating villagers about the uses, challenges, and opportunities of these zones in the village (Sadanandan et al., 2007). This approach allows the outsider to rapidly learn about the community's resources, forests, watersheds, land use, topography, and soils (Cavestro, 2003). Compared to mixed groups, the transect walk may foster a more private setting where delicate topics, such as resource access and utilisation and associated conflicts, can be discussed more openly (de Zeeuw and Wilbers, 2004). According to a study the walk can also be used to pinpoint opportunities and issues, such as those of resource access and utilisation in the different areas of the transect that were visited (de Zeeuw, 2004).

3.2.2 Wealth and well-being rankings

It refers to tools and approaches used to assess and rank households or individuals based on their perceived wealth and well-being. It establishes the economic characteristics of a village's households. It displays data on the relative prosperity and standard of living of a village's households. It aids in assessing the economic and social standing of a village's households (Cavestro, 2003). Cross-checking information and starting conversations about a particular subject (like poverty) are two uses for this technique. The method can also be used to create a standard by which subsequent development initiatives can be assessed or measured (Cavestro, 2003). It can be used to determine relative household positions and wealth criteria (Cavestro, 2003). Finding the village's impoverished households is made easier with the data produced by the wealth ranking exercise (Cavestro, 2003). It provides a starting point and a chance to find indicators for the planning, carrying out, tracking, and assessing of village development activities (including choosing a strategy for organising the village)

(Cavestro, 2003).

3.2.3 Review of Secondary data

Reviewing secondary data as a Participatory Rural Appraisal (PRA) tool entails looking at previously published data, reports, surveys, and studies to learn more about the circumstances and background of the community. Finding gaps and potential contradictions in the available data is helpful, as is gaining a preliminary understanding of the target group's circumstances as well as the socioeconomic and institutional background (de Zeeuw and Wilbers, 2004). This will help to formulate an alternative working hypothesis for the field study and to design the fieldwork.

3.2.4 Direct observation

In Participatory Rural Appraisal (PRA) methodologies, which use cooperative and participatory approaches to comprehend and address the needs of rural communities, direct observation is a useful tool. This tool can be used in any phase of the project cycle. Direct observation allows a cross-check of the findings of what people tell. The hypothesis arising from direct observation should be cross-checked, e.g., with key informants or group interviews. Observations are analyzed afterwards for patterns and trends. When people report social norms rather than actual behaviour, or when realities are hard to describe, direct observation can capture them (de Zeeuw and Wilbers, 2004). It sheds light on gender-related topics like activities, responsibilities, decision-making roles, involvement in the community, self-assurance, and social conduct (de Zeeuw and Wilbers, 2004). Direct observation can be used to generate on-the-spot questions in direct interaction with the farmers. This makes it easier for farmers to explain concepts that are based on their work rather than their memories of it (Cavestro, 2003). It facilitates the generation of questions by scientists (Cavestro, 2003).

3.2.5 Interviewing

3.2.5.1 Semi-structured interview

One popular qualitative research technique in Participatory Rural Appraisal (PRA) and other social research methodologies is the semi-structured interview. It incorporates aspects of both unstructured and structured interviews, enabling a conversational and adaptable approach while preserving a certain level of organisation. Speaking with villagers about subjects that interest them yields important information (Cavestro, 2003). The interviewer has a lot of freedom to go deeper into some questions (Cavestro, 2003). Limiting the topics to be covered in the interview makes interviewing a variety of people more methodical and thorough (Cavestro, 2003). Logical gaps in the data collected can be anticipated and closed, while the interviews remain fairly conversational and situational (Cavestro, 2003). It can be carried out on an individual, household, or community level (Groverman, 1992). At any point during the project cycle, interviews can be conducted. (Groverman, 1992; Lingen et al., 1998). It doesn't allow the interviewer to delve into interesting subjects or problems that weren't considered when the interview guide was developed (Cavestro, 2003). Variability in the interviewer's question phrasing and sequencing can lead to significantly different responses from various individuals, which diminishes comparability (Cavestro, 2003). It is employed to gather information about a topic from a single person or a small group (Cavestro, 2003). It is helpful to gather information about a particular topic or, in general, to analyse opportunities and problems, to discuss plans, and to elicit perceptions (e.g., on gender relations). (De Zeeuw and Wilbers, 2004)

3.2.5.2 Key informant interview

It entails interviewing people who are thought to be informed and knowledgeable about a specific community, problem, or topic of interest. The informants may belong to the target group, such as local leaders or employees of development programs and support groups in the industry in question (both men and women) (Groverman, 1992; Lingen et. al, 1998). It is necessary to cross-check the data obtained from the key informants by conducting interviews with other individuals and holding group discussions. (Cavestro, 2003). Information from other sources should be cross-checked with the interviewee's potential biases. Care should be taken when choosing key informants. (De Zeeuw and Wilbers, 2004).

3.2.6 Visualization

3.2.6.1 Social mapping

A social map is a graphic depiction of a neighbourhood that includes pertinent social data. A given area's physical boundaries, settlement pattern, physical infrastructure, social, cultural, and religious institutions, and other related details are provided. It serves as a foundation for organising, carrying out, overseeing, and assessing village development projects by assisting in the planning and visualisation of the locations of residences and community facilities (Cavestro, 2003). Since locals like mapping, it's a good way to start a conversation (Sadanandan et al., 2007). A social map of the Panicheyam area in the Asamannoor Panchayat of the Ernakulam District depicts the village's entire social structure. (Sadanandan et al., 2007). It is used to learn about the village's social structures and the disparities in wealth, religion, and ethnicity among the households. to find out who lives where, to gain knowledge of the social institutions and the various perspectives that the local population may hold about them (Cavestro, 2003). The purpose of the social map is to show the village's social structure. (Sadanandan et al., 2007)

3.2.6.2 Resource Mapping

The natural and artificial resources required for agricultural development are shown on the resource map. In essence, it covers the specific land use in the village, such as fishing areas, seashore, village ponds, backwaters, agricultural land (wet/garden/dryland), grazing area, waste land, forest land, water bodies, etc. This aids in understanding the village, community, and its resource base. It aids in our understanding of a community's resources (Cavestro, 2003). The villagers find it simple and enjoyable (Cavestro, 2003). After transect planning was guided by the participatory resource map, participants ranked options or "best bets," identified opportunities and problems, and selected key characteristics of the problems (Sahu et. al., 1999). It is employed to obtain valuable data regarding how locals view resources (Cavestro, 2003). It is employed to find out how the locals view the community's natural resources and their use (Cavestro, 2003). The community's physical attributes, especially its dairy-related resources, were meticulously sketched (Shamsuddin et al., 2007). The village's location, the resources that are available and how they are used, the way that common property resources are used, the sources of firewood, water, grazing, fishing, and backwater, as well as the limitations and possibilities of each of the resources mentioned (Sadanandan et al., 2007).

3.2.6.3 Mobility map

It displays the means of transportation, the extent of group and community mobility, and the significance of various locations in relation to their various activities (Sadanandan et al., 2007). In addition to promoting discussion on how to close or eliminate these gaps in project planning, the mobility map assists in identifying and discussing gender-differentiated access to resources, decision-making, and their livelihood impacts (de Zeeuw and Wilbers, 2004). This demonstrates the various reasons why farmers go out (Sadanandan et al., 2007). To ascertain where, why, and how frequently farmers travel in connection with dairying, mobility mapping was employed (Shamsuddin et. al., 2007).

3.2.7 Venn diagram

It is a visual aid for investigating and comprehending the connections, exchanges, and overlaps between different institutions in a community or larger social setting. This demonstrates the significance of the different people and the institution, both inside and outside the village, in relation to a phenomenon (Sadanandan et al., 2007). It displays the village's institutions, groups, organisations, and significant individuals as well as the villagers' perception of their own significance in the community (Cavestro, 2003). Venn diagrams aid in comprehending the functions of various institutions within a community, their connections with one another, and the relative significance of each in people's lives (Sadanandan et al., 2007). When the respondents engage in group interactions, this approach works best. The goal of the entire exercise is to ascertain how people view these institutions in relation to their own lives (Sadanandan et al., 2007). It describes the gender and socioeconomic makeup of these groups' members (Cavestro, 2003). It shows how closely those groups and organisations communicate and work together (Cavestro, 2003). It assists in identifying important people, organisations, and groups that are involved in the community; evaluating participation by gender and wealth; and examining connections between cooperation, communication, information sharing, and service delivery. (Cavestro, 2003). Lines are added to reflect inputs and outputs, and overlapping circles are used to symbolise individuals, villages, or institutions in order to illustrate the relationships between them (Cavestro, 2003).

3.2.8 Daily Routine Diagram

It is a tool for graphically depicting the everyday routines and activities of people in the community. It displays the time of day as well as the regular

activities of the various household members. (Cavestro, 2003). The PRA tool is helpful for tourism anthropology research, particularly when figuring out how much time is spent on particular activities (Ling, 2011). It can assist the respondent in choosing their most advantageous activity (Ling, 2011). It is used to determine peak labour usage periods and gender-related problems, such as women's overwork. (Cavestro 2003). This diagram of daily routines shows how farmers spend their time from dawn until dusk. Diagrams of daily routines illustrate the various activities people engage in daily. It not only shows the time spent in different activities but also the size of the work involved. (Sadanandan et al., 2007). It is possible to compare the broad trends of various groups. These daily routines can also be shown seasonally to show the workload and limitations of various groups involved in various activities (Sadanandan, Sindhu, 2007).

3.3 Activities Map

It is a simple diagrammatic activity that provokes and kick-starts a discussion. It is used in qualitative rural tourism research (Priyanka and Devarani, 2022).

3.4 Activity Calendars

They are instruments that arrange and graphically depict the schedule and timing of different community activities. It may also reveal information on shifts in patterns and trends when compared to records from previous eras (de Zeeuw and Wilbers, 2004). Activity calendars can be created for any time frame that is pertinent to the subjects and circumstances being studied (de Zeeuw and Wilbers, 2004). It aids in determining the opportunities and limitations for women's participation in upcoming project activities (de Zeeuw and Wilbers, 2004). It assists in determining who performs what tasks (social, reproductive, and productive), where and when they are completed, how long and frequently they take, and what issues are related to them (de Zeeuw and Wilbers, 2004). It makes it possible to gather information about women's responsibilities and to identify issues pertaining to these activities and/or particular times of the day, season, or year (de Zeeuw and Wilbers, 2004).

3.5 Daily-activity profiles

It is a tool that records and illustrates the everyday activities, chores, and routines of people or households in a community. By tracking how long it takes to finish tasks, researchers can examine and contrast the daily activity patterns of men, women, children, and seniors (Cavestro, 2003). It is used to ascertain each person's role in the dairying activities and to find out how farm couples spend their days (Shamsuddin et al., 2007).

3.6 Participatory mapping and modeling

It entails teamwork to produce visual depictions of resources, community dynamics, and geographic features. Watersheds, forests, farms, home gardens, residential areas, soils, water sources, wealth rankings, household assets, land-use patterns, changes in farming practices, constraints, trends, health and welfare conditions, and the distribution of different resources can all be shown using this technique (Cavestro, 2003).

3.7 Seasonal calendars/Time chart

It determines patterns and trends throughout the year in a certain village. This approach can be used to analyse problems that exhibit a cyclical pattern, such as the availability of food, the prevalence of diseases, debt, relative prosperity, livelihood stress, rainfall, water availability, and so forth. Rainfall distribution, food availability, agricultural production, income and expenses, health issues, and other factors are among its uses. Cavestro It is employed to gather data on how the villagers divide their time and labour among the different village activities (Cavestro 2003). In addition to demonstrating the seasonality of agricultural and non-agricultural workload, food availability, human diseases, gender-specific income and expenditure, water, forage, credit, and holidays, it is used to learn about changes in livelihoods throughout the year (Cavestro, 2003). This shows the anomalies for a given field on a month-by-month basis. The seasonal patterns of various facets of life, activities, events, or issues are examined using this technique (Sadanandan et al., 2007). To demonstrate month-to-month variations and seasonal constraints, as well as to highlight opportunities for action, variables like rainfall, labour, income, expenses, debt, animal fodder or pests, and harvesting periods can be drawn (or created with stones, seeds, and sticks) (Cavestro, 2003). It visually represents the seasonal trends in both hired and domestic labour, broken down by age and gender. (De Zeeuw and Wilbers, 2004). By examining seasonal patterns in pest attack, rainfall, markets, storage, etc., it is used to plan agricultural and horticultural interventions (Sadanandan et al., 2007). It is used to plan activities that create jobs by researching labour availability trends, among other things (Sadanandan et al., 2007). Data on tick population seasonal variations were gathered using seasonal calendars. (Catley and Aden, 1996). A seasonal calendar was also employed for linking seasonal tick populations with rainfall (Catley and Aden, 1996). Seasonal calendars were constructed to examine the variations in the monthly supply of fodder, milk yield, and outbreaks of cattle diseases. (Shamsuddin et al., 2007). This is a fact sheet, and these are prepared during interview discussion and group discussion with available local resources such as sticks, stones, seeds, etc., to visualize and prepare the calendar collectively (Sahu et. al., 1999).

3.8 Trend Analysis; Timeline (Historical Mapping)

This indicates the major events remembered by the villagers. It can help communities focus on future actions and information requirements. Elderly villagers narrate their life histories. It is difficult to remember the exact dates of important changes. The timeline of fundamental events can be used for targeted conversations about issues, technological and social advancements, or the history of community collaboration and activities that have enabled them to successfully address previous challenges (Cavestro, 2003). Instead of showing the exact changes in various facets of village life, it depicts their general movements (Sadanandan et al., 2007). Simple tools for visualising historical events and significant perceived changes were timelines and historical profiles (Sahu et al., 1999).

3.9 Trendline

This indicates the change in the past few years related to variables concerned with a particular field. It is more precise in indicating change. The prevalence of major diseases, the number of afflicted people, the number of livestock, the number of trees, the pattern of rainfall, and other elements of village life are all quantitatively changed over time using this method (Sadanandan et al., 2007). Trends to examine in urban agriculture and gender include changes in cropping patterns, land and water prices and availability, the involvement of men and women in farming or off-farm work, shifts in their agricultural workload, and disparities in services offered to male and female farmers (El Khateeb et al., 2023).

3.10 System Analysis Diagram

It is a visual representation that helps analyze and understand the various components, relationships, and dynamics within a system. The system analysis diagram was used to discuss the constraints limiting the development of dairy products, such as issues with acquiring inputs, selling outputs, developing opportunities, and service availability (Shamsuddin et al., 2007).

3.11 Pie Charts

When information regarding the distribution or composition of various elements within a community or a particular context needs to be visually represented, a pie chart can be a useful tool in Participatory Rural Appraisal (PRA) activities. Pie charts were used to illustrate the utilization of participants' land and the ingredients used in formulating cattle feed (Purnama et al., 2022).

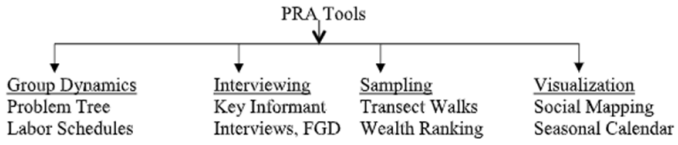

Figure 2: Categorization of PRA Tools (Source: Cavestro (2003); Ling (2011); Sadanandan et al. (2007)

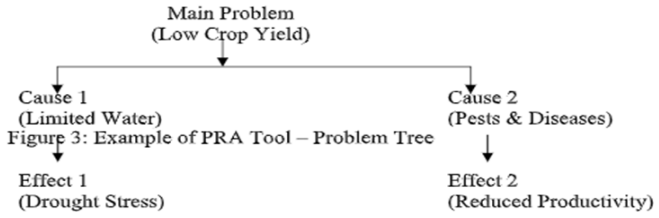

Figure 3: Example of PRA Tool – Problem Tree (Source: Sadanandan et al. (2007); Bond et al. (2009)

4. Conclusion

Participatory Rural Appraisal (PRA) tools provide an inclusive and

participatory method of comprehending local realities and empowering communities, and are essential to community development. The benefits of PRA tools are clear in their capacity to generate context-specific data, encourage community engagement, and record a variety of viewpoints. PRA tools allow communities to actively participate in identifying opportunities, challenges, and development priorities through the use of techniques like wealth rankings, participatory mapping, and key informant interviews. In addition to improving the quality of the information, this participatory process fosters a sense of collective responsibility and ownership. However, the possible implementation difficulties are the drawbacks. Cultural sensitivity, power dynamics, and the requirement for expert facilitation are some of the problems that PRA processes may encounter. To avoid unintentionally reinforcing current inequalities, it is imperative that all members of the community, including those from marginalised groups, have a voice in the process. Furthermore, the qualitative character of PRA data may make standardisation and comparability difficult, especially when attempting to incorporate findings into more comprehensive development frameworks. Notwithstanding these difficulties, community-driven development now relies heavily on the application of PRA tools. The knowledge gathered from PRA techniques helps to create focused interventions and supports evidence-based decision-making. By acting as catalysts for community mobilisation, PRA tools empower communities to take control of their own development paths. Participatory mapping and other visual tools improve communication by simplifying complex information. PRA is a useful methodology for sustainable and context-specific development projects because of its strengths, which include its flexibility, adaptability, and emphasis on local knowledge. In summary, the benefits of PRA tools—such as informed decision-making, nuanced data collection, and community empowerment—outweigh the drawbacks. When used carefully, PRA tools become invaluable resources for promoting sustainable and inclusive community development. Their ongoing application and improvement help create resilient, independent communities that actively control their own fates.

References

Bond, J.L., Kriesemer, S.K., Emborg, J.E., and Chadha, M.L. 2009. Understanding farmers' pesticide use in Jharkhand India. Extension Farming Systems Journal, 5(1), 53-61.

Brown, G., Kyttä, M., and Reed, P. 2022. Using community surveys with participatory mapping to monitor comprehensive plan implementation. Landscape and Urban Planning, 218, 104306.

Catley, A.P., and Aden, A. 1996. Use of participatory rural appraisal (PRA) tools for investigating tick ecology and tick-borne disease in Somaliland. Tropical Animal Health and Production, 28(1), 91-98.

Cavestro, L. 2003. PRA-participatory rural appraisal concepts methodologies and techniques. Padova University. Padova PD. Italia.

Chambers, R. 1992. Rural appraisal: Rapid, relaxed and participatory. Institute of Development Studies.

Chambers, R. 2004. Ideas for development: Reflecting forwards. Institute of Development Studies.

Cooke, B., and Kothari, U. (Eds.). 2001. Participation: The new tyranny? Zed Books.

de Zeeuw, H., and Wilbers, J. 2004. PRA tools for studying urban agriculture and gender.

El Khateeb, S., Saber, M., and Shawket, I. M. 2023. Urban reflections through home gardening; Does Gender Matter?. Ain Shams Engineering Journal, 14(3), 101885.

Groverman, V. 1992. Rapid Rural Appraisal/Participatory Rural Appraisal—a tool for gender impact study. DHV Consultants, Amersfoort.

Jain, S. P., and Polman, W. 2003. A handbook for trainers on participatory local development: The Panchayati Raj model in India.

Ling, R. S. J. 2011. The PRA tools for qualitative rural tourism research. Systems Engineering Procedia,1, 392-398.

Lingen, A. C., Brouwers, R., de Klerk-Nugteren, M., and Plantenga, D. 1998. Gender assessment studies: A manual for gender consultants.

Mahesh, V., Lekshmi, P. S., Pawar, D. A., Kumar, A., and Prakash, P. 2017. Matrix Ranking-An important PRA tool to assess farmers' preferences and priorities. Agricultural Science Digest-A Research Journal, 37(2), 100-105.

Morgan, D. L., Krueger, R. A., and King, J. A. 1998. The focus group guidebook. Sage.

Priyanka, P. S., and Devarani, L. 2022. Capturing community participation in rural tourism through PRA: A Study in Meghalaya. Indian Journal of Extension Education, 58(2), 35-41.

Purnama, R.P.B., Azizah, S., and Chuzaemi, S. 2022. Agricultural Land Utilization for Beef Cattle Business Development in Kediri City. International Journal of Advanced Engineering Research and Science, 9, 2.

Robinson, L. 2002. Participatory rural appraisal: A brief introduction. Group facilitation, (4), 29A.

Sadanandan, S., Natarajan, P., Antony, J., and Vipinkumar, V.P. 2007. Data tools: Participatory rural appraisal techniques.

Sahu, B. B., Radheyshy, A. M., Kumar, K., Mukherjee, S. C., and Ayyappan, S. 1999. Farmer participatory fish disease surveillance and monitoring: Use of PRA tools.

Shamsuddin, M., Alam, M. M., Hossein, M. S., Goodger, W. J., and Ahmed, T.U. 2007. Participatory rural appraisal to identify needs and prospects of market-oriented dairy industries in Bangladesh. Tropical Animal Health and Production, 39 (7), 567–581

Van Mele, P., and Zakaria, A. K. M. 2002. The Innovation Tree: a new PRA tool to reveal the innovation adoption and diffusion process. PLA Notes,45, 54-58.

Wikipedia contributors. 2011. Participatory rural appraisal. In Wikipedia, The Free Encyclopedia. Retrieved from http://en.wikipedia.org/wiki/Participatory_rural_appraisal

Williamson, S., Little, A., Ali, M. A., Kimani, M., Meir, C., and Oruko, L. 2003. Aspects of cotton and vegetable farmers' pest management decision-making in India and Kenya. International Journal of Pest Management, 49(3), 187-198.